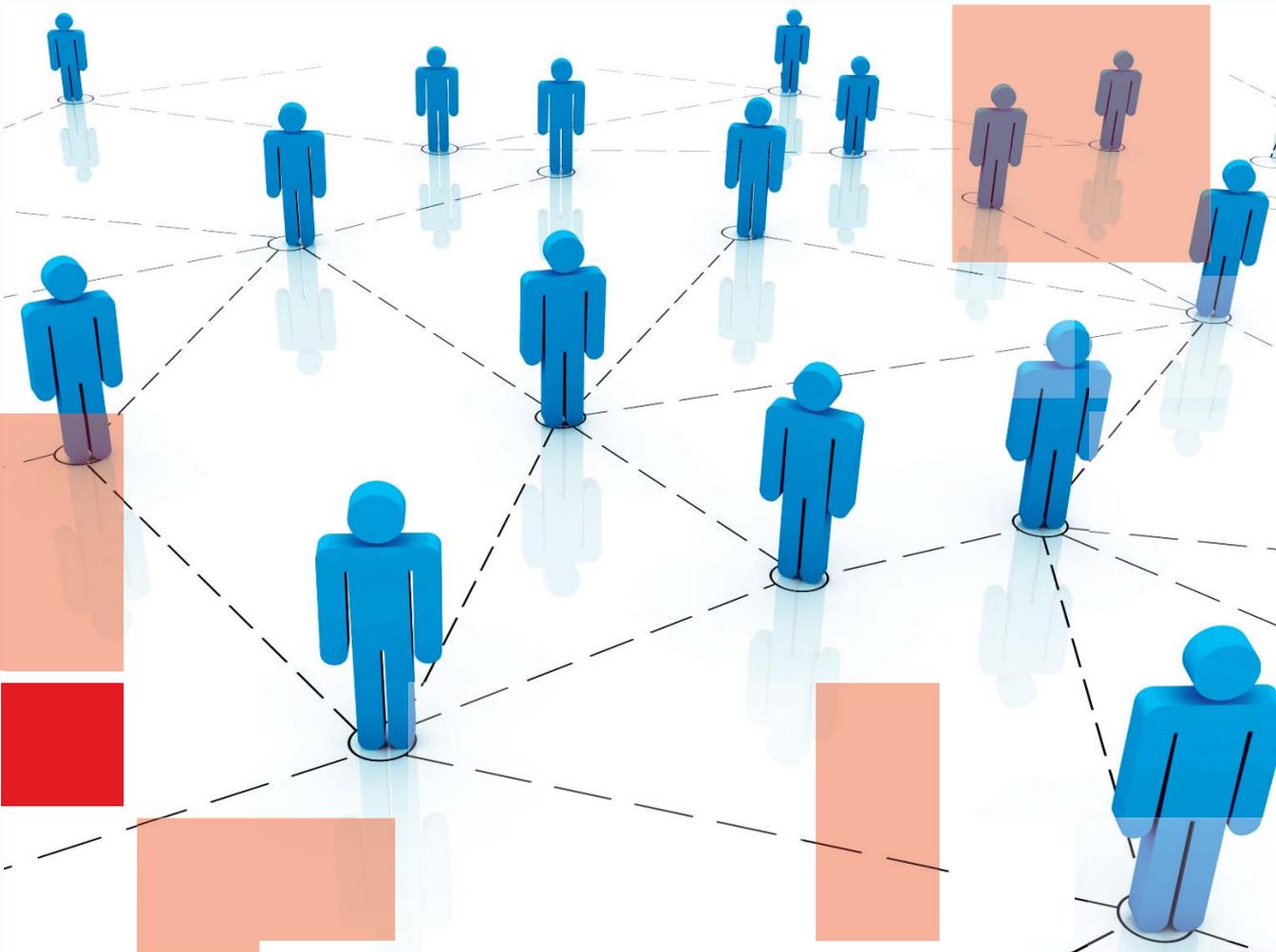


The Theories and Practices of Organizational Excellence: **NEW PERSPECTIVES**

Editors: Kevin J Foley, Philippe Hermel



**THE THEORIES AND PRACTICES
OF ORGANIZATION EXCELLENCE:
NEW PERSPECTIVES**

**Kevin J. Foley
Philippe Hermel**

Editors

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CONTENTS

Acknowledgements

Preface

Chapter One

Page 15

An empirical study of the validity of business excellence models and the relationships between ‘enablers’ and ‘business results’

Nihal P. Jayamaha, Robin S. Mann and Nigel P. Grigg

Chapter Two

Page 49

Quality management as innovation management

Soren Bisgaard

Chapter Three

Page 77

Organizational excellence in healthcare

Ronald J. M. M. Does and Jaap van den Heuvel

Chapter Four

Page 105

From Organization to Whole-of-System Excellence: The Issue of Water

Suzy Goldsmith, Danny Samson and Bill Robertson

Chapter Five

Page 127

Management models for the future

Jan Jonker and Jacob Eskildsen

Chapter Six

Page 147

Corporate social responsibility and organizational excellence: Linking the stakeholder and resource-based view

Klaus J. Zink and Ulrich Steimle

Chapter Seven

Page 177

Organizational excellence and the management of knowledge: To what extent can we build on the Knowledge Based View of the Firm?

Pascal Corbel and Milé Terziovski

Chapter Eight

Page 205

Process management and system thinking for sustainable development

Raine Isaksson, Jacob Hallencreutz and Rickard Garvare

Chapter Nine

Page 233

Market structure, market strategy and customer satisfaction

Jacob Eskildsen, Kai Kristensen and Elmer Steensen

Chapter Ten

Page 253

*Differentiation and commoditization in the global marketplace:
Significance for the enterprise and for the individual*

Douglas A. Hensler

Chapter Eleven

Page 269

Leadership for business excellence: The gender perspective

Eileen Drew

Chapter Twelve

Page 295

*The power implications of quality management: Some first
thoughts*

Stewart Clegg, Philippe Hermel and Kevin Foley

Chapter Thirteen

Page 335

*Developing supply chain excellence through strategic quality
management*

Milé Terziovski and Philippe Hermel

Chapter Fourteen

Page 359

Comparative analysis of nine performance measurement systems

**Miguel Angel Heras Forcada, Juan Ramis-Pujol and Jose Luis Guerrero
Cusumano**

Chapter Fifteen

Page 389

ISO 9000: Observations on its first twenty years

Kevin Foley, Stanislav Karapetrovic and Ross Wraight

Chapter Sixteen

Page 425

Quality assurance in Russian universities in the Bologna context

Vera V. Azaryeva, Sergey A. Stepanov and Sergey O. Shaposhnikov

Chapter Seventeen

Page 433

Strategic management: A factor for improving the processes of coordination between public service and the political sphere in public organizations

Annie Bartoli and Sylvie Trosa

Chapter Eighteen

Page 463

Quality management and Complexity in public services

Mike Donnelly

Chapter Nineteen

Page 477

Third generation quality management II: Alignment implications for the business proposition, strategies and value creation

David Foster and Jan Jonker

Chapter Twenty

Page 501

Reframing Quality Management

Bjarne Bergquist, Kevin Foley, Rickard Garvare and Peter Johansson

Chapter Twenty One

Page 539

Epilogue

Douglas A. Hensler

About the authors

Page 545

ACKNOWLEDGEMENTS

This book is the output of the sixth meeting of the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) - a long name for a small group of approximately fifty scholars, some twenty-five to thirty of who meet each year to critically discuss organization management. This meeting was held at the University of Versailles, Saint-Quentin-en-Yvelines, June 19-22, 2007. Like any conference, the meeting at the University of Versailles was made possible by the efforts of very many colleagues and friends. Generously sponsored by *Larequoi - Management Research Center* - and assisted in very many ways by the staff and students of that component of the UVSQ Faculty of Business, MAAOE VI proved to be both an enjoyable and energizing experience.

While Kevin Foley and Philippe Hermel were formally the conference organizers and acted as hosts, we had a relatively small part in arranging and conducting the conference. Any credit for what was widely regarded as a most successful meeting should be directed to Martine Marsal, Kathryn Drew and Anouar Mahjoub. It was they who produced the *Working Papers*, booked and arranged the conference rooms, organized the champagne welcome, lunch and coffee each day and the Conference Dinner. And the credits do not stop there. Many of the preparatory and day-to-day tasks of Martine, Kathryn and Anouar could not have been completed as effortlessly as they were without the support of Caroline Kaplan, Sandrine Gihl and Sylvie Yung. We are ever grateful to have had the stimulating and intellectually enriching experience of three days with our MAAOE colleagues and proud of the support of such a wonderful, ever busy and always cheerful organization team. The efficient informality of the MAAOE VI organization team contributed significantly to the now evident transformation of MAAOE from the large group of management scholars with a shared interest in organization excellence and quality management that met in Estes Park, Colorado in 2000, into a family of colleagues that seven years of association have made for a camaraderie and ease, and depth (and vigor) of discussion rarely achieved in management research.

With completion of what was much more a Workshop than a conference came the task of revising the presented papers and their preparation for publication by SAI-Global. This second in what is planned to be a long series of books that advance the understanding of

organization theory and practice could not have been published without the personal involvement and generous support of the previous and present Chief Executive Officers of SAI-Global; Ross Wraight and Tony Scotton, respectively. The decision of SAI-Global to contribute to the organization of MAAOE V in Sydney and publish the output of that meeting as a contribution to organization research has allowed the work of MAAOE to be presented in a manner, and with a reach and quality of presentation, that was not otherwise possible. The ready agreement of SAI-Global to continue its role as publisher is at once an endorsement of the objectives of MAAOE and illustration of an attitude to scholarly research that is all too rare among commercial organizations; especially those that develop and administer Excellence Models and audit organizations against national and international management standards.

While there are many who must contribute to the publication of a book of this nature it was Martijn Laguna, Denis Dawkins and Diana Lau who carried the responsibility for transposing the edited papers into a book that we trust will be both an enjoyable and informative read, and a useful reference. Finally, we extend our fulsome thanks to the contributors for their assistance and patience during the editing process and to Professor Geoffrey Vining (Virginia Tech., and current Chair of the ASQ, Publications Management Board) for his provocative address on statisticians as organizational leaders.

Kevin Foley

Philippe Hermel

PREFACE

This second in the series of books produced by the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) is in many ways an extension of the first book, which was published in 2007 and Part II of an unfolding story. As at the Sydney meeting of MAAOE each chapter in this book started life as a draft paper that was discussed for some forty five minutes by thirty leading management scholars. Over a subsequent period of six months draft papers were revised and submitted for editing. Most, if not all of the papers submitted for publication reflect the challenge MAAOE set itself in Sydney in 2006 to take a critical view of existing management theory and practice (especially that relating to organization excellence and quality management) and further develop this increasingly important field of research. In what one would hope is a trend and defining feature of MAAOE is the introduction of new issues and/or placing new importance on issues that have either largely been ignored, or thus far not given the attention they warrant. In this book Bisgaard's chapter on innovation, Drew on gender and Clegg, Hermel and Foley on power are the more obvious examples of that focus.

Although not entirely new it is nevertheless refreshing (and important) to see MAAOE participants making consistent and informed reference to seminal organization thinkers such as Smith, Weber, Marshall, Follett, Schumpeter, Coase, Penrose, Arrow and Romer. One of the deficiencies of contemporary quality management and organization excellence literature (indeed most management literature) has been its failure to absorb, build upon and reference the theory of the firm literature of economics and sociology. Those who write on issues such as corporate social responsibility, innovation, entrepreneurship, stakeholders and have not read Pigou, Schumpeter, Follett and Penrose have not only missed the opportunity to see the earliest thoughts on those issues but also deny themselves the pleasure of reading literature that has an eloquence and scholarship rarely seen today – who could not rejoice in the imagery of Schumpeter's entrepreneurs as “the creator of new combinations in production, marketing, sources of supply and organization”, and innovation as “gales of creative destruction”; Follett's “interconnectedness” of stakeholders, or Penrose's firm in the “...uncomfortable no-mans-land between the high and dry plateaus of ‘pure theory’ and the tangled forests of ‘empiric – realistic’ research”. Indeed, who can expect to be at the forefront of management thought and fully appreciate the pivotal place of innovation in

contemporary society without knowledge of the 1986 and 1990 *Journal of Political Economy* papers of Paul Romer.

Other interesting, and pleasing, ways in which MAAOE is developing, include:

- An ever widening geographic and discipline base. MAAOE VI saw the inclusion of German and Russian scholars and the addition of sociology to its already extensive array of disciplines.
- An increase in the number of young scholars. Four contributors to MAAOE VI are Ph. D students.
- Several authors choosing to use successive MAAOE meetings as the venue for developing a thesis and reporting progress on multi-year studies. For example the work of Bergquist, Foley, Foster, Garvare, Hensler, and Jonker on third generation quality management is the latest development of an idea that had its origins in the first MAAOE meeting at Estes Park, Colorado in 2000. Chapters on the empirical validity of business excellence models (Jayamaha, Mann and Grigg), performance measurement systems (Forcada, Ramis-Pujol and Guerrero-Cusumano), on markets and customer satisfaction (Eskildsen, Kristensen and Steensen), and on whole-of-system excellence (Goldsmith, Samson and Robertson) are examples of extensions of research first reported at MAAOE V in Sydney in 2006.
- Collaborations between scholars who are unlikely to have met were it not for the formation of MAAOE. Chapters Five, Twelve, Thirteen, Nineteen and Twenty are written by scholars who are from different continents and disciplines and first met at a MAAOE conference, and subsequently found sufficient common interest to conduct joint research. A principal benefit of these multinational and multi discipline collaborations has been an exposure to ideas that were previously difficult, if not impossible, to access without the ability to read non- English literature. France and Sweden are two examples of countries where a considerable body of management literature does not get translated to English.

- Overt attention to the theory of models and tools. As the reader will see from the brief history of MAAOE contained in the Bergquist, et al., chapter, a central concern of those who formed MAAOE was that the assumptions and “principles” that formed the foundation of quality management and organization excellence literature were largely unsupported assertion rather than explicit and empirically supported theory. Almost every chapter in this book addresses the issue of theory by re-examining existing theories, developing new theories, or both.

- Avoidance of bias toward either the public or private sector. In this volume Annie Bartoli (this time with Sylvie Trosa) continues the examination of management in the public sector she commenced in the MAAOE V paper co-authored with Philippe Hermel. Those papers take the reader into the fascinating (ancient and unique) world of the political and administrative culture of France; which even now, in spite of having one of the largest and richest bodies of political and administrative literature, is relatively unknown to those unable to read French. Curiously, and fortuitously, Mike Donnelly’s paper offers a very similar benefit. That paper draws on Donnelly’s experience in Scottish politics and administration and gives the reader a rare insight into an area that those of us who are not “insiders” (as Mike Donnelly has been) can only glimpse through “leaks”, second hand reports and insider biographies that are almost always partial, self serving and seldom accurate.

- A concern with history. In addition to commenting on the lack of attention to theory and empirical support for the assumptions and “principles” of quality management and organization excellence models, the founders of MAAOE observed the need for more scholarly attention to be given to the history of those management models. For quality management in particular it seemed extraordinary that a management ideology of such length and breadth of application should have no definitive history. What presently passes for a history of quality management is a patchwork of statements and claims by its most public promoters (and their unquestioning acolytes) interspersed with large gaps and/or cursory reference to what appear to be significant historical periods (Japan 1945 - 1970), events (the development of ISO 9000) and persons - Homer Sarasohn and his colleagues in post war Japan. A number of authors in this volume refer to this problem and take steps toward its amelioration. Examples of those steps (albeit small) can be found in at least nine chapters.

- Explicit recognition that the world has changed in a quite profound way since quality management and the various Excellence models were developed – recall the first Excellence model (the Deming Prize) was established in 1951. This recognition and the organizational implications of the knowledge economy are most clearly drawn by Hensler (Chapter Ten) who identifies how the shift from a manufacturing to a knowledge economy has changed the way in which organizations behave (and perforce changes the context in which management models must be assessed) and identifies a rapidly growing number of organizations (most notably in information technology, e.g., Microsoft) who find that the continued application of knowledge (in contrast to what happens with physical resources) yields increasing returns – value increases rather than decreases with use. Increasing returns gives new meaning to the “first in market” strategy.

- The inclusion of a number of scholars who, in addition to their primary interest in organization theory and practice, are at the forefront of national and international standards writing organizations, and are *presently* involved in the development of management system standards. The four such contributors to MAAOE VI bring a reminder that whatever the view of management standards (such as ISO 9001 and ISO 14001) they undeniably have both an important place in the development of quality management and the Excellence models, and have had (and continue to have) a profound impact on management *practice* throughout the world.

While this book can be read with profit by management scholars and practitioners alike, as a source document, or for an individual paper, it is likely to be most appreciated when viewed as a work in progress and read in conjunction with its companion *Quality Management and Organizational Excellence: Oxymorons, Empty Boxes or Significant Contributions to Management Thought and Practice*, Sydney: SAI Global, 2007. Perhaps an even better appreciation will be gained by those who can interpret the book as another step toward MAAOE becoming ever-more specific in its focus. Yet another step along that path will be taken by MAAOE VII, which is to be held in Aarhus, Denmark in October 2008.

CHAPTER ONE

An empirical study of the validity of business excellence models and the relationships between ‘enablers’ and ‘business results’

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Massey University, New Zealand.

Introduction

The aim of the study reported in this chapter was to empirically examine the validity of three key Business Excellence (BE) models used in the Australasia/Asia Pacific region: the Australian Business Excellence Framework (ABEF), the Baldrige Criteria for Performance Excellence (BCPE, used in New Zealand), and the Singapore Quality Award Criteria (SQAC). Pursuant to this general aim, a related objective was to measure the empirical relationships between the *enabler items* (i.e., measures on leadership and performance management) and the *business results items* (i.e., those measures that cover key stakeholder outcomes), using predictive linear models. The study is original in the following respects: (a) it is based on genuine business excellence scoring data (item scores) from past Australian, New Zealand and Singaporean BE/Quality Award applicants ($N = 113$ for the SQAC, $N = 110$ for the ABEF, and $N = 118$ for the BCPE), and thus reflects the true *measurement validity* of the BE models; (b) it introduces a new generic methodology developed from the study for evaluating the measurement validity of a BE model with respect to other models; and (c) it introduces the *partial least squares regression* (PLSR) *method* as an application for quality management research, through studying the relationships between the enablers (predictor variables) and the results (response variables).

Business Excellence (BE) models and the importance of determining their validity

A BE model can be viewed as: (1) an instrument that measures the level of performance management within organization and results achieved for the key stakeholders; and (2) a representation of theory on organization-wide performance improvement (Flynn and Saladin, 2001; Kanji, 2002). While there is no unified theory on BE, it has been established that BE can be “reliably distinguished” from other organization-wide performance management interventions such as participative management and Management By Objectives (Hackman and Wageman, 1995). What sets apart total quality management (TQM) and BE models from other performance management models is that TQM/BE models are designed to address the whole management philosophy of an organization and the activities it uses to pursue it. TQM/BE models aim to guide organizations to consistently exceed the current and future expectations of all stakeholders (i.e., customers, employees, shareholders and the community) through “continuous improvement in all processes, goods and services” (Sitkin, Sutcliffe, and Schroeder, 1994). Central to this realization is the creation of a working culture (by the senior leadership) that uses data information and knowledge for every sphere of organizational activity, and evolution of a managerial system that fulfils the intrinsic and extrinsic needs of the organization’s employees (Dean and Bowen, 1994; Hackman and Wageman, 1995; Kanji and Wallace, 2000).

When an organization applies for a national BE Award, the key areas of organizational capability are assessed against the model and points are allocated to each measurement item by a panel of trained independent evaluators using a scoring guideline based upon the level of evidence of actual performance. The reader is referred to tables 1-3 for a full list of categories and measurement items pertaining to the three BE models covered in this study. The assessment process used by independent evaluators is exhaustive and typically involves scrutinizing records, meetings with senior managers and their subordinates as well as conducting actual observations on key processes (Grigg and Mann, 2008; SAI Global, 2004). Moreover, irrespective of the level of actual achievement, all applicants receive a feedback report, with an outline of the scoring for the applicant organization, describing areas identified as particular strengths or opportunities for possible improvement. Hence, apart from other indirect benefits such as general *kudos* or demonstrating commitment to BE to key stakeholders, organizations can potentially reap direct benefits through being assessed

against a BE model, provided it can be demonstrated that the model is a valid measurement instrument that underpins a theory of organizational performance. One-way to achieve this is to empirically determine the validity of national/regional level BE models. It logically follows that if a national/regional level BE model is invalid any device that is derived from it (e.g., a self-assessment instrument) must also lack validity. Considering the worldwide interest and popularity of BE (e.g., extensive use of self-assessment instruments, workshops) it remains paramount that national/regional level BE models be validated using empirical data.

A major obstruction that hinders research studies on the empirical validity of national/regional level BE models in general is the absence of available data, normally due to strict confidentiality rules concerning historical data on national BE award applicants (Garvin, 1991; Pannirselvam, Siferd, and Ruch, 1998). There are only a handful of studies (summarised later) that examined the empirical validity of any national BE model, based on data from past award applicants. Our study is aimed primarily at closing this gap. In our empirical study we cover three models: the Australian Business Excellence Framework (ABEF), the Baldrige Criteria for Performance Excellence (BCPE)¹, and the Singapore Quality Award Criteria (SQAC).

This paper is divided into two parts. Part I summarizes prior research and discusses our methodology on validity assessment, the findings and the implications of those findings. Part II compliments Part I by demonstrating how linear predictive models on business results can be developed using a leading edge multivariate statistical technique. We believe that such models, which are virtually nonexistent in BE literature, would be useful in demonstrating the extent to which a given measurement item (or a measurement category) can predict or influence business results. By citing an example we have also shown how these models may be used to pinpoint potential problems on implementation of performance improvement practices.

¹ It should be noted that BCPE—the most prestigious quality award in USA—has been assessed using data from applicants for the New Zealand Business Excellence Award.

Part I

Facets of validity

Two types of important (and interrelated) validity tests are applicable to BE models (or any other model that involves measurement of concepts/constructs), namely measurement validity and statistical conclusion validity. Measurement validity (the most fundamental validity upon which other forms of validity are built) refers to demonstration of the extent to which a measurement instrument measures the concepts or constructs that it purports to measure (Nunnally and Bernstein, 1994). Statistical conclusion validity refers to demonstration of the fact that the hypothesized relationships between the constructs, as represented by a model, do exist statistically (MacKenzie, 2003).

Construct validity—which subsumes many other forms of measurement validity—is considered to be the most important form of measurement validity (Kline, 1998; Nunnally and Bernstein, 1994). A measurement instrument is said to possess construct validity (Cronbach and Meehl, 1955) if it can be established that the measurement items that are assumed to belong within a given construct, appear to belong to that construct only (Straub, Boudreau, and Gefen, 2004). Obviously, it is not possible to test the construct validity without knowing how the respondents scored in each measurement item belonging to each construct.

Prior Research

Previous research aimed at establishing the measurement validity of any major national/regional BE model is not extensive, for want of available data—in particular the scores obtained by award applicants on the measurement items. An exception is the research by Pannirselvam *et al.*, (1998) who used item scores of applicants who applied for a major US state (Arizona) quality award to establish the measurement validity of the BCPE on the grounds that the state quality award criteria they chose were almost identical to those of the 1994 BCPE. Using the same dataset, Pannirselvam and Ferguson (2001) also established the statistical conclusion validity of the BCPE. These two studies remain valuable pieces of evidence as to the validity of early versions of the BCPE.

It is important to note that the BCPE model was substantially revised in 1997, with major changes to the measurement items, conceptual labels assigned to the seven categories and the

structural model that depicts the relationships between the seven categories (or constructs). It is encouraging to note that the basic framework of the BCPE (i.e., the constructs as well as the implied relationships between the constructs) has remained stable since 1997 in spite of the revisions and refinements to the measurement items (which typically occur every other year).

Others used less stringent tests on measurement validity. Hausner (1999) established the predictive validity of the ABEF by demonstrating that the total ABEF scores of a sample of past Australian Business Excellence Award applicants ($N = 22$) were highly correlated with the rate of improvement of key performance indicators (KPIs) over a period of 8 years. Predictive validity is a form of measurement validity that demonstrates the ability of a measurement instrument to estimate some criterion that is external to the measurement instrument itself (in the case of the aforesaid research the external criterion being the KPIs). In two independent studies conducted using survey data (obtained using questionnaires framed to reflect the performance requirements sought in the ABEF/BCPE), Rahman (2001) and Samson and Terziovski (1999) respectively and indirectly established the measurement validity of the ABEF and the BCPE. Having established measurement validity they studied the bivariate and multivariate relationships between performance management constructs and operational results. These studies showed that the so-called “soft constructs of quality/BE” such as *leadership* and *human resource focus* were more strongly correlated with operational results than the “hard constructs of quality/BE” such as *process management* and *information and analysis*, thus corroborating the findings of an earlier study by Powell (1995). Powell’s proposition that “tacit resources, and not TQM tools and techniques, drive TQM success, and that organizations that acquire them can outperform competitors with or without the accompanying TQM ideology” not only has provided fodder for the skeptics to demean TQM/BE but also prompts the BE researchers to bring more sophisticated quantitative methods to investigate empirical claims.

There have been many studies that assessed the measurement validity and statistical conclusion validity of BCPE using Structural Equation Modeling (SEM) methods, predominantly using the covariance based LISREL software, using survey data. While there are inherent weaknesses in survey data, such as common method bias (Podsakoff, MacKenzie, Lee and Podsakoff, 2003), these studies are nonetheless invaluable in understanding the theoretical framework underpinning BE models, having constructs similar

to the BCPE framework. Studies that attempted to establish the statistical conclusion validity of early versions (pre 1997) of the BCPE framework (e.g., Handfield and Ghosh, 1995; Wilson and Collier, 2000; Winn and Cameron, 1998) reported mixed results ending up with models having several statistically nonsignificant paths, suggesting little or partial evidence of the existence of the causal hypotheses implied in the BCPE framework. However, by switching from confirmatory mode to exploratory mode (using the “theory trimming” technique in LISREL), Winn and Cameron were able to devise an alternative statistically significant model. The alternative model implied that leadership does not have a direct effect on organizational outcomes but only an indirect effect through the systems and processes conceptualized in the other Baldrige constructs. We note that several relationships implied in Winn and Cameron’s derived structural model are implied in the post-1997 BCPE framework and that Winn and Cameron’s derived structural model has been cross-validated in some subsequent studies (e.g., Badri *et al.*, 2006; Meyer and Collier, 2001). In our opinion, however, Winn and Cameron’s derived model does not fully reflect the post 1997 BCPE, both in terms of operationalisation of the constructs as well as the implied causal relationships between the constructs.

Using survey data collected from a multinational sample, Flynn and Saladin (2001) studied the goodness-of-fit of three path models—respectively representing the 1988, 1992 and 1997 versions of the BCPE—in order to make a normative assessment of how the BCPE has evolved at a theoretical level. They studied the path models using path analysis, which is a more basic form of SEM. They observed that the 1997 model was a better fit to data (in terms of that model’s ability to imply the observed correlations between the measurement items) compared with the 1988 and 1992 models (1992 model was a better fit to data than the 1988 model), which prompted them to conclude that “appropriate modifications have been made to the criteria upon its inception in 1988.” Using survey data from a Korean manufacturing sample Lee, Rho, and Lee (2003) established the statistical conclusion validity of the BCPE using SEM, adopting a structural model similar to that used by Flynn and Saladin for the 1997 model.

Methodology

At the outset of this study, we believed that it is more informative and enriching to assess the empirical validity of a multitude of conceptually analogous BE models—that is BE models

having constructs with near one-to-one correspondence—within a single theoretical framework. We collected scores (at item level) of past award applicants of the New Zealand Business Excellence Award (like many other countries, the New Zealand award is based on the BCPE), the Australian Business Excellence Award, and the Singapore Quality Award through the award custodians: New Zealand Business Excellence Foundation (Auckland, New Zealand), SAI Global (Sydney, Australia) and Standards, Productivity and Innovation Board of Singapore (SPRING) respectively.

A major motivation for us to study three different models simultaneously was that although there was near one-to-one correspondence between the categories as theoretical concepts or constructs, there was sufficient disparity between the models in the manner in which the categories were measured, both in terms of the measurement items used, and how each item was measured (operationalised). For example, SPRING Singapore adopts a highly structured approach to assess each measurement item using a questionnaire design (the responses furnished by the applicants are nonetheless verified by trained independent examiners through site visits) while SAI Global adopts (for the ABEF) a more open ended design, suggesting what the respondents may consider furnishing as documentary evidence for accomplishment under each measurement item. We believe that our findings would be useful to both practitioners and academia (not to mention the potential benefit to the award custodians) as our research conclusions are derived from *triangulation*—converging evidence based on different datasets, different measurement instruments, different settings and indeed different statistical techniques.

Since few organizations apply for awards in a calendar year, either by design (as in Singapore) or otherwise (as in Australasia), we adopted the following strategies to increase the number of valid observations. In the case of Australia, we pooled data (final consensus scores) across seven years (1999-2006), which resulted in 110 observations. We believe that this pooling has minimal adverse effect because (1) the ABEF remained unchanged throughout the study period and (2) that only a negligible number of organizations made repeat applications. For the New Zealand case, we pooled individual evaluator scores (on average about 5 evaluators per applicant) across four years (2003-2006), which resulted in 118 observations. In this case pooling was necessary because there were only 22 applicants, and we could not use previous years' applicants as the BCPE measurement items used in those years differed. In the case of Singapore, we used final consensus scores of all the 113

Singaporean organizations that were evaluated by SPRING during 2004-2005, for performance excellence. Note that in a strict sense, these organizations are not the applicants of the Singapore Quality Award (SQA); only organizations that secure an overall score of 700 points (out of a possible 1000) in performance excellence assessments are invited to apply for the SQA (for details of the SQAC see SPRING, 2007). Gaining qualifications to apply for the SQA is deemed as a journey in Singapore, with organizations having to gradually progress toward the 700 mark from where currently they are.

Of our three samples, the Australian and New Zealand samples showed similarity in terms of the sector to which the organizations belonged (>80% service sector, of which the majority were state owned), the size² of the organization (approximately 1/3 medium and 2/3 large). The Singaporean sample had a relatively stronger manufacturing sector representation (42%); the size of the organizations in the Singaporean sample was similar to that of the Australasian samples although the private sector was better represented in the Singaporean sample.

We used the above datasets to run three separate partial least squares (PLS) based structural equation models using a common structural model (see Figures 1 - 3). The common structural model used in our PLS analysis was based on the structural models used by Jayamaha, Grigg and Mann (2008), which is consistent with the models used by Flynn and Saladin (2001) as well as by Lee, Rho and Lee (2003) to study the validity of the BCPE. Note that while the structural models of our three PLS path models were identical, overall the three models were different from one another in that each had different measurement models (i.e., the diagram showing the relationships between categories and measurement items). PLS technique is particularly suitable for running SEM models with small samples/and or in situations where the theoretical concepts are at early stages of development (Chin, 1998; Fornell and Cha, 1994).

² The size of the organization is based on the fulltime labor employed and is in accordance with the classification used by the Australian Bureau of Statistics: 'Small' if the organization has less than 20 employees, 'Medium' if the organization has between 21 and 200 employees, and 'Large' if the organization has more than 200 employees.

The objective function of the partial least squares (PLS) algorithm is the minimization of the residual variances specified in the measurement and structural models (using a series of *least squares* regression equations). Although “all the residual variances are minimized jointly”, the PLS optimization algorithm remains “partial”, in a least squares sense, in that there is no global criterion being set up for optimization as in the LISREL approach (Wold, 1980, p.67). The computation of PLS model parameters (in both the measurement models and the structural model) is accomplished by an iterative algorithm designed to estimate the score of each construct (constructs are often known as 'latent variables' in SEM) using the assumption that each construct can be expressed as a weighted linear combination of its measurement items (also known as 'indicators' or 'manifest variables' in SEM). Thus estimation of item weights is one of the most unique features of the PLS approach. The application of the PLS technique in studying the validity of BE models is available elsewhere (e.g., Cassel, Hackl, and Westlund, 2000; Kanji and Wallace, 2000; Kristensen, and Eskildsen, 2006; Rosa, Saraiva, and Diz, 2003). Our PLS runs were conducted using PLS Graph version 3.0 software package (Chin, 2001).

In PLS, the construct validity (and hence the measurement validity) is assessed through the convergent and discriminant validities (both forms of validities are vital for construct validity). Convergent validity is said to exist when each measurement item correlates strongly with its designated construct (these correlations are referred to as loadings), while discriminant validity is said to exist when measurement items correlate less strongly with the constructs to which they are not designated (these correlations are referred to as cross-loadings, Gefen and Straub, 2005). The correlations pertaining to the three models are shown in Tables 1 - 3. The structural models of our three frameworks are shown in Figures 1 - 3 (note that the significance statistics reported in the figures are based on the non-parametric bootstrap resampling procedure, as no parametric assumptions are made in PLS).

Considering the fact that one of the main objectives of our study was to assess the measurement validity of the BE models, we were mindful of the potential pitfalls on over-reliance on a SEM approach (in our case PLS). In all hybrid SEM models, the measurement model is linked to the structural model and *vice versa*, and if the structural model does not represent the reality (as we posit it would), any inference made in relation to the measurement model would be questionable. We observe that in the case of the BCPE—one of the models that is scrutinized frequently—researchers still tend to have their own

interpretation on how the BCPE framework (see NIST, 2006, p.5) could be represented as a recursive structural model. In order to circumvent this problem, as a secondary measure, we computed the loadings and cross-loadings associated with the measurement items using the Principal Components Analysis (PCA) method. Table 6 in Appendix 1 depicts the loadings and cross-loadings associated with the measurement items of the SQAC. In the PCA procedure we made the assumption that a construct can be approximated by the first principal component derived from its indicators (we observed that the Eigenvalues of second and higher principal components were invariably very low). We conducted the PCA using STATISTICA 6.0 software package.

Results and discussion

Measurement validity

Careful examination of the patterns of correlations in Tables 1 - 3 reveals that in the case of all 3 BE models, the measurement items show strong loadings (the loadings are highlighted for ease of reference), thereby showing convergent validity; the possible exception to this is item 5.1 of the SQAC (Table 3). While the measurement items of the three BE models show convergent validity, it is clearly evident that it is difficult to find concrete evidence of discriminant validity, since the measurement items also show strong to moderately strong cross-loadings. If a measurement item returns cross-loadings that are as strong as its loading, then it becomes difficult to justify that the measurement item under observation is a proper operationalization of its assigned construct as the item might well belong to other constructs (Barclay, Thompson, and Higgins, 1995). However, in PLS, there is no maximum rule-of-thumb cross-loading cut-off value for discriminant validity (some users such as Barkley *et. al.*, suggest 0.50 as an ideal maximum value to keep in line with the cut off value often used in exploratory factor analysis). However, it is deemed mandatory that a measurement item should return a strong loading (ideally > 0.71) that is greater than any of its cross-loadings (Chin, 1998; Fornell and Larcker, 1981; Gefen and Straub, 2005). It is clear from the loading and cross-loading data reported (Tables 1 - 3) that the three BE models fulfill this minimum requirement for validity.

Table 1: Loadings and Cross-Loadings for the ABEF Based on Item Scores Secured by the Applicants of the Australian Business Excellence Award

Latent variable/ Category Item	1	2	3	4	5	6	7	Average Cross- loading	ΔV
1.1	0.93	0.84	0.73	0.80	0.74	0.74	0.76	0.77	0.16
1.2	0.92	0.75	0.76	0.82	0.68	0.73	0.73	0.75	0.18
1.3	0.93	0.75	0.75	0.83	0.68	0.73	0.73	0.75	0.19
1.4	0.67	0.59	0.54	0.51	0.45	0.49	0.53	0.52	0.15
2.1	0.78	0.90	0.73	0.68	0.73	0.75	0.72	0.73	0.17
2.2	0.81	0.92	0.73	0.76	0.76	0.74	0.70	0.75	0.17
2.3	0.63	0.80	0.67	0.60	0.65	0.65	0.57	0.63	0.17
3.1	0.73	0.76	0.93	0.65	0.65	0.80	0.73	0.72	0.21
3.2	0.75	0.71	0.90	0.64	0.62	0.73	0.74	0.70	0.20
3.3	0.66	0.68	0.83	0.66	0.68	0.73	0.65	0.68	0.15
4.1	0.82	0.74	0.73	0.92	0.64	0.68	0.73	0.76	0.20
4.2	0.78	0.71	0.69	0.91	0.61	0.66	0.64	0.68	0.23
4.3	0.64	0.61	0.49	0.81	0.53	0.53	0.55	0.56	0.25
5.1	0.66	0.79	0.63	0.63	0.91	0.71	0.63	0.68	0.24
5.2	0.68	0.73	0.67	0.61	0.95	0.72	0.58	0.67	0.29
5.3	0.71	0.74	0.72	0.61	0.91	0.74	0.60	0.69	0.22
6.1	0.65	0.67	0.72	0.64	0.69	0.82	0.71	0.68	0.14
6.2	0.70	0.75	0.69	0.66	0.68	0.85	0.65	0.69	0.16
6.3	0.64	0.67	0.73	0.58	0.64	0.86	0.65	0.65	0.21
6.4	0.70	0.69	0.78	0.58	0.67	0.89	0.74	0.70	0.20
7.1	0.77	0.72	0.75	0.71	0.64	0.76	0.94	0.73	0.22
7.2	0.72	0.70	0.74	0.66	0.58	0.74	0.93	0.69	0.24
Average ΔV									0.20
<p>Note: (1) ΔV is an arbitrary variable, which shows by how much a loading exceeds the average cross-loading; (2) The names of the categories and items are as follows: Category 1: Leadership; Category 2: Strategy and planning; Category 3: Knowledge and Information; Category 4: People; Category 5: Customer and market focus; Category 6: Innovation, quality and improvement; Category 7: Success and sustainability; Item 1.1: Strategic direction; Item 1.2: Organizational culture; Item 1.3: Leadership throughout the organization; Item 1.4: Environmental and community contribution; Item 2.1: Understanding the business environment; Item 2.2: The planning process; Item 2.3: Development and application of resources; Item 3.1: Collection and interpretation of data and information; Item 3.2: Integration and use of knowledge in decision-making; Item 3.3: Creation and management of knowledge; Item 4.1: Involvement and commitment; Item 4.2: Effectiveness and development; Item 4.3: Health, safety and well-being; Item 5.1: Knowledge of customers and markets; Item 5.2: Customer relationship management; Item 5.3: Customer perception of value; Item 6.1: Innovation process; Item 6.2: Supplier and partner processes; Item 6.3: Management and improvement of processes; Item 6.4: Quality of products and services; Item 7.1: Indicators of success; Item 7.2: Indicators of sustainability</p>									

Table 2: Loadings and Cross-Loadings for the BCPE Based on Item Scores Secured by the Applicants of the New Zealand Business Excellence Award

Latent variable/ Category Item	1	2	3	4	5	6	7	Average Cross- loading	ΔV
1.1	0.93	0.78	0.54	0.79	0.73	0.70	0.66	0.70	0.23
1.2	0.91	0.67	0.63	0.68	0.76	0.53	0.67	0.66	0.26
2.1	0.76	0.94	0.48	0.79	0.72	0.59	0.69	0.67	0.27
2.2	0.74	0.95	0.57	0.83	0.78	0.79	0.79	0.75	0.20
3.1	0.67	0.58	0.95	0.52	0.58	0.48	0.62	0.58	0.38
3.2	0.53	0.48	0.95	0.47	0.50	0.54	0.66	0.53	0.42
4.1	0.76	0.81	0.52	0.93	0.82	0.71	0.75	0.73	0.20
4.2	0.67	0.71	0.42	0.89	0.66	0.61	0.53	0.60	0.29
5.1	0.79	0.73	0.50	0.79	0.93	0.55	0.54	0.65	0.28
5.2	0.67	0.63	0.51	0.71	0.89	0.41	0.50	0.57	0.32
5.3	0.74	0.76	0.56	0.77	0.92	0.78	0.74	0.72	0.20
6.1	0.54	0.64	0.33	0.64	0.53	0.91	0.74	0.57	0.34
6.2	0.69	0.70	0.64	0.70	0.69	0.93	0.78	0.70	0.23
7.1	0.53	0.60	0.70	0.51	0.44	0.60	0.74	0.56	0.17
7.2	0.66	0.76	0.58	0.65	0.56	0.79	0.90	0.67	0.24
7.3	0.52	0.59	0.55	0.60	0.51	0.69	0.86	0.57	0.29
7.4	0.66	0.69	0.51	0.60	0.68	0.72	0.87	0.64	0.23
7.5	0.61	0.74	0.55	0.69	0.61	0.79	0.91	0.66	0.24
7.6	0.67	0.59	0.57	0.57	0.56	0.60	0.78	0.59	0.19
Average ΔV									0.26
<p>Note: (1) ΔV is an arbitrary variable, which shows by how much a loading exceeds the average cross-loading; (2) The names of the categories and items are as follows: Category 1: Leadership; Category 2: Strategic planning; Category 3: Customer and market focus; Category 4: Measurement, analysis and knowledge management; Category 5: Human resource focus; Category 6: Process management; Category 7: Business results; Item 1.1: Senior leadership; Item 1.2: Governance and social responsibilities; Item 2.1: Strategy development; Item 2.2: Strategy deployment; Item 3.1: Customer and market knowledge; Item 3.2: Customer relationships and satisfaction; Item 4.1: Measurement, analysis, and review of organizational performance; Item 4.2: Information and knowledge management; Item 5.1: Work systems; Item 5.2: Employee learning and motivation; Item 5.3: Employee well-being and satisfaction; Item 6.1: Value creation processes; Item 6.2: Support processes and Operational planning; Item 7.1: Product and service outcomes; Item 7.2: Customer focused results; Item 7.3: Financial and market results; Item 7.4: Human resource results; Item 7.5: Organizational effectiveness results; Item 7.6: Leadership and social responsibility results</p>									

Table 3: Loadings and Cross-Loadings Based on Item Scores Secured by the Applicants Assessed for Prequalification for the Singapore Quality Award

Latent variable/ Category Item	1	2	3	4	5	6	7	Average Cross- loading	ΔV
Item 1.1	0.90	0.73	0.64	0.65	0.63	0.60	0.61	0.64	0.26
Item 1.2	0.89	0.65	0.55	0.70	0.59	0.59	0.59	0.61	0.28
Item 1.3	0.81	0.62	0.48	0.58	0.60	0.50	0.64	0.57	0.24
Item 2.1	0.76	1.00	0.73	0.69	0.71	0.67	0.64	0.70	0.30
Item 3.1	0.61	0.77	0.92	0.68	0.63	0.73	0.60	0.67	0.25
Item 3.2	0.54	0.52	0.87	0.51	0.56	0.55	0.57	0.54	0.32
Item 4.1	0.63	0.60	0.57	0.89	0.53	0.58	0.65	0.59	0.30
Item 4.2	0.63	0.54	0.55	0.82	0.46	0.48	0.60	0.54	0.27
Item 4.3	0.63	0.58	0.62	0.87	0.52	0.66	0.62	0.60	0.27
Item 4.4	0.57	0.57	0.53	0.82	0.42	0.60	0.57	0.54	0.28
Item 4.5	0.68	0.65	0.61	0.84	0.58	0.64	0.68	0.64	0.20
Item 5.1	0.51	0.50	0.38	0.51	0.61	0.51	0.32	0.46	0.15
Item 5.2	0.55	0.60	0.59	0.43	0.80	0.53	0.65	0.56	0.24
Item 5.3	0.52	0.51	0.52	0.43	0.84	0.44	0.51	0.49	0.35
Item 6.1	0.61	0.65	0.68	0.64	0.61	0.94	0.56	0.62	0.31
Item 6.2	0.64	0.59	0.64	0.66	0.61	0.92	0.59	0.62	0.30
Item 6.3	0.57	0.61	0.71	0.64	0.59	0.92	0.52	0.60	0.32
Item 7.1	0.57	0.53	0.57	0.59	0.50	0.55	0.77	0.55	0.22
Item 7.2	0.59	0.52	0.53	0.57	0.62	0.46	0.88	0.55	0.33
Item 7.3	0.64	0.59	0.60	0.78	0.53	0.57	0.83	0.62	0.21
Item 7.4	0.56	0.51	0.51	0.51	0.65	0.44	0.90	0.53	0.37
Average ΔV									0.28
<p>Note: (1) ΔV is an arbitrary variable, which shows by how much a loading exceeds the average cross-loading; (2) The names of the categories and items are as follows: Category 1: Leadership; Category 2: Planning; Category 3: Information; Category 4: People; Category 5: Processes; Category 6: Customers; Category 7: Results; Item 1.1: Senior executive leadership; Item 1.2: Organizational culture; Item 1.3: Responsibility to the community and environment; Item 2.1: Strategy Development and deployment; Item 3.1: Management of information; Item 3.2: Comparison and benchmarking; Item 4.1: Human resource planning; Item 4.2: Employee involvement and commitment; Item 4.3: Employee education, training and development; Item 4.4: Employee health and satisfaction; Item 4.5: Employee performance and recognition; Item 5.1: Innovation process; Item 5.2: Process management and improvement; Item 5.3: Supplier and partnering process; Item 6.1: Customer requirements; Item 6.2: Customer relationship 6.3: Customer satisfaction; Item 7.1: Customer results; Item 7.2: Financial and market results; Item 7.3: People results; Item 7.4: Operational results</p>									

Ranking of the three BE models on the basis of the level of measurement validity

In order to further analyze how serious the cross-loading issue is, the following were calculated for the three models from the loading and cross-loading data.

- (i) Percentage of items that return ΔV values at least as great as 0.20 (ΔV is an arbitrary symbol used by us to resemble ‘difference in value’; ΔV for each measurement item was defined as the *loading* minus the *average cross-loading*); the score based on this heuristic was called **Score 1**.
- (ii) Percentage of cross-loadings that are equal to, or less than, 0.60; the score based on this heuristic was called **Score 2**.
- (iii) Percentage of items that return at least 5 cross-loadings (note that each item has 6 cross-loadings) that are equal or less than 0.60; the score based on this heuristic was called **Score 3**.³

The scores reported by the three models based on the above heuristics are shown in Table 4.

Table 4: Performance of the Three Models Based on the Heuristics Used to Test the Relative Level of Validity

Name of the BE Model	Marks returned (maximum possible is 100%)		
	Score 1	Score 2	Score 3
SQAC	95 %	56 %	36%
BCPE	89 %	40 %	21%
ABEF	55 %	13 %	5%

Note that the percentage scores tabulated under ‘score 1’ in Table 4 refer to the percentage of measurement items that passed a very lenient heuristic on validity. For example, in the case of the SQA criteria, the ‘score 1’ was 95% because 20 out of the 21 measurement items $((20/21) \times 100 = 95)$ met the requirement in the first heuristic. Also note that the second

³ Note that the choice of 0.60 as the maximum permissible cross-loading for the heuristics was purely arbitrary. If a value of 0.50 is used (as commonly used in exploratory factor analysis) the marks returned for ‘Score 3’ for all three models would be 0%, which explains why researchers are lenient with measurement scales developed for new concepts (more about this later).

heuristic (Score 2) is more rigorous than the first heuristic (Score 1), while the third heuristic (Score 3) is yet more rigorous than the second. The bottom line is that if stringent validity standards (or rules of thumb) on discriminant validity are applied, all three BE models perform poorly.

It is important to note that the low discriminant validity is a major concern (see Sousa and Voss, 2002 on potential reasons for low discriminant validity of BE models) and it is probably the main reason why strong correlations exist between the seven constructs, to the extent that independent variables in the structural models are nearly multicollinear, in all three BE models. We observe that correlations between the constructs are particularly strong in the case of the ABEF (Table 5); the correlation matrix of the seven constructs of the BCPE and the SQAC are shown in Table 7 and Table 8 in Appendix 2.

Table 5: Correlations of the ABEF Constructs/Latent Variables

Number/Name of the Construct	1	2	3	4	5	6	7
1 (Leadership)							
2 (Strategy and Planning)	0.85						
3 (Knowledge and Information)	0.81	0.81					
4 (People)	0.86	0.78	0.73				
5 (Customer and Market Focus)	0.75	0.82	0.73	0.67			
6 (Innovation, Quality and Improvement)	0.79	0.82	0.85	0.72	0.79		
7 (Success and Sustainability)	0.80	0.76	0.80	0.73	0.65	0.81	
Note: $N = 110$; for all the correlation coefficients $p < 0.001$							

Concerns on near multicollinearity

The near multicollinearity of the constructs causes potentially serious interpretation issues. Foremost, it casts serious doubt as to whether as many as six separate enabler categories (i.e., all seven constructs other than the construct that represents business results/business success) are necessary to conceptualize the leadership and performance management interventions planned and deployed in an organization. The results suggest that it may well be possible to represent all the key management interventions of an organization through a single construct; indeed some researchers have used a single construct previously for this purpose (e.g.

Prajogo and Brown, 2004). At a theoretical level though, all the enabler categories are necessary to explain the phenomenon of BE as these constructs are tied to causal propositions on BE. Another issue with multicollinearity is that it undermines the results presented in the structural models (Figures 1 - 3), which will be discussed in the next section (statistical conclusion validity).

Under the above circumstances we believe that it is desirable to refine the measurement items of the three BE models (ABEF in particular). If one were to treat BE constructs as latent variables possessing strong psychometric properties, then one may be inclined to consider refining any measurement item that returns moderately high cross loadings - say > 0.50 - a rule-of-thumb often cited in exploratory factor analysis (e.g., Hair, Anderson, Tatham, and Black, 1998). If a maximum cross-loading cut-off value of 0.50 were to be used to our set of observations, it appears that all three BE models call for a major overhaul. However, it is cited in literature that such a rule-of-thumb is too rigid for measurement scales (such as BE) that are at an early stage of development (Chin, 1998, pp. 325-326). Thus, considering the loadings and the cross-loading patterns of all three BE models jointly, we recommend that all items that return ΔV values (ΔV is an arbitrary variable, which shows by how much the loading exceeds the average cross-loading for a given measurement item) less than 0.20 and/or a loading less than 0.71 be especially considered for refinement. The ΔV values for each item in each BE model are depicted in Tables 1 - 3. Our recommended criterion calls for refinement of several items in the ABEF. This is obviously reflected in *Score 1* shown in Table 4.

While we believe that our heuristics would be useful in identifying the measurement items that need more attention in future model revisions, we advise the reader to have a flexible approach: our results should always be interpreted in the context of the overall model and its objectives. For example, although $\Delta V < 0.20$ criterion (and/or loading > 0.71) as applied to BCPE (based on New Zealand data) suggest that two measurement items belonging to the Business Results Category in the BCPE need attention, on account of lower ΔV values (Table 2), we can demonstrate through PLS that this discrepancy probably occurred due to attempting to represent all the key stakeholder results through a single construct. We note that in the EFQM Excellence Model (EFQM, 2006), the European counterpart of the BCPE, as many as four constructs are used to represent stakeholder results. The impact of the multidimensionality of the Business

Results Category of the BCPE became evident to us when we observed that the ΔV values of all BE items rose noticeably (> 0.20) when a fresh set of PLS output was obtained when item 7.1 was deleted. It is important to note that item 7.1 was deleted merely to observe how the *Business Results* construct behaves when it is modified; however, deleting a measurement item can affect the content validity of a measurement instrument (Nunnally and Bernstein, 1994). Thus, considering the parsimonious nature of the BCPE, there is probably no need to pay special attention to the aforementioned measurement items in the BCPE by the New Zealand Business Excellence Foundation.

We observed that the PCA analysis yielded loading and cross-loading patterns that were similar (in value) to those presented in Tables 1 - 3. Table 6 (Appendix-1) depicts the PCA results for the SQAC (PCA results for the ABEF and the BCPE are not shown due to space limitations). This suggests that our conclusions on measurement validity on the three BE models are likely to be correct, irrespective of whether or not causal relationships hypothesized exist in the real world. This reinforces our findings on the measurement validity. Finally, it is important to note that measurement reliability, which is a necessary requirement for validity, was assessed both in terms of coefficient α (Cronbach, 1951) as well as the composite reliability coefficient ρ_c (Werts, Linn, and Jöreskog, 1974) and that all coefficients (i.e., coefficients for each construct in each BE model) easily exceeded the lower bound acceptable value of 0.70 prescribed by Nunnally (1978). These values are not reported due to space limitations.

Statistical conclusion validity

Examination of the structural paths in all three models (Figures 1 - 3) reveals that the majority of these are substantial/significant. These findings compare favorably with prior research (e.g., Flynn and Saladin, 2001; Jayamaha *et al.* 2008; Lee *et al.*, 2003). Moreover, examination of the R^2 values suggest that dependent latent variables (constructs) are well predicted by the independent latent variables, which seems to suggest that all three BE models are useful in a causal-predictive sense.

However, it is important to note that near multicollinearity of the independent variables in each model is cause for concern as it could undermine the results presented in Figures 1 - 3. For example, the statistically nonsignificant path in Figure 1 gives the impression that in the

case of the ABEF, *leadership* does not directly relate to *customer focus* (despite the high correlation between the two constructs as shown in Table 5). This is an observation that contradicts a key proposition in the ABEF. It can be shown (using standard equations used in path analysis) that this is caused by high correlations among three variables, which predict customer focus (i.e., leadership, strategic planning, and information). We believe that with more refined measurement items it is possible to eliminate such confounding situations.

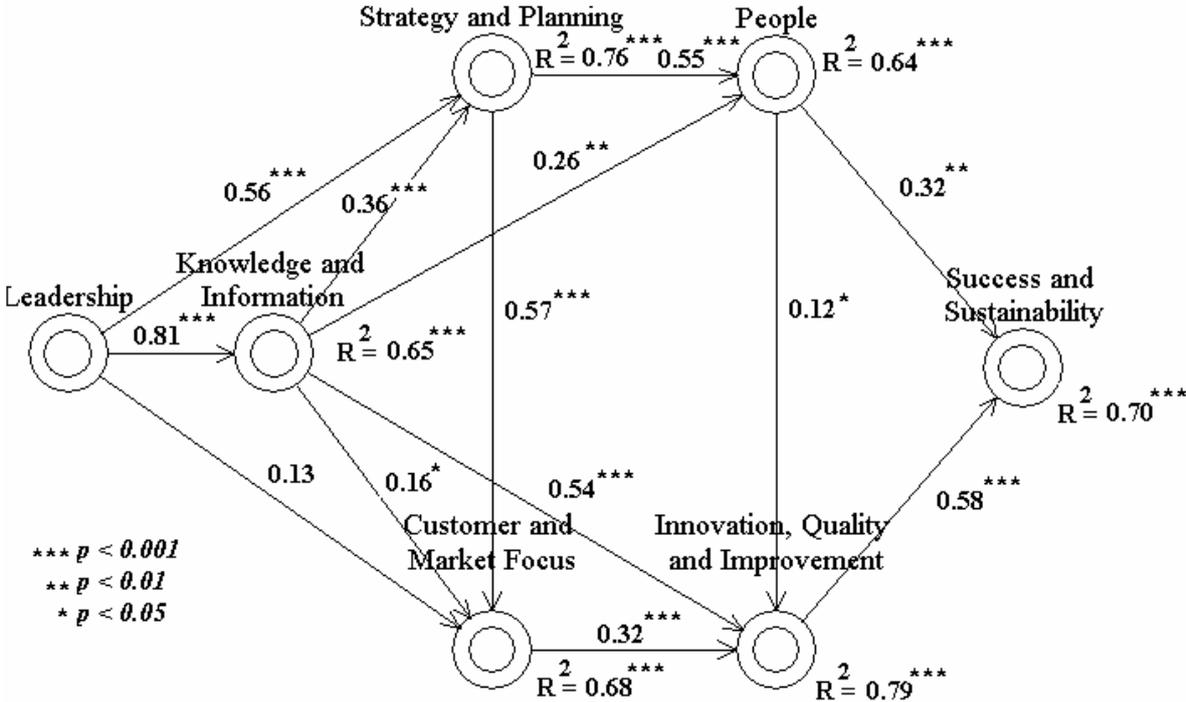


Figure 1: The PLS structural model for the ABEF

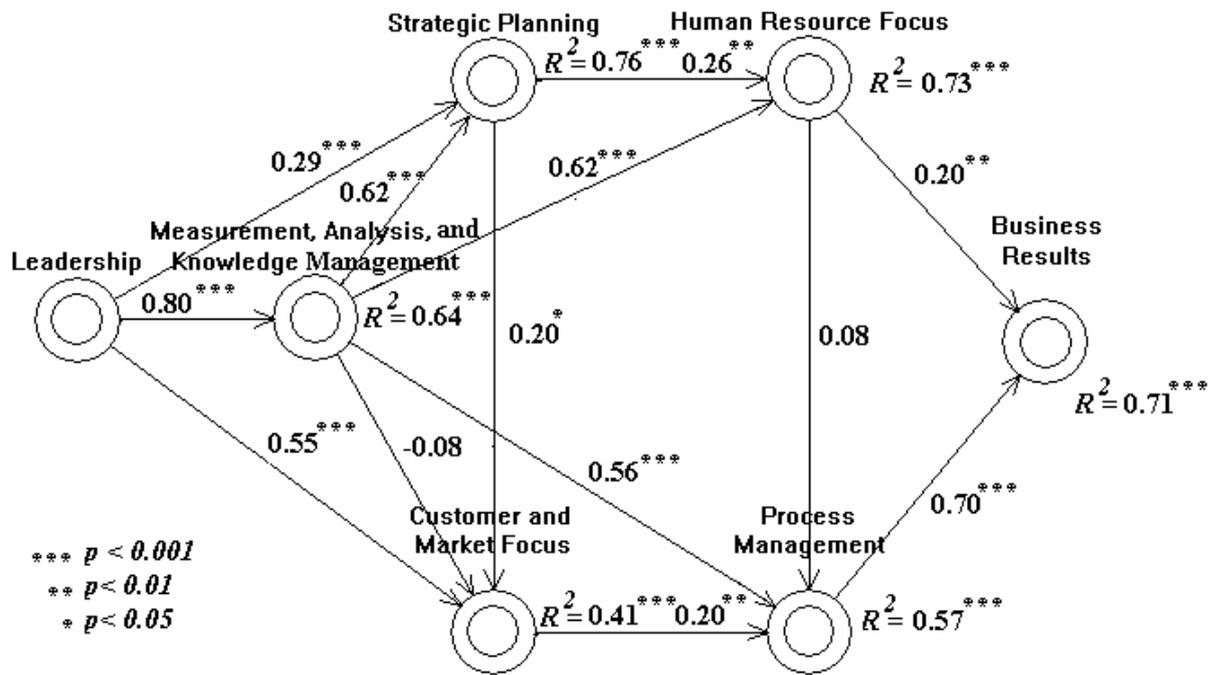


Figure 2: The PLS structural model for the BCPE (New Zealand data)

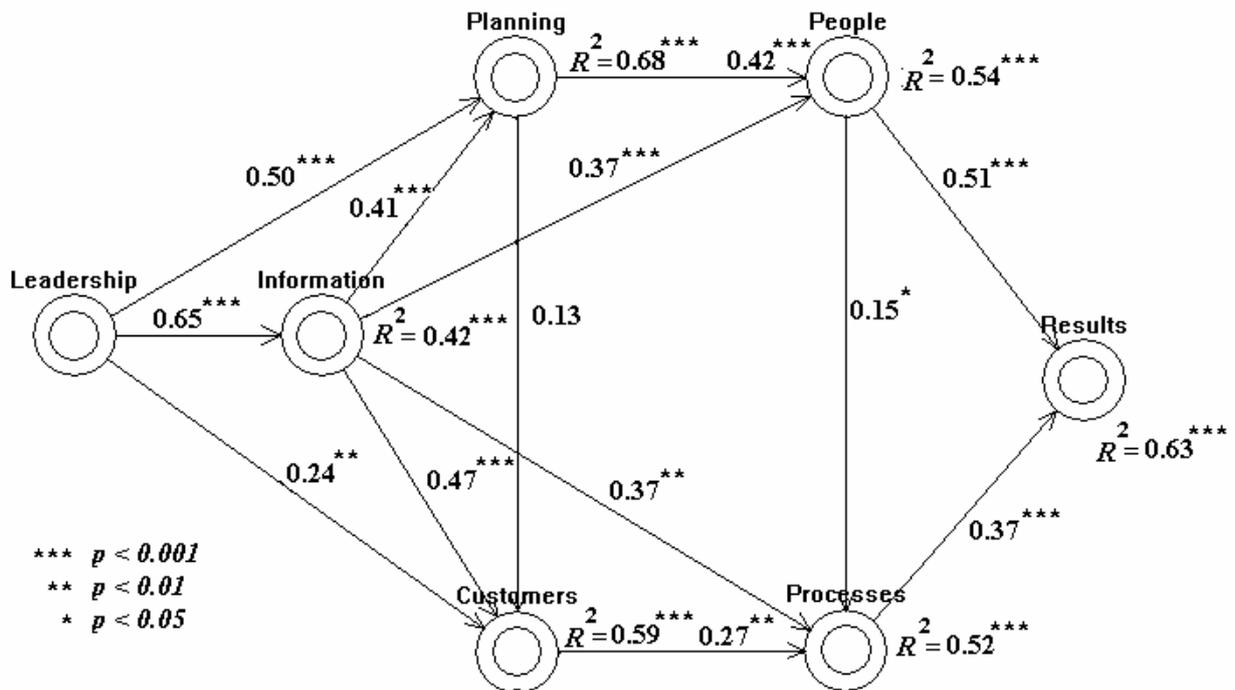


Figure 3: The PLS Structural Model for the SQA Criteria

Part II

In BE, the causal antecedents of business results are *process* and *people* (Figure 3). Thus, in theory, it is possible to predict business results from people and processes (note that the two concepts people and processes can have alternative labels, depending on which BE framework one is referring to, as evidenced in Figure 1 and Figure 2). However, there are three other causal antecedents of processes and people, which in turn are dependent on leadership. Consequently all six enabler categories—as they are justifiably labeled—are determinants of the business results category. The same can be said about the items belonging to the enabler categories (i.e., enabler items). Since we have established the validity of the measurement items⁴ used in the three BE models, it makes sense to study the relationships between enablers and results (at item and category levels).

In this section we describe very briefly how we developed our linear regression models to study the relationships between enablers and results and document some of the results we derived and what they imply. Another major objective of this section is to acquaint researchers in quality/BE disciplines about the state-of-the-art multivariate statistical tools that are at their disposal to solve problems involving multicollinearity in regression analysis; we showed earlier that the enabler categories of all three models (ABEF in particular) that we studied, were multicollinear. Statisticians are all too familiar with the problem of multicollinearity of independent variables in traditional (ordinary) least squares regression analysis: unstable regression coefficients (i.e., coefficients that are very much dependent on the dataset they generated them), regression coefficients with unrealistic values (e.g., negative values, when they ought to be positive), inflation of the variances of the regression coefficients (hence often being statistically insignificant, due to small *t* values),⁵ and over fitting—meaning “tailoring the model too much to the current data, to the detriment of future predictions” (Myers, 1990; SAS 2007).

⁴ This is a very important principle in all scientific disciplines. In science any measurement parameter (e.g., time) is based on a theory (e.g., rotation of the earth). Once the scientific community accept the theory to which the parameter is related, they use the parameter routinely to convey meaning. Similarly, once the validity of measures in BE is established, researchers and managers can use these routinely and reliably to convey meaning between the communicators, for performance improvement action.

⁵ The reader can verify some of these peculiarities themselves, using the correlation matrices reported by us (e.g., Table 5).

While there are several techniques available to deal with multicollinearity, the partial least squares regression (PLSR) technique is a modern technique that is regarded as the best technique for regression problems involving multicollinearity (Cheng and Wu, 2006; Wold, Ruhe, Wold and Dunn, 1984). Like principal components regression (PCR)—the popular method that was used to handle multicollinearity before PLSR came on to its own—PLSR is a component based procedure, where the objective of the user is to reduce the dimensionality of the variable space prior to regression. This is achieved by selecting only those orthogonal (i.e., uncorrelated) components that are necessary to meet a given criterion (or criteria). This is explained further through an example as follows (for a mathematical treatment and a tutorial on the subject, see Geladi and Kowalski, 1986).

Consider a linear regression problem of finding the regression parameters of the regression model that involves one dependent variable and k independent variables using n observations. If all k orthogonal components (components being derived from the independent variables using PLSR, and each component being a weighted linear sum of the independent variables) are regressed against the dependent variable and the components are subsequently substituted by the independent variables (using the PLSR weights), then one would end up with a set of regression parameters that would be exactly identical to those that could have been derived using ordinary least squares regression (hence such problems as unrealistic parameter values, over-fit or no improvement in fit and so on, if the independent variables are highly correlated). If on the other hand, only one component is regressed against the dependent variable, the results might be unsatisfactory on the grounds that the model is not a good fit to data (i.e. an under-fit). In PLSR, the decision as to how many components ought to be retained for the final analysis is typically based on cross-validation (a more simple method such as observation of incremental R^2 values of the dependent variable against components used is also used as a crude procedure).

STATISTICA 6.0 (the software package used in this study) uses a basic cross-validation procedure known as the *holdout sample method*. In this procedure the user randomly picks part of the cases—say about 80% as we did—for parameter estimation and the balance cases for calculation of the prediction error—more specifically the *Prediction Error Sum of Squares* (PRESS). The optimum model is the model that is derived from that many components that yield a minimum PRESS value. This is accomplished by visual observation of results through a PRESS versus *number of components used plot* (e.g. Figure 4).

Figure 4 depicts the PRESS vs. number of components plot for one of our predictive models. In this model we treated the *Success and Sustainability* category as the dependent variable and the other six categories as the independent variables (obviously the measures relate to the ABEF). In this instance, out of the 110 cases that were available to us, we randomly picked 88 cases (80%)—referred to as the training sample or the analysis sample in statistics—to derive the predictive model; we used the balance 22 cases (20%)—known as the cross-validation sample or the verification sample in statistics—to compute the PRESS. It is clear from Figure 4 that the predictive model formulated from just one component (the first PLSR component) is superior to other five predictive models formulated from multiple components, with addition of each component tending to increase PRESS.^{6,7}

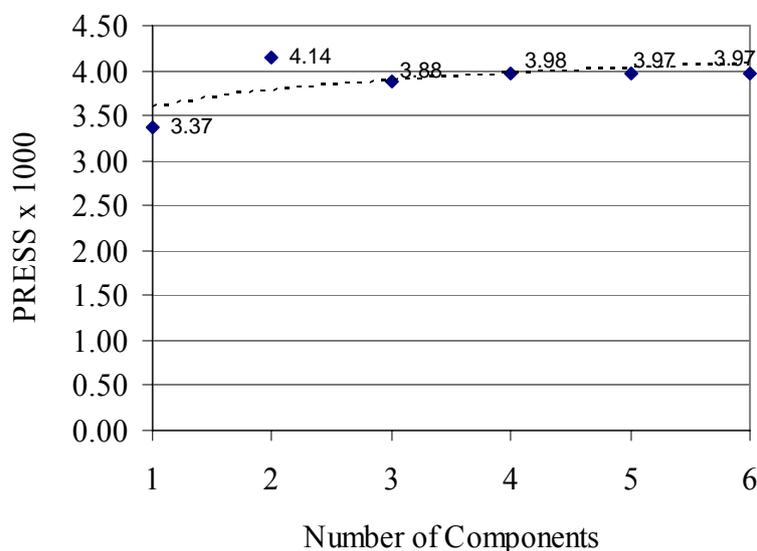


Figure 4: PRESS vs. number of components used (PLSR method) for a predictive model involving the ‘Success and Sustainability’ category of the ABEF as the dependent variable and the enabler categories as the independent variables

Figure 5 depicts the standardized regression coefficients (β weights) for the PLSR based predictive models involving the results category and the enabler categories for the three BE models. Note that the category names are labeled as per the BCPE and that these labels need

⁶ The PRESS value of 3370 basically means that the sum of squares of the 22 residual values was 3370. This means that the mean residual value of the squares of the residuals is 153.18. The square root of this, which is 12.38, gives the magnitude of the average prediction error. Note that 150 points are allocated to the Success and Sustainability category in ABEF and hence this means that the average perdition error of the model is 12.38 (8%). This suggests that the model is a useful tool in understanding and predicting the results category from the enabler categories.

⁷ Note that due to limitations of space, we have not shown PRESS vs. Number of components in respect of all the PLSR models covered in this paper.

to be replaced with the appropriate labels in respect of the other two models (e.g., *Measurement Analysis and Knowledge Management* being replaced by *Knowledge and Information*, in the case of the ABEF). Since we derived the models using the standardized category scores, the regression coefficients shown in Figure 5 are comparable across the three models as well as within the models.

The values reported in Figure 5 imply the following:

- As the range of the beta weights is small (0.1341 to 0.1854), all the enabler categories in all three BE Models are influential in predicting the results categories. It is interesting to note that our study does not suggest that the soft constructs of quality/BE such as leadership and human resource focus are more important than the hard constructs of quality/BE such as process management and information and analysis (in a correlational sense)—as observed by Powell, (1995), Rahman (2001), and Samson and Terziovski (1999).
- The results category of the SQAC is relatively less well predicted by its enabler categories.
- The process management category (and to a lesser extent the strategic planning category) is more influential a predictor of the results category than the other enabler categories. This makes sense, as results are a direct outcome of the processes.
- The effect of the leadership category in predicting business results seem to be approximately the same across all three BE models.

However, we caution that the above findings may not be generalizable on account of the samples we used (our samples were not random samples).

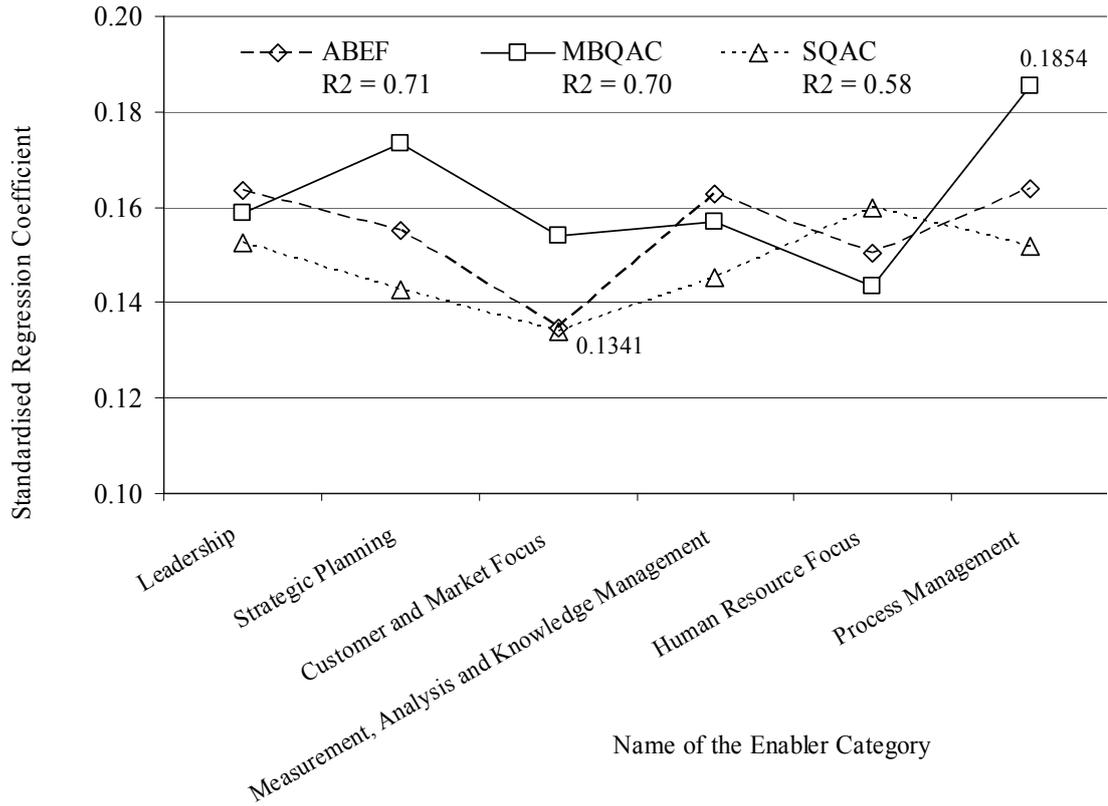


Figure 5: The standardized regression coefficients for the predictive models involving the results category and the enabler categories for the three BE models

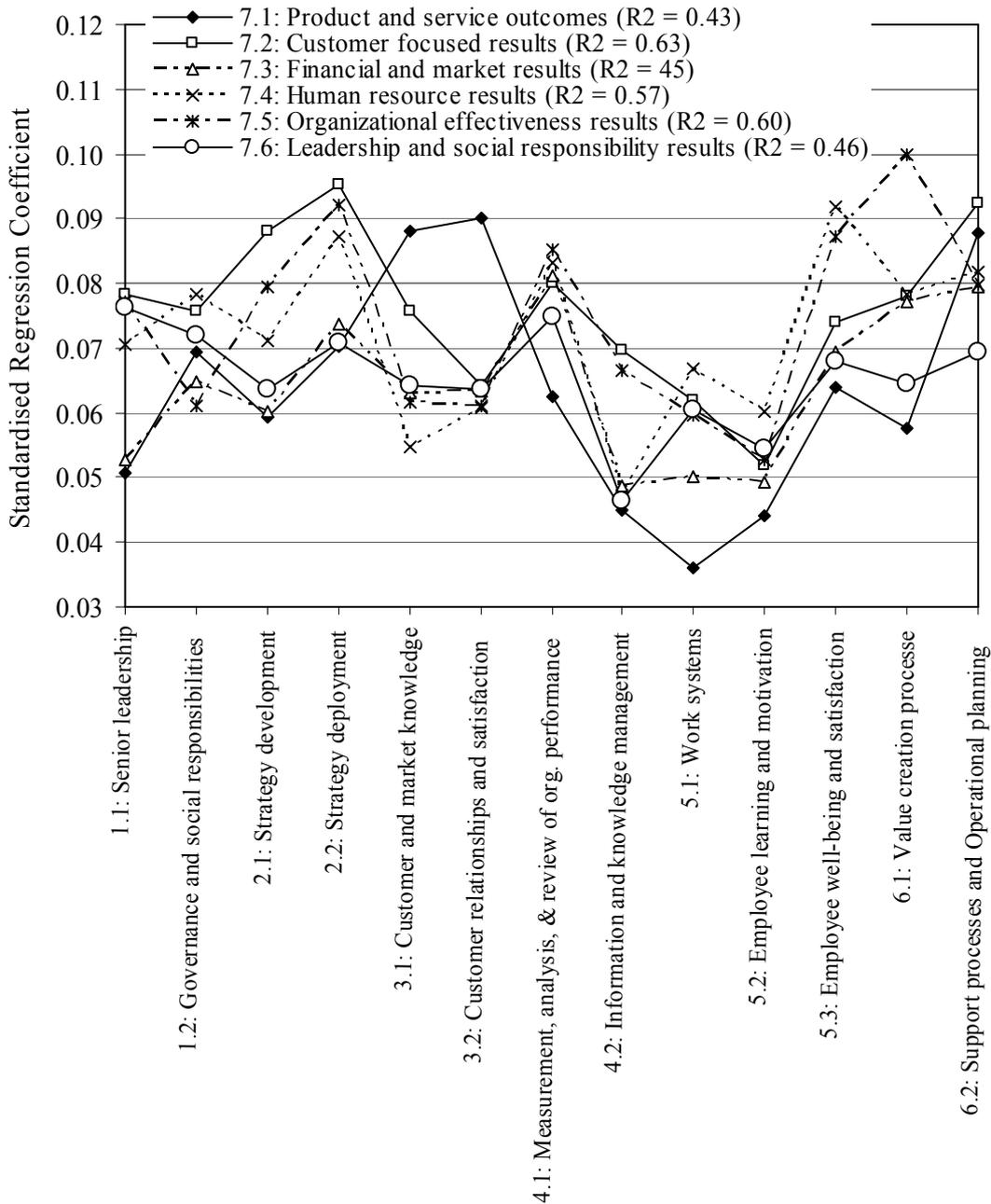


Figure 6: The standardized regression coefficients for the predictive models involving the ‘results items’ and the ‘enabler items’ for the BCPE

Figure 6 and Figure 7 depict the standardized regression coefficients for the predictive models involving the enabler items and the results items for the BCPE and the SQAC respectively. Combining the findings shown in these figures yield the following (again generalization should be made with caution):

- 1) All enabler items—with perhaps the exception of item 5.1 in SQAC, which was shown to lack validity—are useful predictors of business results.
- 2) Certain enabler items (as they ought to be) seem to be more influential than others in predicting results for a certain group of stakeholders. For example the enabler items on human resource management (HRM) and human resource development (HRD) are more influential than other enabler items in predicting human resource (or people) results. Similarly, enabler items on process management (ignore item 5.1 of the SQAC) are more influential than other enabler items in predicting operational/organizational effectiveness results.
- 3) Process management measurement items (items 6.1 and 6.2 in the case of the BCPE and item 5.2 in the case of the SQAC) seem to be more influential than most of the other measurement items in predicting financial and market results (the exceptions being item 4.1 in the case of the BCPE, and item 4.5 in the case of the SQAC). However, as observed by Saunders and Mann (2005), all measurement items appear to exert some influence in predicting financial and market results (as well as results on other stakeholders).
- 4) Several other enabler items of the BCPE appeared to have influenced more than item 5.1 and item 5.2 in improving the human resources results (item 7.4). This is a bit of a paradox because item 5.1 and item 5.2 are the items that primarily deal with systems and procedures that need to be put in place to enhance intrinsic work motivation of the employees, according to content theories on human motivation (Herzberg, 1987).

The fourth observation mentioned above is worth examining further (ideally using a random sample) to ascertain whether or not this observation is attributable to a sampling error. If not, it may carry connotations peculiar to New Zealand, in which case it is important to investigate what remedial action may have to be put in place to improve the envisaged human resource results.

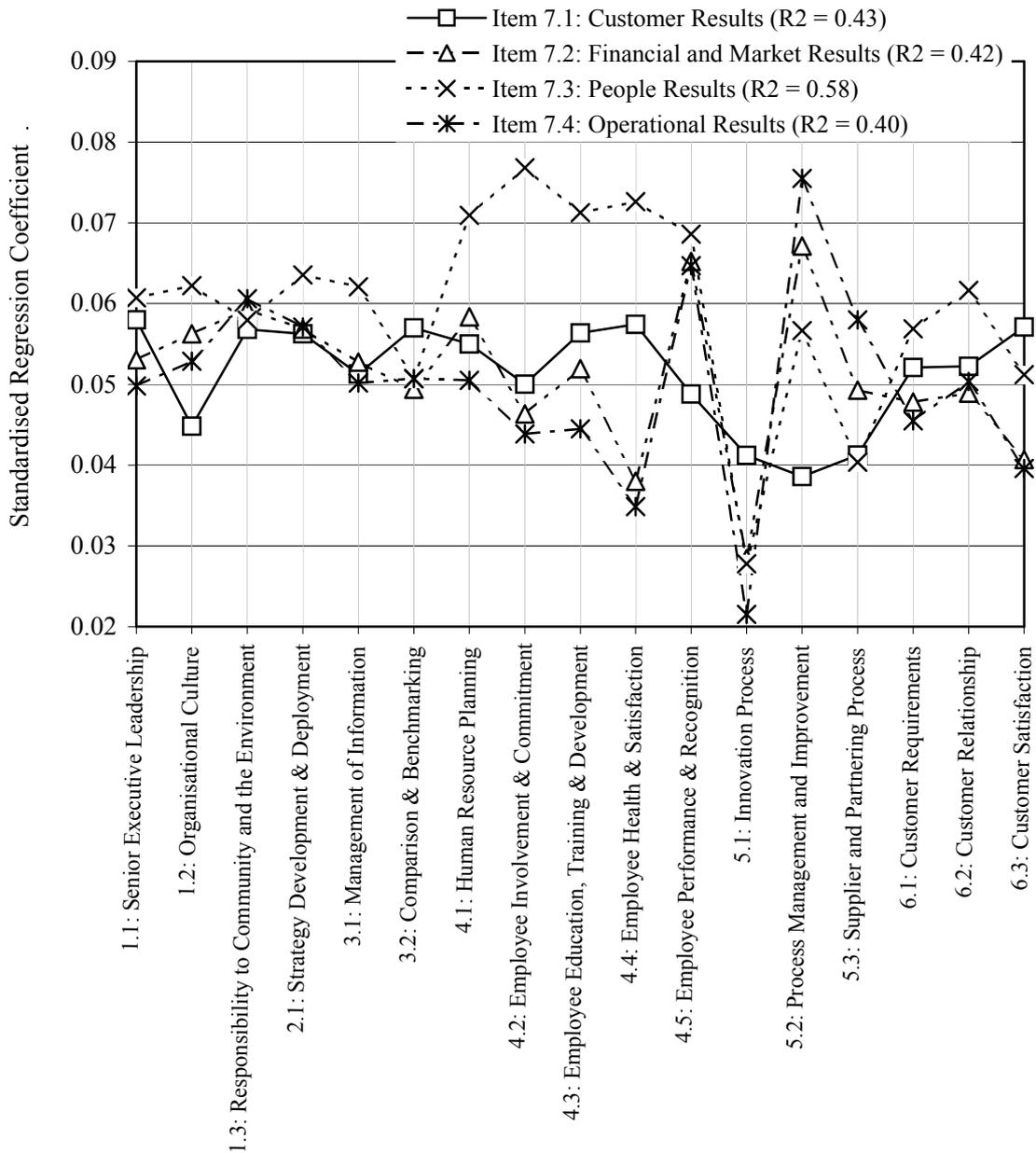


Figure 7: The standardized regression coefficients for the predictive models involving the results items and the enabler items for the SQAC

There are numerous other models that can be developed between the enablers and results; it is not our intention here to depict all of these. As mentioned earlier our intention is to show that notwithstanding the fact that enablers are strongly correlated, with modern statistical tools, it possible to model the relationships between the enablers and results, if they are reliable and valid. With improved BE measurement scales we believe that PLSR based linear

models can be used for predicting and understanding how and to what extent the measures covered by the enabler items impact business results.

Conclusions

Our study is unique in at least three respects: firstly, we used item scores secured by national BE/quality award applicants, to assess the validity of BE models. There are few studies that are based on data secured by BE/quality award applicants. We believe that it is not possible to make an objective assessment of the validity of a national BE model without such data. Proxy methods such as questionnaires/self-reports are more susceptible to various method biases. Secondly, we studied three conceptually analogous models (Australian, New Zealand and Singaporean) within a single theoretical framework using different data sets so that we could enrich our findings by converging evidence. Thirdly, through a state-of-the-art component based regression technique (Partial Least Squares Regression), we developed linear models that have the potential to predict business results and indicate potential performance management problem areas. To our knowledge Partial Least Squares Regression technique (not to be confused with Partial Least Squares path modeling) has not been used before in quality/BE literature.

In Part I of the paper, we demonstrated that all three BE models pass the thresholds for minimum requirements on validity. All three models showed strong evidence of convergent validity, but showed low levels of discriminant validity, which in turn caused a concern about the presence of multicollinearity of the BE categories. This in turn undermined otherwise strong evidence (bearing in mind the fact that BE models are still at the early stage of development) of validity of the three BE models. We devised heuristics to facilitate identifying the measurement items that need more attention in future model revisions. Our heuristics can also be used as a generic method to study measurement validity of instruments that measure concepts that are at early stages of operationalization/scale development. In Part II of the paper, we showed that although certain enabler items seem to be more influential than others in predicting results (in itself a form of validity⁸ known as predictive or pragmatic validity; e.g. Finlay & Wilson, 1997) for a certain group of stakeholders, when results for all the key stakeholders are taken as a whole, all the enabler items and categories

⁸ See Finlay and Wilson (1997) for a comprehensive list of different types of validities (invariably, all of these validities carry synonyms and quasi-synonyms) that are used in the literature. Note that we have covered all the key types of validities.

become equally influential in predicting the overall results (also see Saunders and Mann, 2005). However, our empirical findings imply that process improvement is relatively more important than most other management interventions, in terms of predicting the financial and market performance of organizations.

Needless to say, generalizations of our findings concerning the validity of the ABEF, BCPE and the SQAC can be made only to the extent that the sample data reflect the population of organizations to which the frameworks apply. As we used non-probability samples—which will always be the case in any empirical study that involves past award applicants—generalization of our findings should be made with caution.

It is desirable that a study similar to ours is carried out with random samples. Clearly, such a study needs the active support of the custodians of BE models, as trained assessors need to be deployed to gather performance measurement scores on various measurement items across a sizable sample in settings outside national quality award administration. In our study, we observed that a more structured measurement approach used in the SQAC did not appear to make those criteria in any way superior to the BCPE (which is relatively less structured) in terms of discriminant validity. Thus, another direction in which future research may head is the conducting of an in-depth study of different major national quality awards as instruments on performance excellence, with a view to proposing how the criteria could be improved to enhance discriminant validity.

Appendix-1

Table 6: Loadings and Cross-Loadings for the Singapore Quality Award (SQA) Criteria based on the PCA method

Latent variable (Category #) Item No.	1	2	3	4	5	6	7	Average Cross- loading	ΔV
Item 1.1	0.90	0.73	0.64	0.65	0.63	0.60	0.60	0.64	0.26
Item 1.2	0.89	0.65	0.55	0.70	0.58	0.59	0.59	0.61	0.28
Item 1.3	0.82	0.62	0.48	0.58	0.60	0.50	0.64	0.57	0.25
Item 2.1	0.76	1.00	0.72	0.69	0.70	0.67	0.63	0.69	0.31
Item 3.1	0.60	0.77	0.90	0.68	0.62	0.73	0.59	0.67	0.23
Item 3.2	0.54	0.52	0.90	0.51	0.56	0.55	0.56	0.54	0.35
Item 4.1	0.63	0.60	0.56	0.89	0.53	0.58	0.63	0.59	0.31
Item 4.2	0.63	0.54	0.55	0.82	0.45	0.48	0.58	0.54	0.28
Item 4.3	0.63	0.58	0.61	0.88	0.52	0.66	0.60	0.60	0.28
Item 4.4	0.57	0.57	0.52	0.83	0.44	0.60	0.54	0.54	0.29
Item 4.5	0.68	0.65	0.60	0.83	0.57	0.64	0.67	0.64	0.19
Item 5.1	0.51	0.50	0.37	0.51	0.64	0.51	0.32	0.45	0.19
Item 5.2	0.56	0.60	0.58	0.42	0.74	0.53	0.62	0.56	0.20
Item 5.3	0.52	0.51	0.53	0.43	0.87	0.44	0.52	0.49	0.38
Item 6.1	0.61	0.65	0.67	0.64	0.60	0.94	0.55	0.62	0.32
Item 6.2	0.64	0.59	0.63	0.66	0.59	0.92	0.58	0.61	0.31
Item 6.3	0.57	0.61	0.70	0.64	0.59	0.92	0.51	0.60	0.32
Item 7.1	0.57	0.53	0.57	0.59	0.50	0.55	0.77	0.55	0.22
Item 7.2	0.59	0.52	0.53	0.56	0.60	0.46	0.89	0.54	0.35
Item 7.3	0.65	0.59	0.59	0.74	0.52	0.57	0.81	0.62	0.20
Item 7.4	0.56	0.51	0.51	0.50	0.63	0.44	0.91	0.53	0.39
Average ΔV									0.28

Appendix-2

Table 7: Correlations of the BCPE Constructs/Latent Variables

Number/Name of the Construct	1	2	3	4	5	6	7
1. (Leadership)							
2. (Strategic Planning)	0.79						
3.(Customer and Market Focus)	0.64	0.56					
4. (Meas. Analysis and Knowledge Mgt.)	0.80	0.86	0.52				
5. (Human Resource Focus)	0.81	0.79	0.57	0.84			
6. (Process Management)	0.67	0.73	0.54	0.73	0.67		
7. (Business Results)	0.72	0.79	0.68	0.72	0.67	0.83	
Note: For all the correlation coefficients $p < 0.001$							

Table 8: Correlations of the SQAC Constructs/Latent Variables

Number/Name of the Construct	1	2	3	4	5	6	7
1 (Leadership)							
2 (Planning)	0.76						
3 (Information)	0.65	0.73					
4 (People)	0.74	0.69	0.68				
5 (Processes)	0.70	0.71	0.67	0.59			
6 (Customers)	0.65	0.67	0.73	0.70	0.65		
7 (Results)	0.70	0.64	0.65	0.74	0.68	0.60	
Note: For all the correlation coefficients $p < 0.001$							

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CHAPTER TWO

Quality Management as Innovation Management

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Introduction

Over the years, many have pondered about the larger role of quality. Some claim it is about variance reduction. Others have focused on defects and yet others on meeting certain standards or winning quality awards. All this is myopic. We need a broader perspective. Indeed, we need to think about quality in economic, strategic and business terms. The justification for engaging in quality improvement and more generally focusing on quality management should fundamentally be stated in terms of the economic effects to organizations and society at large.

The purpose of this paper is to initiate a discussion among quality professionals that hopefully eventually will produce a better economic underpinning and business rationale for the pursuit of quality and quality management than what is currently available. Not only does the quality profession not fully and clearly understand the economic importance of quality, but the economics and management professions are equally confused and misinformed.

Quality management should not be pursued for quixotic reasons. No firm we know strives to excel in accounting practice because its management has aspirations for winning accounting awards. Indeed, such ambitions would be considered absurd. Rather, management promotes good accounting practice because it is good for their business. As Adam Smith (1776) observed, "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest." We should not expect, nor should we want, any serious manager to promote quality out of benevolence. The driver should be self-interest. "The business of business is business" as Milton Friedman bluntly

declared long ago. The reason we are pursuing quality should be for business reasons. The pursuit of quality should not only be as a defensive measure (i.e., protection against deficiencies reaching the consumer or potential lawsuits) but also as an offensive and strategic function, one that promotes the brand and makes the organization more competitive, innovative, nimble and efficient. Ultimately the goal for an organization is to continuously adapt and succeed in a Darwinian struggle for survival. Rather than trying to push market offerings on the customers, quality should be pursued to create a demand, a market pull. Quality management needs to be integrated into the larger framework of business management.

From an economic perspective, we argue below that quality improvement is a subsidiary conceptualization under the general umbrella of innovation. In a dynamically evolving, never stationary, market economy, innovation is a matter of survival. Without constant attention to innovation, firms will go extinct, forced out by market forces. In this context quality management should be viewed as the managerial function that systematically manages process and product innovations related to customer satisfaction and specifically, quality in terms of delivery and design.

In this paper we first define quality followed by a brief discussion of the economic effects of quality within the firm. This discussion is followed by an outline of the role of quality relative to market structures. We then discuss how quality fits in under the umbrella of innovation and how quality management essentially is a structured system for managing innovation processes.

Definitions of Quality

Before we enter into a discussion about the economics of quality, we need to define what we mean by quality. The typical use of the term quality is ambiguous and often interpreted in fundamentally different ways in the economics literature. This lack of clarity in definition typically causes confusion and misunderstandings. In what follows we lump together services and physical products and only refer to products.

Dictionaries provide many definitions of the term quality. Most are too vague or philosophical to be of technical use. However, the definition of quality as *fitness for use* is

widely recognized today as one of the more useful - This definition can be traced back to Harriman, 1928, page 131, but is usually attributed to J. M. Juran. To appreciate the subtleties of this somewhat awkward definition, consider the following example. If a busy business traveler needs a simple, clean and safe accommodation for the night, an expensive five star hotel room may not constitute “fitness for use” despite its luxury delivered to perfection. However, the same person may come back the next week for a vacation with the family and find the five-star hotel to be a perfect “fit” for that use and therefore be delighted with the quality.

It is the customer, not the provider, who defines quality. Further, quality depends on the circumstances. It is not “more is better” but fitness for the customer’s use that is the issue. Quality must be defined relative to the customer’s needs and expectations. Quality is a bundle of attributes timely delivered to satisfaction that solves the customer’s problem. In a competitive market economy, there are typically multiple alternative market offerings. Ultimately customers vote with their pocketbook based on a tradeoff between cost and their perception of the quality delivered. Quality is what appears appealing and “fit” to the customer relative to alternative market offerings including all the circumstances in the delivery process.

Although “fitness for use” is the predominant definition, we need further subsidiary definitions, chiefly for economic reasons. On the one hand, some people may argue that high quality will be more costly and expensive. Advocates of that viewpoint explicitly or implicitly think of quality in terms of *features*. On the other hand, others may argue that high quality is cheaper. This may seem contradictory, but is not. Advocates of that perspective consider the cost of defects, delays, rework and waste, or more broadly *deficiencies* associated with poor quality. They understand that first doing things wrong and then having to fix the problems, inevitably is expensive. Reducing deficiencies reduces costs. Permanently removing the causes of deficiencies produces permanent savings, often very substantial ones.

On this background we find it useful conceptually to distinguish between *delivery quality* and *design quality*. This distinction, illustrated in Figure 1, is fundamental to understanding the economic reasons for pursuing quality as a strategic objective. Delivery quality is related to the reduction of delivery problems and deficiencies such as defects, delays, snags, rework

and waste in the entire value creating chain, from raw materials, production, and to the product is delivered to the ultimate customer and beyond. Design quality is concerned with determining and improving a products features.

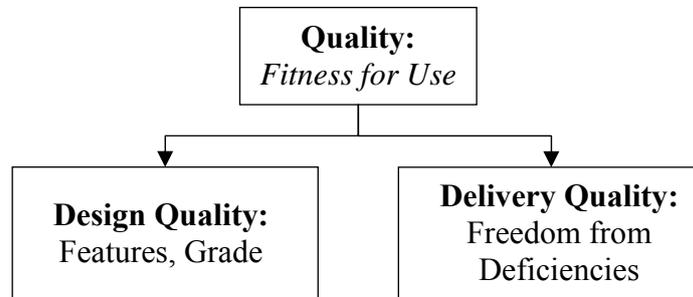


Figure 1. Quality defined as “Fitness for Use” and the two subsidiary definitions as “design” and “delivery” quality.

Micro economic effects of quality

The economic relations relative to design and delivery quality are as follows. Typically increasing quality in terms of design (features, grade) will increase the cost of producing a product. However, it will also allow the firm to charge a premium price and may increase sales volume. Added or improved features or grade have a beneficial “top line” effect. On the other hand, improving quality by reducing the number of errors, deficiencies, delays and delivery problems will usually reduce costs. Thus, it has a “middle line” cost saving impact, that immediately trickles down to the “bottom line” as increased profit. In the long run, reducing deficiencies and improving the delivery will also improve a company’s market reputation and ultimately the brand. Therefore, improving the delivery quality may also allow for charging a premium price, increase the market share or both. Figure 2 provides a graphical summary of the economic relations. Given these economic relations, it can be seen that the common but naïve perception that “high quality costs more” is not necessarily true. In fact, in regard to delivery quality, the contrary is usually the case: *high quality costs less!* This is a compelling reason for business executives to pursue a quality improvement strategy!

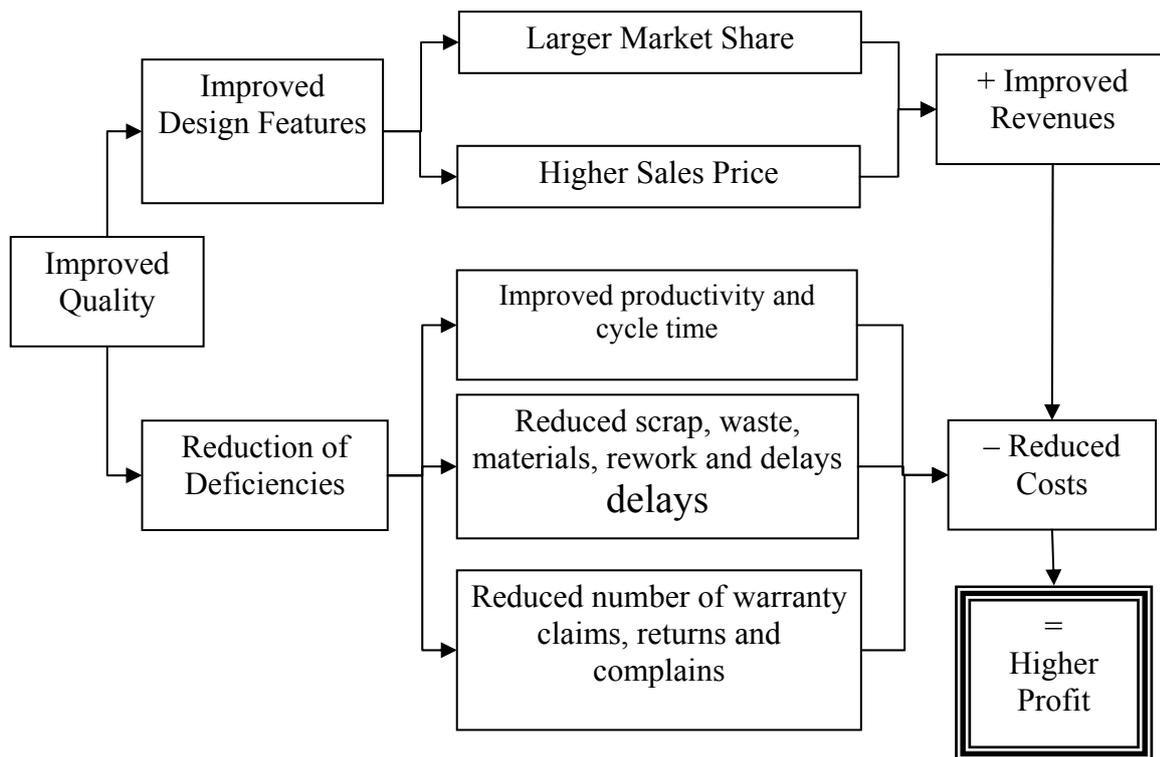


Figure 2. A graphical summary of the economic relations of quality defined as design features and deficiencies. Improving features primarily impact the “top line.” Reducing deficiencies impacts the “middle lines”. Both contribute to improving the “bottom line.”

The above discussion of delivery quality can be related to the economic concept of transaction costs. Economists liken transaction costs to friction in mechanical systems. The part of quality improvement that deals with delivery quality is about the reduction of transaction costs in a broad economic sense. Defects, rework, snags and delays are frictions. Their reduction reduces the cost of doing business. Quality problems complicate contracting issues as well as the internal coordination.

So far we focused on the more tangible economic relationships. However, poor delivery quality has other more subtle effects seldom discussed and less easily quantified. One is what we will call *the cost of crisis management*. Chronic poor quality is typically not an urgent issue. Management gets used to chronic waste. Not so with sporadic problems. Whenever sporadic quality problems occur, it typically creates a crisis that demands immediate management attention. The crisis must be attended to and cannot be delayed. The quality problem can be internal or external.

To provide an example of an internal crisis, consider a glass manufacturer. If for some reason the scrap rate suddenly increases from say the typical 10 % to 60 – 70%, management will likely drop everything they are currently doing to focus on what they can do to bring the quality back in control. Given the economic significance of such a crisis, this will overshadow everything the management team might be doing. Thus, a short term crisis will pull management towards dealing with what is urgent away from what may be important long term such as thinking about the strategic market position of the company's products and the development of alternative market offerings. The cost of such distractions is difficult to quantify, but can be devastating. The correlation between a firm's overall quality level and the frequency of internal crises is likely high.

With good process control procedures and inspection, internal quality problems should in theory not spill over into the market place. However, in practice they often do. Indeed, the correlation between internal quality levels and the number of defects that reach the customers is often quoted in the literature as being high. External crises caused by quality problems spilling into the market are typically much more serious than internal problems. To provide an example of an external crisis consider the case of Firestone, a tire manufacturer. This icon of American industry was ISO 9000 certified as a manufacturer of tires for major automobile manufacturers. However, Firestone's products, especially when used for Ford Explorers were defective causing fatal accidents. This crisis essentially bankrupted the Firestone Company within a few months after the news came out. Similarly Arthur Andersen, formerly a world wide accounting giant, was also wiped away within a few months after the quality of their accounting was called into question in the wake of the ENRON scandal. Quality problems that occur in the market can be devastating for the economy of any company.

Quality problems, large and small, cause serious instability in the management function. In some cases the management will manage to stabilize the crisis and recover. However, crisis management takes its toll. Although it is not easy to quantify the cost of crises, such events seriously distract management and pull them away from managing the firm to focus on the immediate and urgent quality crisis.

In sum, poor quality has many serious economic effects on the operations of a firm. The quantifiable cost-of-poor-quality is typically only the tip of the iceberg. On the other hand, as so vividly exemplified by the Toyota Motor Company, now the largest automobile manufacturing company in the world, high quality is not only good for the top line, high quality also helps reduce the cost of manufacturing. It is this latter subtlety that is most often overlooked by economists.

Quality as non-price competition

Competition is what characterizes a free market economy. Typically it is assumed in the economic literature that we compete on price only. However, as Schumpeter (1942) remarked (prematurely, we think) many decades ago, “Economists are at long last emerging from the stage in which price competition was all they saw. As soon as quality competition and sales effort are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position.”

Modern economists, notably George Stigler, have recognized that we can either compete on price or on non-price dimensions, for example, advertising, services, and warranties. More formally, the economics literature defines *non-price competition* as the adoption of any policy other than price reduction to attract (new) customers. Typically the term non-price competition is used in reference to advertising, marketing, product innovation, complimentary services, quality, reliability (quality over time) and warranties. Non-price competition is particularly important when there are legal or other restrictions on price competition. However, it is also important when consumers use price as a signal of quality with the assumption that cheaper products must be of lower (design or delivery) quality. Non-price competition can also be used in conjunction with competition on price; see Stigler (1968).

Economists seldom include quality as a non-price competitive dimension. When economists do discuss quality, they typically do not define what they mean by quality. Specially, they do not distinguish between design quality and delivery quality and thus generally confuse these to subsidiary definitions despite the important economic difference and implications as discussed above.

As Stigler (1968) pointed out, economists usually attribute more power to price than to non-price competition. However, they usually do not explain this asymmetry. Stigler argues that the asymmetry is plausible because the cost of the non-price variables at some point may exceed marginal price reduction costs. Thus he implies that there is a diminishing return of the non-price factor and a trade off so that equilibrium will be reached. This is likely true if we consider regular non-price variables such as advertising and warranties. We concede it may even be true for competition on design quality. However, in the case of delivery quality, we showed above that increasing quality reduces costs. Thus we will not necessarily experience a trade off between costs and quality. We believe this goes far to explain how such firms as Toyota have been able to compete on quality. Indeed, this in some sense goes counter to “conventional wisdom” and what scholars such as Michael Porter who claims that we have a choice to make between competing on price or quality, but not both (see Porter, 1985). On the contrary, we claim that pursuing a general quality improvement strategy in terms of design and delivery quality, we can compete on both price and quality as costs are reduced by improving delivery quality while features are improved.

Quality and market structures

We now briefly discuss quality relative to the market and market structures. A central concept in economics is competition. We distinguish between the competitive behavior of the individual firm and the type of markets firms operate in. The latter concept is called market structure.

Monopoly is one such market structure. It is typically assumed that in a monopoly situation, quality suffers. The same is true for firms in a state controlled plan economy. Further, when demand seriously exceeds supply, quality occupies a low priority. For example, in the years during and right after World War II, quality was seldom an issue. Whatever supply was available was immediately sold, no questions asked. But as the economies worldwide recovered, quality returned to center stage. In our discussion below we will focus on a “normal” free market economy where the market freely controls supply and demand and where market forces dynamically seek a balance between supply and demand.

It may appear from reading standard economics literature that a firm typically will have to accept the market structure it is in. In the quality management context we find it more productive to think that managers can pursue strategies (especially relative to quality) that allow them to control their destiny and steer their firm away from market structures that are unfavorable.

The least favorable market structure from the firm's perspective is perfect competition. From the firm's perspective a more favorable situation is the other extreme, a monopoly. Both perfect competition and monopoly are two extremes seldom encountered in practice. Typically firms find themselves somewhere in between. We will now define these terms and discuss the implications for quality and innovation.

Economists theorize about idealized market structures. Perfect competition is where all firms are small relative to the market and all products are the same. Under perfect competition firms produce indistinguishable commodities and compete on price only. Over time all firms are driven into a situation where they barely cover their costs and hardly make a profit. Quality is mostly a defensive issue. To be a player in such a market, the firm must deliver as a minimum the same outgoing quality level as everyone else in the market. However, the firm may pursue internal delivery-quality improvement strategies to reduce costs.

At the other extreme is the market structure called monopoly. Here there is only one firm that controls the entire market and the consumer has no choice but to accept the monopolist's market offering. Indeed, in the strict sense there are no substitutes for the product either. Of course, like perfect competition, none of these two extremes occur in real life. However, resemblances of monopoly power do exist when (a) the minimally efficient scale of the operation is so large relative to the market that only one firm can operate profitably, (b) when firms market offering are differentiated (c) when there are barriers to entry that puts an entrant in a cost disadvantage relative to the incumbent and (d) when a patent or charter provides the firm with exclusive use of the product design or process (e) when there are strong networking effects and (f) when high transportation costs or location provides a local monopoly. These situations often lead to natural monopolies.

In a monopolistic market situation, it is typically assumed the monopolist has no incentives to improve quality. This is likely true in some restricted sense especially for design quality. However, there is clearly always an incentive to reduce the cost of production. Thus if we consider quality improvement relative to delivery quality, reducing deficiencies and hence reducing costs, there should be an incentive to improve quality. We say “should” because it obviously depends on the monopolist recognizing this opportunity, a fact that is not a given. However, in general, there is even in a monopoly situation some form of incentive to innovate and improve the delivery quality hence lowering cost due to rework, scrap, waste, etc. The effectiveness of this strategy depends on the perceived magnitude of the extra profit that can be produced.

In practice, monopoly power and the arrogance that may come with such power can disadvantage the customers so that complaints are not taken seriously. Natural monopolies sometimes seem to act this way. Government agencies may also behave similarly. Customers may also suffer when supply is short relative to the market demand. As indicated above it is usually assumed that monopolists in the traditional sense have little incentive to innovate especially in terms of design quality. However, this assumption should be regarded with some skepticism and may not in general be true. Schumpeter (1942) argued that in a monopolistic situation, the entrepreneur that arrives with a new innovation can erode a monopoly by the process of creative destruction. Christensen (2000) discusses disruptive innovations that sometimes completely undermine monopolies or strong oligopolies with whole new substitute market offerings. Those are typically breakthrough innovations that perform similar jobs or are substitutes for the existing products but have a substantially lower cost.

Under imperfect competition, firms compete on other dimensions. A more realistic market structure between the two extremes of monopoly and perfect competition is called monopolistic competition. Under monopolistic competition each firm’s product is unique and differentiated. This allows firms to charge prices that are higher than a minimum sufficient to cover costs. Firms promote and pursue innovation through research and development to differentiate their products, processes and services. We argue that from a strategic point of view, the role of quality management is to continuously work to nudge a

firm into a monopolistic competitive position. This will allow the firm to charge more than a minimum sufficient to cover costs.

Indeed, in a competitive economy, firms are only entitled to earn a super-normal profit and thus have a base for long-term existence and growth as a viable economic organization when they deliver something unique and different. If a firm has nothing but a commodity to offer as assumed in perfect competition, it can only differentiate itself by competing on price. Competing on price easily leads to a death spiral as competitors retaliate with lower prices. Thus, according to classical economic theory, firms can only survive long term if they adopt either of two mutually exclusive strategies: (a) develop a significantly cost advantage relative to their competitors or (b) compete on features and offer differentiated products and services that are better in the eyes of the customers. However, a strategy focused on innovation in quality provides a third and appealing alternate: a firm can compete on price *and* features. A strategy focusing on quality allows firms, for-profit or not, to improve features of their products and services *and* provide flawless and therefore less costly delivery.

Innovation defined

Schumpeter (1932) claimed that standard equilibrium economic theory fails to provide a satisfactory explanation for economic growth. Later scholars have labored to provide further justification for this claim, see e.g., Nelson and Winter (1982). Our own point of departure or assumption is that our economic system should be considered evolutionary and dynamic; see Nelson and Winter (1982). As in biological evolution, change, adaptation and survival of the fittest are the basic mechanisms that drive the economy. Indeed, without innovation, firms will stagnate and wither away. Entrepreneurial innovation therefore provides a compelling explanation for endogenous growth.

We define innovation as the process of commercializing an invention. Innovations include both technological and organizational advances and can be either breakthrough or incremental. We note that this definition implies that innovation is a process; innovation encompasses the entire process of invention, development and eventual commercialization of new products and services, new methods of production or provision, new methods of transportation or service delivery, new business models, new markets and new forms of

organization. The success or failure of an innovation is measured in economic and not scientific or technological terms. To put it bluntly, the currency of success in invention may be the number of scientific papers or patents yielded, but for innovation it is exclusively in monetary terms — return on the investment. For example, there are likely no scientific papers on the invention of the wheel on suitcases. However, this somewhat mundane innovation has been a resounding commercial success allowing entrepreneurial and innovative manufactures to bring new lines of products to the market that made obsolete the old style suitcases. In other words, this new quality feature made those firms adding wheels to their products more competitive relative to those competitors that did not. It also made the firm competitive relative to its own older style products gently forcing customers to replace their older suitcases before they necessarily needed to be replaced because of wear and tear.

The innovations we are referring to can be of many different types. As already alluded to, they can be breakthrough or incremental. They can be related to the design or delivery of the product or service. They can be providing new features or related to producing the same product or service at a lower cost. They can be related to new technologies, new sources of supply, or new markets. They can even be related to new types of organization. For example, the modern super market was a breakthrough innovation in organization that rendered the traditional grocery store concept extinct.

The typically innovation cycle follows a recurrent pattern. A technological breakthrough based invention leads to an innovation that is crude and appealing to a few technologically sophisticated customers but not generally appealing to a large consumer audience. Then there follows a stream of incremental innovations to the design that improves the features and makes the product more appealing and more useful to a larger audience. Then as price pressures begin to set in and volume production becomes an issue, follows a series of incremental innovations to the delivery process that allows for larger scale production and better production economy. It is those incremental innovations to the product and the process that typically are considered quality improvements.

As Schumpeter (1950) explained, innovation is the fundamental impulse that sets and keeps the economic engine in motion. Indeed, he argued that the primary reason for profits is as a premium for the risk of innovation. Innovation introduces a dynamic element to the economic system that creates change. Typically new and useful innovations initially generate

high profits for the successful entrepreneur. However, the high initial profit attracts other entrepreneurs and investments. Consequently, the volume introduced into the market starts to increase and with these adjustments to the supply, prices gradually fall and the competition gets tougher. Over time the price of products naturally converges to a level where there is hardly any profit left. Eventually, the weaker competitors and those that do not innovate are acquired, merged, or go out of business.

Sometime during such a cycle, a new innovation which may be an improvement in the quality (i.e., a better value proposition) of the product, process or service typically enters the stage and a new cycle is initiated. Eventually this new innovation renders the older innovation obsolete. Schumpeter (1950) referred to this as “the perennial gale of creative destruction.” For example, the typewriter was rendered obsolete by the computer and lately the computer industry itself has been under much pressure, resulting in major consolidations, mergers and acquisitions and much of the production has moved off shore. This convergence toward commoditization is as close as it comes to an “economic law” and is the reason for the current trend towards outsourcing to countries with lower labor cost levels.

When most powerful, innovations command a decisive cost or quality advantage. According to Schumpeter (1950) this kind of innovation-based competition strikes not on the margins of existing firms, but at their very foundations and threatens their survival. Innovation-based competition is extremely effective. The epic struggle between the incumbent IBM and Microsoft, a nascent startup in the early the 1980’s, provides a vivid example.

Quality as innovation

We are now ready to argue that quality management is about innovation. As indicated above, we define quality as “fitness for use” with the two subsidiary definitions of “deficiencies” and “features.” Deficiencies cost money to produce, sometime much more than doing things right in the first place. Any improvements aimed at eliminating chronic sources of defects from processes are process innovations that reduce cost and improve our competitive position (see, Bisgaard and Freiesleben, 2004). When a firm has developed a reputation for defect free delivery of high quality products, it has achieved a competitive edge that is hard to match and difficult for competitors to reverse engineer or copy. In other words, the firm

has differentiated its market offering. By doing so it has achieved a monopolistic competitive market situation that allows for a higher than minimal profit.

As indicated above, non-price competition is typically more effective than competing on price; getting into price wars invariably end up with a race to the bottom. But, of course, we cannot only rely on reducing deficiencies. We must also compete on product innovations that involve new features, develop new products or services that provide better value to the customers. This is what Juran (1989) has called quality planning. In Six Sigma terminology it is called Design for Six Sigma (DFSS). Thus we come to our main point namely that quality management from a broader economic perspective constitutes a systematic approach and a set of tools and methods for process, product and service innovation, large and small, incremental or breakthrough. Conceptually, innovation entails more than quality in the narrow sense. Indeed, quality professionals typically attack problems that are not only related to defects and deficiencies. For example, some people have tried to separate Lean Manufacturing from Quality Improvement. But obviously such issues are not separate. They all aim at improvements. Indeed quality professionals more broadly engage in any project aimed at providing a market offering that provides better value to the customers — better costs wise or better in terms of features.

We consider innovation an umbrella concept that includes as an important subsidiary notion, quality management. Quality management provides important tools, methods and organizational structures for certain key aspects of innovation. Further, quality management provides a well-developed system for innovation management. Indeed, other areas of innovation can learn from quality management when it comes to the management aspects of the process of innovation, how to organize teams, how to manage projects, etc.

Admittedly, much of what quality management is applied to can broadly be characterized as incremental innovation. Increasing the yield of a process by reducing the defects or achieving better control of a process are typical examples of incremental innovations. However, for those that may turn their noses up on that type of work, one should remember that innovations that may not be technologically significant enough to warrant much attention in technical journals may indeed be extremely important economically. Making the first light bulb was a technological breakthrough. Fine tuning with the help of design of

experiments and statistical process control a machine that can produce 3000 defect free light bulbs an hour is not.

Information — Local and specific information

Information and knowledge are key drivers of innovation and economic growth. Computer and communication technology is obviously a part of it. However, a more fundamental issue is how to generate new knowledge. Specifically, knowledge is generated by obtaining data and converting it to information that facilitates learning and hence knowledge generation.

Historically a fundamental conceptual feature of quality management is its ability to organize an organization for efficient knowledge generation and utilization of specific knowledge at all levels of an organization. Quality management uses what we generally will characterize as scientific method to generate specific knowledge. Specific knowledge is non-generic knowledge valuable for decision-making that is costly to transfer among agents (see Wruck and Jensen, 1994).

Quality professionals recognize the key role played by the technology of statistics, design of experiments, sampling and statistical analysis. The quality profession is the primary purveyor of the application and management of this important technology. The knowledge we need to generate is what may be called “specific and local knowledge”. The economist Hayek (1945) in a paper on the economic role of information said “the ... problem [of economic success]... is mainly one of rapid adaptation to changes in the particular circumstances of time and place ... ultimate decisions must be left to people who are familiar with these circumstances....” In other words, decision-making local to where the action takes place, is more effective than centralized decision-making much the same way the invisible hand of the market decisions has proven to be more effective than a centralized plan economy. But to support local decision-making and help employees, from the factory floor worker to the CEO, deliver quality economically, we need local knowledge. Knowledge needs to be generated where it is needed, where it can be interpreted and understood and where it can be acted upon intelligently. But to generate information and to learn, we need skills in the application of scientific method. We need the ubiquitous and universal application of scientific method. Continuous never-ending knowledge generation

and learning with an emphasis on learning from data is what Dr Walter Shewhart stood for and is the essence of what quality is all about.

It should also be mentioned that optimal solutions is not what we are striving for; optimization in the strict sense is an illusion, a mathematical ideal not possible or useful in practice. As Hayek (1945) eloquently argued, we will never in a single person's mind have enough information to make optimal solutions. In practice, we try with limited information, resources and knowledge to nudge the system forward, to generate "good" solutions to complex problems. That is why statistics with its inductive – deductive approach and not operations research with its elaborate deductive methods for mathematical optimization, is so important for quality. Solutions generated are more likely satisfactory [see Simon (1997, pp. 118-139) on satisficing and bounded rationality] and obtained based on limited knowledge in an inductive deductive fashion. The important issue is to find robust solutions since inevitably in practice, the basic assumptions made in developing solutions are typically violated; see Box, (1979). We don't optimize. We evolve. New solutions are path dependent and not globally optimal.

A macroscopic perspective on quality: The societal impact of quality

So far we considered the business economics of quality – the individual firm's motives and incentives for engaging in a quality strategy, the individual manager's and owner's reasons for innovation. However, there is also a more macroscopic economic side to quality – incentives and motivations for quality in the aggregate. Indeed, quality is vital to a modern high technology society. As Juran (1970) pointed out, in an increasingly industrialized society, quality is imperative. We depend on reliable products, services and systems. We have concerns about protection against power outages, environmental catastrophes, safe drugs, safe products and services, safe medical care, reliable communication channels, safe and healthy food, etc. Juran (1970) called this "life behind the quality dikes." He explained, that "like the Dutch who have reclaimed so much land from the sea, we secure the benefits of technology. However, we need protective dikes in the form of good quality to shield society against service interruptions and to guard against disasters." What we need are systems of control and monitoring that will provide consistent, reliable products, processes and services and sound alarms in case of trouble. Quality assurance and quality control are important from a societal perspective even if rarely yet discussed by economists.

This topic is at the present time not well developed. Rudiments exist. In some areas of applications there are even well developed systems. The economics is certainly not well developed. However, it is important that it be addressed and further developed by the quality profession. Almost any large scale catastrophe or calamity has underneath a quality management origin. The Chernobyl nuclear reactor failure, the thalidomide affair or the New Orleans flooding were at its root caused by management failures that the careful application of quality management principles could avoid or at least mitigate.

A unified approach to managing innovations: Juran's Trilogy

How should we organize for innovation? Breakthrough product development is typically organized within a Research and Development organization. This organizational construct makes sense for breakthrough products and services and typically works well. However, incremental innovations and especially process innovations are better organized differently. Increasingly, companies are discovering that it is not enough to have a centralized R&D department in charge of breakthrough innovation. They also need to have a system for managing incremental innovations. Incremental innovation efforts used to be somewhat haphazardly organized. In today's competitive economy that is no longer sufficient. Incremental innovations, by their nature are needed everywhere, must be managed in a decentralized fashion and cover the entire organization. Indeed, Six Sigma, and especially a collective project management system to be discussed below, is the answer to the need for a solid management structure for managing incremental innovation projects across an entire organization to meet the need for staying competitive in an ever changing global economy.

The innovations need to be spread throughout the entire organization. The people with the local knowledge should be involved. Thus, the systems developed for quality management are well suited for those kinds of innovations.

Many systems for managing quality have been advanced including the ISO9000 standards, the Baldrige and the EFQM model. We are not in favor of these complex and bureaucratic systems. Indeed, we think they have been failures on a massive scale. A major reason is that they have not focused on innovation but on charactering and standardizing existing management structures. Indeed the focus has been solely on quality assurance. Of course

quality assurance is an important sub-function of a quality management system, but as indicated we believe a primary focus should be on nurturing constant innovations, improvements and change, not enforcing a status quo.

Simplicity has virtue. Thus we have come to believe that the most productive conceptual system for quality management advanced so far is the Juran Trilogy. The trilogy was introduced more than 20 years ago and still seems quite complete relative to other systems; ISO 9000, EFQM and Baldrige. These approaches do not sufficiently emphasize innovation and improvement. Even Six Sigma in its current incarnation does not sufficiently emphasize control. Juran's Trilogy may need some polishing up in light of the changes that have taken place and learning gained, but it is a good starting point.

The trilogy is a comprehensive framework and set of principles for organizing quality within an organization. This concept was first articulated in Juran (1986). Based on his experience in the 1920's at the Hawthorne Works of the Western Electric Company, Juran already before WWII rejected the notion that quality was only an inspection function; see Juran (1993). He further objected to the notion that quality should be the sole responsibility of the quality inspection department. In his view the responsibility should remain with the operating departments; those that make the defects have the responsibility for them, not the inspectors. Any other allocation of responsibility will have disastrous consequences for quality and operational costs. Moreover, Juran was keen on breaking down institutional barriers that prevented quality improvement initiatives. As he learned as a young engineer, in a traditional management environment, "production was the job of one unit, quality of another unit, and no one was in charge of process improvement." See Juran (1993, p. 40).

Juran suggested that the financial function provides a useful managerial model to emulate for the quality function within a firm both in terms of job description and organization. It is the operating department's responsibility to produce financial results, not the finance departments. Likewise, it should be the quality functions responsibly to coordinate activities relevant to quality. Continuing the analogy, Juran pointed out that the financial management function consists of (a) budgeting, (b) budget control and (c) cost reduction activities. In generic terms these three functions are concerned with (a) planning, (b) control and (c) improvement. Juran suggested that quality management likewise should be organized into three equally important functions, (a) quality planning, (b) quality control and (c) quality

improvement. Table 1, based on Juran (1989) but adapted and modified, outlines the tasks and responsibilities of these three functions.

It may seem logical to implement quality planning before engaging in quality control and quality improvement. However, Juran suggested that it is more pragmatic to start with quality improvement. Any existing organization will be able to make substantial improvements right away with a small upfront investment. This will help establish quick wins and early employee buy-in. This is psychologically important for any change management program; see Kotter (1995). Nevertheless, we discuss below Juran's trilogy in the logical order of planning, control and improvement.

<i>Quality Management: Juran's Trilogy</i>		
<i>Quality Planning</i>	<i>Quality Control</i>	<i>Quality Improvement</i>
<ul style="list-style-type: none"> • Determine who the customers are; classify customer segments • Determine what the needs of each customer segment are • Design products with features and specifications that satisfy the needs of the customer segments • Develop products and processes that are capable of delivering the product or service • Develop metrics and control mechanisms for monitoring and control • Provide training in the delivery processes 	<p><i>Planning for Control:</i></p> <ul style="list-style-type: none"> • Develop an understanding of what needs to be controlled relative to customer needs • Develop a process flow diagram • Choose what and where to control; control points • Establish measures • Establish goals and standards of performance <p><i>Executing Control:</i></p> <ul style="list-style-type: none"> • Evaluate actual outcomes • Compare actual outcome to goals • Take action on the difference 	<ul style="list-style-type: none"> • Establish infrastructure for improvement • Identify improvement projects • Establish improvement teams • Provide teams with resources, training and motivation: <ol style="list-style-type: none"> 1. Diagnose root causes 2. Find remedies; Improve 3. Establish controls to institutionalize and hold on to the gains 4. Disband the team

Table 1. The Juran Trilogy consisting of the three functions of quality planning, quality control and quality improvement. This table is based on Juran (1989, p. 22) but modified and adapted.

Quality planning

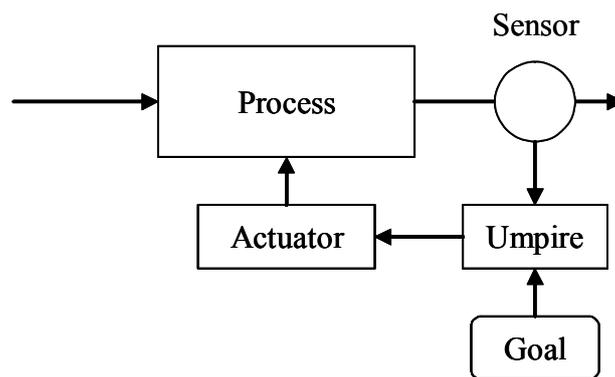
To stay competitive, we must do more than just removing deficiencies. We must develop new products and services with new features that appeal to an evolving customer taste and continue to be better than the competitor's offerings. Moreover, we must do so without repeating the mistakes of the past and without designing deficiencies into the product. At the

product design stage, we must proactively try to prevent the need for subsequent quality improvement.

Quality planning is the process of preparing the launch of new competitive products, services and processes that meet customers' needs and expectations, minimize product and service dissatisfaction, avoid costly deficiencies, improve company performance, and provide participation from those affected by the product or service. Quality planning is essentially a marriage of the traditional marketing function with the research and development or engineering design function; see e.g., Kotler (2003).

Typically quality planning involves developing new or updating existing products to meet evolving market demands, changing taste or take advantage of new or emerging technologies. Table 1 summarizes the steps of the quality planning processes. Quality planning starts with establishing a team project. The cross functional team needs to identify the customers, discover the customers' needs, develop the product or service, develop the process for the delivery of the product or service, develop the controls and transfer to operations. Upper management must take responsibility for initiating, supporting, provide resources, and monitor the quality planning process.

Figure 3. The concept of process control.



Quality control: Managing the control function

The second function of Juran's trilogy is quality control. The basic tasks of the control function are summarized in the center column of Table 1. Figure 3 provides a systems diagram of the universal control function. A sensor evaluates actual performance. The actual

performance is reported back to the umpire. The umpire compares the actual performance to the target (goal). If the difference is significant (i.e., larger than noise) the umpire orders a control action. The actuator makes the necessary changes to bring the process back on target (goal). This idea is applied universally at all levels of management. All employees, from the shop floor worker to the CEO, exercise control. The difference is the subject and scope of control. Workers typically control product and process features. Executives control budgets, sales, etc.

Juran emphasized that for the control function to be effective, we need to worry about the distribution of authority and responsibility. We already mentioned that traditional quality control by inspection carried out by a separate inspection department tends to develop an unhealthy transfer of the responsibility from the producer to the inspector. That approach has proven ineffective. The issue of separation of authority from responsibility however applies more generally, not just to the shop floor inspection function. Juran pointed out that necessary criteria for what he termed *controllability* of a process are: (1) knowing what the goals are; (2) the ability to know what the actual performance is, and (3) having means for, and authority to change the performance when the process does not conform to goals or standards. Without these three criteria fulfilled, a person cannot fairly be said to be in control. Ideally responsibility for control should be assigned to individuals and combined with authority. Indeed, to hold someone responsible in the absence of controllability is bad management. A test for completeness of *planning for control* is to check whether the three criteria for controllability are met.

It is interesting to note that Juran's principle for controllability is parallel to management expert Peter Drucker's notion of self-control; see Drucker (1954, pp.130-132). It is also interesting to note that the idea of controllability is related to Shewhart's and Deming's notion of special causes and common or systems causes. Special causes are those the operator can control, is responsible for, and have the authority to change. Systems causes are causes inherent to the system that only management can control and have the authority to change. Hence systems problems should be the responsibility of upper management, not lower level workers. Anything else is unfair, unreasonable and counterproductive; see Deming (1986).

Quality improvement

We now consider the third pillar of Juran's Trilogy, quality improvement. Rather than accepting chronic quality problems that translate into additional labor cost, materials and costly inspection, and waste in general, management should seek to permanently eliminate any waste. Management should aggressively pursue a strategy of innovation and quality improvement by permanently eliminating chronic problems. Such a strategy will typically have an extraordinary return on the investment. However, it requires that executives must be involved, that they make quality a strategic issue, break down barriers between departments, incorporate quality in performance evaluations and make quality a company wide effort.

Juran observed that quality improvement needs to be done via special projects. Indeed he has declared that "Quality is improved project-by-project and in no other way." This is an implicit recognition that the information needed for quality improvement is local and specific as discussed above; see Hayek (1945) and Wruck and Jensen (1994). He further outlined a universal roadmap for quality improvement that is analogous to detective work. The initial steps are first to gather information on needs, for example on a cost-of-poor-quality basis, then proceed to identify potential projects and select projects e.g., based on a cost-of-poor-quality ranking and finally organize project teams. Once the project teams are formed, they are asked to follow a six step road map: (1) review that the chosen project is important, (2) define the project mission and objective, (3) diagnose root cause(s), (4) develop a remedy and verify its effectiveness, (5) deal with organizational resistance to change, (6) institute controls to hold the gains. Those familiar with Six Sigma recognize this as a generic version of the Define, Measure, Analyze and Control (DMAIC) framework.

Upper management responsibilities

Many quality professionals have observed that unless upper management is fully involved, long term change efforts are futile. For executives to just pronounce support is not enough. Upper management must be thoroughly engaged throughout the journey. But what does that mean?

Juran's prescription is that the first step is to establish a quality council. A quality council is a group of top executives and upper managers that develops the quality strategy and guides and supports the implementation. The responsibility of the quality council is to launch,

coordinate and institutionalize annual quality improvement goals and plans. The council formulates improvement policies and priorities, establish metrics, establish a project nomination and selection process, establish a team selection process, provide resources, assure implementation, establish needed benchmarks to gauge progress, establish a progress review process, face up to employee apprehension from workers made superfluous, retrain or reassign workers, provide recognition and revise the reward system to accommodate for quality.

Councils may be established at several organizational levels. Large companies may establish councils on division as well as at corporate levels. At any level, the membership should consist of upper managers from line and staff. Members of higher levels often chair lower level councils. Senior manager membership is a must. Otherwise only “useful many” type problems are solved and not the “vital few” that produce the greatest return. The chair person should be the manager with overall responsibility and authority for the organizational unit. One member of the council should be the Director of Quality.

Summary and Conclusion

From a myopic perspective, one may get the impression that Quality Management is exclusively about the reduction of defects and costly inspection. Indeed, this is often the perspective upper management has of quality management programs. Hence, executives often reluctantly embrace such programs. Indeed, they typically fail to comprehend the strategic importance of quality management. In this paper we have provided a wider economic perspective that places quality management center stage in the context of economics and innovation.

The world is ever changing. With increased globalization and international competition, the rate of change has lately dramatically increased. This leaves few organizations, private or public, untouched. Innovation is the antidote. Continuous innovation in processes, products and services has become an imperative for survival.

After a discussion of the definition of quality and the firm specific economic effects of quality, we discussed the strategic and economic importance of innovation in a competitive market. In a dynamic evolving economy, changes constantly occur and, as in nature, only

those organizations that successfully adapt survive. Information, information processing and learning are keys to survival. Organizations that put a premium on educating their members in an inductive-deductive learning mode, on learning to effectively use tools for learning, and fully understand innovation processes have higher chances of success. Although the toolbox needs to be extensive, a core set of learning and innovation tools are those typically associated with quality management and industrial statistics.

Innovations can be broadly classified as either breakthrough or incremental. The Research and Development (R&D) Department with a well recognized system of staffing, management, budgets and controls is the conventional organizational structure for managing breakthrough innovations in either products or processes. In most firms the R&D departments are centralized and organizationally isolated from the daily activities of the operating departments.

Incremental innovations, on the other hand, typically apply everywhere and to everything — all products, all processes and all services, even the most routine administrative processes. Thus, incremental innovation activities ought to be dispersed throughout the organization. They need to be decentralized and take place at all levels of the organizational hierarchy and involve people that are intimately involved with the processes, high or low. Incremental innovations are often dismissed as marginal. However, this is a major misconception. Although incremental innovations individually may be marginal and often mundane from a technical point of view, their cumulative economic effects may be significant. In fact, breakthrough and incremental innovations feed off each other. Both are important! Any discussion of focusing exclusively on either breakthrough or incremental innovation is misplaced. The key point is that an organization will need continuous emphasis on both to succeed in a modern, competitive market economy.

Unfortunately, incremental innovations occur in most organizations through a haphazard process. Typically there is little formal management structure and staffing, few controls, meager budgetary support and little recognition and rewards. Where we typically find that the R&D function provides the organizational structures for successfully managing breakthrough innovations, firms typically do not have an organizational structure for managing the economically equally important incremental innovations. A centralized structure applied to managing breakthrough innovation is not appropriate. Rather, what is

needed is an organizational structure that permeates the entire organization; that is centrally coordinated but decentralized and reaches out to the most remote corners of the organization. We must recognize that the information that is needed to experiment with incremental innovations is often inductive in nature and must rely on what we have called local and specific information. Thus, incremental innovation is typically best carried out by people close to the processes, people with intimate knowledge of the problems so they can take full advantage of the “necessity is the mother of invention” effect. The best way to organize incremental innovations seems to be via a dedicated project team format. We argued above that the organizational framework that has evolved under the umbrella of Quality Management, exemplified by Juran’s Trilogy or the Six Sigma framework, is a useful answer to the question of how to organize for incremental innovation, with the proviso that quality is no longer limited to defects but refocused to the broader perspective of continuous development and use of new knowledge to economically satisfy customer needs.

We think it would be wise if we referred to quality as a part of the general concept of innovation. Innovation signifies something important and optimistic. Innovation is clearly recognized by executives as a core strategic issue. Quality often has a negative connotation. Defects are a nuisance, something best not talked about. Innovation with a subsidiary concept of quality would be easier sell to upper management. It would also help anchor quality in business school curricula. That would hopefully secure quality a long-term role in business education and subsequently in business practice.

We claim that quality technology and statistics are the knowledge economy’s key tools for systematic innovation. When we look at examples of the Six Sigma projects, we are increasingly convinced that it is unproductive to describe them as “quality improvement.” What we do is to “*create better value for customers.*” Such projects are more appropriately call innovation projects. In fact, Six Sigma with its tools, roadmaps and management processes, essentially is a process for systematically selecting, scheduling and carrying out innovation projects.

Another reason for calling what we do innovation is that quality in most CEO’s perception is an irritant and certainly a non-strategic issue — mostly something they would rather see go away and like to delegate. In other words, quality and defects has a negative connotation. Innovation on the other hand is about new and better things – is optimistic – is part of the

future – has a positive economic connotation – is a strategic issue; something executives like to be involved in! Semantics and perceptions do matter!

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CHAPTER THREE

Organizational excellence in healthcare

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Introduction

Healthcare, as any other service operation, requires systematic innovation efforts to remain competitive, cost efficient and up to date. In this paper, we outline a methodology and present how principles of two improvement programs, i.e., Lean Thinking and Six Sigma, can be combined to provide an effective framework for producing systematic innovation efforts in healthcare. The benefits of this approach are that healthcare cost increases can be kept in control, while quality is improved, and better healthcare is provided. The approach is illustrated by a longitudinal case study of a period of five years in a hospital.

The Institute of Medicine (established in 1970 under the charter of the National Academy of Sciences to provide independent, objective, evidence-based advice to policymakers, health professionals, the private sector, and the public in the United States) has produced two reports demonstrating healthcare has serious patient safety and quality problems and is in need of fundamental change (Institute of Medicine, 2000 and 2001). Care processes are poorly designed and characterized by unnecessary duplication of services and long waiting times and delays. Costs are exploding and waste is identified as an important contributor to the increase in healthcare expenditures. As a result healthcare consistently does not succeed to meet patient's needs. To better serve the needs of patients, healthcare systems have to be redesigned. By issuing the reports, the Institute of Medicine has put quality management strongly on the agenda of healthcare organizations. Delivering low quality of care was considered unacceptable. This obligation may cause more (financial) stress because for

example in the Netherlands the hospital funding system pays fixed prices per patient regardless the quality of care delivered. Hence delivering high quality does not generate more income. However, the observations of the Institute of Medicine with respect to process optimization and waste reduction offered opportunities for healthcare organizations with respect to cost containment.

World wide the cost of medical care is also increasing at an alarming and unsustainable rate. Admittedly, a significant percentage of these cost increases can be attributed to aging populations and technological advances. Those two causes are inevitable facts of the technological and demographical developments of modern society. As such, they are largely beyond our control. However, another significant source of healthcare cost increases can broadly be characterized as unnecessary operational inefficiency. This we have more control over. Inefficiency we can change. If we do, we can provide more affordable and better healthcare for a large percentage of the population. Some operational inefficiencies are associated with the direct medical service delivery process. Others are associated with the administrative, logistical and operational side of the healthcare delivery system. Both areas can benefit from systematic process innovation activities.

We would not be surprised if some object to the notion of industrialized healthcare delivery. However, industrialization is essentially a conversion of artisan methods to more efficient, cost effective, streamlined systems for the delivery of products or services (Levitt, 1976; Heskett, Sasser, and Schlesinger, 1997). During the past century, industry deployed a large arsenal of tools and innovation approaches to achieve high levels of operational efficiency. Economic history indicates that efficiencies in industry were obtained primarily as the cumulative effect of a large number of incremental improvements (Rosenberg, 1982 and Bisgaard, 2006). Lean Thinking and Six Sigma are two process innovation approaches that currently are popular in industry (Womack, Jones and Roos, 1990; Harry, 1997). Both provide a systematic approach to facilitate incremental process innovations. Lean Thinking emerged within the Japanese automobile industry after World War II (Ohno, 1988), but can be traced back to the early days of the Ford Motor Company (Ford and Crowther, 1926). Similarly, Six Sigma, originally introduced by Motorola, is the culmination and synthesis of a series of century long developments in quality management (Snee, 2004) building on a number of other approaches, in particular, Juran's Trilogy (Juran, 1989). Lean and Six Sigma have gone through parallel developments in recent years. Originally applied to the

manufacturing environment, both approaches are now also used widely in administration and service areas (George, 2003; Snee and Hoerl, 2004; De Mast, Does and De Koning, 2006). The latest development is a synthesis of the two approaches (Hoerl, 2004; De Mast, Does and De Koning, 2006). In this paper, we explore the integration of these two approaches in the healthcare setting.

In the remainder of this paper, we first briefly outline the key principles of Lean Thinking and Six Sigma. Next, we explore the concept of quality in healthcare. Based on these two sections, we discuss how in healthcare we may organize quality management. We demonstrate that Lean Six Sigma can solve the problems mentioned by the Institute of Medicine by improving care processes, eliminating waste, reducing costs and enhancing patient satisfaction. Finally, we draw some conclusions about the future possibilities of Lean Six Sigma.

The integration of Lean Thinking and Six Sigma

Lean Six Sigma is a widely applied program for company wide quality improvement (see for an introduction De Mast, Does and De Koning, 2006). It is the synthesis of Six Sigma and Lean. Six Sigma was developed by Motorola in the 1980s, but gained momentum after its adoption by General Electric in the mid 1990s (Harry, 1997). Lean is an outgrowth of the Toyota Production System (Ohno, 1988).

We start with a description of Six Sigma. We first elucidate the organizational structure prescribed by Six Sigma. The key principle is that projects are run by people with intimate and detailed understanding of the process and problem at hand. That implies that mostly projects are executed by people from the line organization (typically operations), and not by staff personnel (let alone external consultants). The motivation is of course that line persons are aware of the treacherous details that are part of the problem, its solution, and that pose limitations on improvement directions. Moreover, since improvement actions ultimately are handed over to the line (to the employees, operators and process engineers), it is important that the solution is such that they can work with it, and that they accept it. Typically, a Six Sigma project is run by a team consisting of:

- One or more Black Belts (BBs) and/or Green Belts (GBs), who are typically selected from middle management. They are thoroughly trained in becoming effective project

leaders, and they work either full-time or at least a considerable part of their time on the project.

- Several Yellow Belts (YBs): persons that the BB or GB calls in as advisors, typically operators or employees who execute the process, but YBs could as well be technical specialists, marketing specialists, or whoever the BB or GB thinks could bring in relevant knowledge. On a limited number of occasions input from the YBs is requested, and they may be called upon to collect data.

The difference between a BB and a GB is interpreted differently in various organizations, and the precise role of a BB and a GB should be adapted to the situation in one's own organization. In some companies, a BB refers to project leaders who work full-time on their project, whereas GBs work two or three days per week on their project. BBs then run the tougher projects. But a different approach is to have projects executed by a full-time BB from a staff department, assisted by one or two part-time GBs from the line.

The above implies that improvement projects are not run from a central staff department (such as quality assurance or troubleshooting). Rather, the idea is that GBs and BBs are dispersed over the organization. The danger of such a decentralized approach to improvement is that there is no integration of activities, and that efforts are wasted on issues that are not of strategic importance. For this reason, projects are selected and monitored by so-called Six Sigma champions. The champion is the project owner, in the sense that he is responsible for the process that the project aims to improve. Preferably, the champion is also the hierarchical superior of the BB or GB. Loosely said, the champion owns the problem, and hires the BB and GBs to solve it. Given his position in the company, the champion should be able to relate the project to the bigger picture of the company's strategy and other initiatives. During its execution, a project is reviewed several times by the champion, thus allowing him to adjust the direction that the BB or GB chooses. This control mechanism is intended to assure that the project remains focused on issues of critical importance to the company. The structure just described has firm roots in the scientific literature about theory of the firm. Jensen (1998) discusses the merits of this organizational structure in dealing with quality improvement (albeit in the case of Total Quality Management).

Part of theoretical grounding of Six Sigma may be found in De Mast and Bisgaard (2007). They show that several elements in Six Sigma's methodology constitute its sound basis in scientific methodology. Central to a scientific attitude towards process improvement is the idea that to control a system we have to understand how it works. Without understanding of the mechanics of a problem, we are likely just fighting symptoms and applying makeshift solutions. To understand a system means: to have a theory that relates the system's behavior to its causal factors. De Koning and De Mast (2007) draw the conclusion that "Six Sigma does not offer standard cures, but a method for gaining understanding of the causal mechanisms underlying a problem".

The next principle is that we have to define problems in a crystal clear, operational form before attempts at finding a solution are made. Targets and objectives are often formulated in abstract terminology: "to become a number one supplier", "to be best in class", "to become an empowered organization". Although such objectives are useful in stating an intention and providing a sense of direction, they are too vague to manage upon. Objectives should be translated into a tangible and measurable form. An objective is operationally defined if its formulation is so tangible, that one can determine precisely and unambiguously whether the objective is met. In Six Sigma problems are translated into measurable quantities, called critical to quality characteristics (CTQs). A commonly used tool to go from a project definition to these specific and measurable CTQs is the CTQ flowdown (De Koning and De Mast, 2007). It aims to make explicit and structure the rationale underlying the project. Furthermore, it shows how CTQs relate to higher level concepts such as performance indicators and strategic focal points. Downward it shows how CTQs relate to measurements.

A third cornerstone of Six Sigma's methodology is the emphasis on quantification. Customer satisfaction versus production costs, crime prevention versus privacy of citizens, pollution and noise nuisance of airports versus economic interests: most interesting problems are trade-off problems. The issue is not "either / or", but "how much of one, and how much of the other?" If problems are not quantified, their trade-off nature is obscured, and people tend to treat them as either/or-problems (and frequently politicize them in addition).

The fourth principle indicates that before attempts are made to solve the problem, a data-based diagnosis is needed. In Six Sigma this takes the form of a process capability study. This shows the nature and size of the problem. The nature of the problem guides the

direction of the improvement actions, and the magnitude of the problem facilitates prioritization. The importance of prioritization cannot be overemphasized. The saying has it that “every ounce helps”, but this proverbial wisdom does not work in business. With unlimited time and resources one could bother about ounces, but in reality one must focus on the strategically important issues. Or in Six Sigma’s terminology: each minute spent on the trivial many issues is a minute lost; it is the vital few issues that determine the success of a project. Without data-based diagnosis improvement actions are likely to be wasted on many trivialities, not on the few drivers of performance.

A final element of Six Sigma is its emphasis on data-based testing of ideas and improvement actions to reality. In a world where no-one is likely to have sufficient knowledge to be consistently right the first time, feedback is crucial. One should experimentally verify one’s ideas for two reasons. In the first place, to get rid of misconceptions, misjudgments and myths. And secondly (and equally important), to fine-tune a coarsely developed idea to the specifics and complications of the real life situation. Ideas that are not tested before they are implemented are often either misconceived, or appear to be based on a wrong notion of proportions and priorities, or fail because of the many ignored growing pains.

The principles outlined above were put in an operational form in the form of the DMAIC roadmap. It employs five phases: Define (D), Measure (M), Analyze (A), Improve (I) and Control (C). The roadmap guides BBs and GBs through their projects, helps them ask the right questions, shows them when certain tools and techniques can be used, and forces them to organize their findings in a structured manner. The five phases are briefly characterized as follows:

1. Define: Select project and BB or GB.
2. Measure: Make the problem quantifiable and measurable.
3. Analyze: Analyze the current situation and make a diagnosis.
4. Improve: Develop and implement improvement actions.
5. Control: Adjust the quality control system and close the project.

In the Define phase, a charter is drafted which includes a cost-benefit analysis. If the cost-benefit analysis meets the company-established thresholds, the charter will be accepted and the project will continue through the DMAIC process, i.e., the project becomes scheduled for solution and assigned to a team headed by a Green or Black Belt and reporting to a

Champion. In the subsequent Measure phase, baseline data is assembled and the diagnosis is started in earnest. The problem is translated into quantifiable terms via Critical-To-Quality (CTQ) characteristics. The analysis phase continues the diagnosis and involves an identification of possible causal relationships between inputs and the CTQs. Once the diagnosis is completed, the team proceeds to the Improve phase and suggests a solution to the problem. The Green or Black Belt designs and implements process changes or adjustments to improve the performance of the CTQ. Finally, in the Control phase, control systems are developed to assure that improvements are maintained and the new improved process can be handed over to the day-to-day operations. Each of the five phases of DMAIC involves detailed roadmaps that help to guide project leaders through the execution of an improvement project. These phases are discussed in depth in De Mast, Does and De Koning (2006). Each of the MAIC phases is broken down in three steps. For each step a list of end terms is defined as well as a set of techniques that are typically used to achieve them. BBs and GBs report the progress of their projects following these steps, which makes it easy for program management to track progress.

Hence Six Sigma elevates problem-solving and quality improvement to a more professional level by providing a method that follow scientific method and by training BBs and GBs in an attitude that can be described as scientific. Improvement actions are not based on perception and anecdotal evidence. But neither are they based on the notion of the omniscient specialist who, sitting behind his desk, derives a remedy by making clever deductions from his expert knowledge. The attitude that Six Sigma represents, is an adventurous and open-minded eagerness to go out to the process under study and learn from it, and the willingness to correct one's own misconceptions on the basis of experimental results and empirical feedback. That is in a nutshell the tenor of Six Sigma's methodology.

Lean is not a method such as Six Sigma's DMAIC method. Lean offers only very limited techniques for analysis and diagnosis. Instead, Lean should be seen as a collection of best practices, which have mainly been copied from the Toyota Production System (Ohno, 1988). The book by Womack, Jones and Roos (1990) introduced these best practices in the Western world. The analysis part of Lean consists of the identification of waste in the process. Following the steps of the process, one identifies redundant work, overcapacity, needless complexity, inefficient routing, and so on. The results are visualized in a value stream map. A value stream map is a process flowchart extended with information about speed,

continuity of the flow, work in process, et cetera. Moreover, it specifies which work adds value and which does not. Upon identification of instances of waste, Lean applies standard solutions such as visual management, 5S, cellular production, pull systems, line balancing, single-piece flow and rapid changeover (Womack and Jones. 2003).

Lean and Six Sigma are complementary. Lean can benefit from the management structures that Six Sigma offers: Six Sigma's project-by-project approach, led by BBs and GBs from all over the organization, is an effective organization form for getting Lean principles applied. Further, Lean lacks a method for diagnosis, and has only limited methods for analysis. It is rather one-sidedly focused on problems with process throughput, which it tries to solve with a set of standard solutions. Lean does not analyze the economic performance indicators of a process to establish where the main points of improvement are, but focuses on inefficiencies in process flow, even if that is not where the main opportunities for improvement are. Six Sigma's DMAIC method offers a thorough roadmap for analysis and diagnosis, driven by powerful tools and techniques. Six Sigma is a general problem solving framework, however. Given the ubiquity of process inefficiencies, Six Sigma projects — especially the ones pursuing efficiency improvement and speed — can benefit from the standard solutions that Lean offers. The key to a successful integration of Lean and Six Sigma is to regard Six Sigma's project management and its DMAIC roadmap as a general framework for problem solving and process improvement. But within this framework, Lean's standard solutions and mindset have found their place.

From now on we shall not make a difference between the programs Six Sigma and Lean Six Sigma.

Concept of quality in healthcare

Quality in healthcare can be traced back to Hippocrates (450-370 B.C.) who formulated the oath for medical practice in ancient Greece (see for an overview Nabitz, 2006). With the oath, the teacher-student relation was defined, specific medical procedures were included and excluded and privacy and rights of patients were formulated. In the renaissance Vesalius (1514-1564) and Paracelsus (1494-1541) represented a rational, analytical and observational approach to medicine and also proclaimed an oath to guarantee the integrity of doctors. During the 19th century the oath was modified with more emphasis on patient rights and

humanistic aspects and a code of conduct for the medical professional was added. After World War II, the World Medical Association formulated nine prescriptive rules of conduct and in 1995 patient centeredness and standard of practice and care were introduced which turned the oath into a professional quality manifest. Besides Hippocrates, the English nurse Florence Nightingale (1820-1910) is seen by many experts as an important figure for the roots of quality in the field of healthcare.

Apart from these issues of quality in healthcare, it is generally accepted that there is no single or ultimate definition. Each industry or research branch has its own definition. Garvin (1984) has identified five major approaches of defining quality in industry; and most existing definitions of quality fall into one of these approaches:

- Transcendent approach of philosophy: Quality is innate excellence and cannot be defined;
- Product-based approach of economics: Quality reflects the presence or absence of measurable product attributes, and more quality (attributes) means more costs;
- User (client)-based approach of economics, marketing, and operations management: Individual consumers have different wants or needs, and those goods that best satisfy their preferences have the highest quality;
- Manufacturing-based approach: Quality as conformance to requirements, so that improvements in quality (reductions in defects) lead to lower costs;
- Value-based approach of operations management: A quality product provides performance at an acceptable price or conformance at an acceptable cost.

Garvin concluded that a company should not rely on a single definition of quality but rather should cultivate all five quality approaches. Consideration of the five approaches to quality in healthcare can illustrate the power of Lean Six Sigma. The transcendental approach, unfortunately, is often used by healthcare professionals, but an inability to define or measure quality will severely impede quality improvement initiatives. Lean Six Sigma stimulates healthcare workers to define, measure, and improve aspects of quality. Our experiences with Lean Six Sigma at several hospitals have shown that its focus on data and statistical verification is an excellent counterbalance to the subjective and intuitive (transcendental) approach.

In terms of the product-, user-, and manufacturing-based approaches in healthcare, we observe a very interesting phenomenon. A patient is not only our client but also our product (we replace parts), and is the most important element of our manufacturing (i.e., healthcare) process—thereby representing three approaches to quality at the same time. Therefore, we are obliged to manage all three quality approaches during the entire healthcare process. This largely explains the complexity of our work and the vast challenges we face in quality management in healthcare.

We once asked the Master Black Belt in a hospital, who had had five years' experience at a large truck manufacturing company, the following question: “What would happen if the future truck driver is on the truck you are assembling during the entire production process, asking questions, making new requests, adding new wishes, and being annoyed by waiting times and paint spilled on his trousers?” He admitted that the entire plant would become a mess! This, however, represents daily practice in every hospital, and explains much about the origins of a “quality chasm” in healthcare (cf. Institute of Medicine, 2001).

Because the patient is part of the manufacturing process, improving the quality of the healthcare process will manifest by e.g., shorter waiting times and length of stay, a reduced number of examinations and a decrease in the number of defects, such as errors, unnecessary interventions and complications. Hence improving quality will lead to lower costs and higher quality of care. Furthermore, Lean Six Sigma links the demands of the patient to product attributes. This prevents healthcare workers to deliver care patients do not expect to be delivered and this also reduces costs. So especially in healthcare Lean Six Sigma seems to work both ways; costs are eliminated and quality is improved.

The fact that the patient is part of the manufacturing process also provides an explanation for the kinds of patient safety problems cited by the Institute of Medicine reports. In industry, a high-quality product can be manufactured regardless or even because of the fact that a large number of (imperfect) products are rejected. The customer only experiences the high-quality product and is neither aware of nor affected by the undesired output of an imperfect manufacturing process. Yet unlike industry, where a defective product can be rejected without any problem, in healthcare an imperfect process that produces defects and rework directly affects the patient's safety. Therefore, Lean Six Sigma can be used to improve

patient safety by reducing the number of defects (for example, medical errors, see Buck, 2001) produced by healthcare processes.

Finally, in terms of the fifth, value-based approach, it is evident that contrary to industry, pricing mechanisms do not function well in healthcare. In general, patients just want maximum quality and insurance companies, government, and other payers want to pay the lowest price. In general, reimbursement systems do not generally explicitly reward additional quality of care. As a result, the hospital is torn between these conflicting demands. The only sensible policy for any hospital to pass both Scylla and Charybdis is to maximize efficiency while at least preserving quality of care. Again, this means investing in healthcare process improvement, which, we contend, will invariably lead to lower costs and higher quality of care. Improvement of patient safety can be viewed as a valuable “side effect” of Lean Six Sigma. In the Netherlands, policy makers have defined patient safety as an issue on its own requiring separate management systems. Yet by taking the patient as the starting point, Lean Six Sigma provides a balanced approach to quality and safety.

Quality management in healthcare

There are many activities in organizations relating to quality and efficiency, and they should not all be organized in the same way. Juran (1989) proposed a generally accepted distinction of activities related to quality into planning, control and improvement.

- *Quality planning* consists of the determination of what customers want and the development of the products, services and processes which are required to comply with these needs. This work is typically organized in specialized staff departments.
- *Quality control* consists of the on-line and real time monitoring of production or service delivery, the detection of irregularities, and the reaction to these irregularities. A typical control system encompasses elements such as a control plan (or quality control handbook), control points and loops, and inspections. Quality control is reactive in nature and deals particularly with what Juran (1989) calls *sporadic problems*. Its organization should be integrated with the regular (production, backoffice, service delivery, or other) process, and nowadays its execution is typically the responsibility of the people who execute the process (Does, Roes and Trip, 1999).

- *Quality improvement*, finally, is the organized and systematically pursued improvement to increase quality and efficiency to unprecedented levels (Juran (1989) calls this *breakthroughs*). Unlike quality control, quality improvement is not an on-line affair, but should be executed in the form of projects (what Juran (1989) calls the *project-by-project nature* of quality improvement). Such improvement projects typically tackle what Juran (1989) calls *chronic problems*. They (e.g., recurring stagnations, constant levels of waste, poor service, scrap) should be eliminated once and for all.

A major part of the problems in processes can be prevented, however, by taking possible problems during manufacturing and operations into account during product and process development. In order to apply the basic principles of Lean Six Sigma in product and process development, an adaptation of the methodology has been developed. This adapted methodology is called Design for Six Sigma (DfSS). DfSS is the methodology for quality planning.

The distinction between control and improvement, sometimes described as on-line vs. off-line quality management, is important. Quality control's main intent is to defend the status quo by reacting to problems ("fire fighting"). If, in the course of this operation, an opportunity is encountered to improve the process then it is of course seized, but the reactive and opportunistic approach of control is completely different from improvement, which searches for improvement opportunities systematically. Examples of approaches for quality improvement are Taguchi's off-line quality control, process optimization using design of experiments, business process reengineering (BPR), and Lean Six Sigma's DMAIC methodology. Regular Lean Six Sigma projects are mainly conducted in the operational part of organizations (e.g., manufacturing, nursing, accounting and sales), where the routine tasks are carried out. Stagnations and structural problems are tackled; improvements often are found in the form of a control system or modifications in the standard way of working. Occasionally a redesign of part of the process is needed.

Hence according to Juran (1989), quality management consists of three aspects; quality planning, quality control and quality improvement. In healthcare a similar approach has been

suggested (Donabedian 1985). Next we discuss how the three aspects of quality management may be implemented in a hospital.

Quality Planning in Healthcare

Quality planning is a structured process for developing (healthcare) products that ensure that customer needs are met by the final results (Juran and Godfrey, 1999). Looking at the “bi-personality” client and the five approaches to define quality, a hospital has choices to determine the level of quality it wants to deliver. First according to the value-based approach a hospital has to contain its prices regardless the level of quality it intends to deliver. It is nearly impossible for any insurance company to charge their clients higher insurance contributions to pay higher prices to the hospital. This mechanism also affects the product-based approach. More quality (so more attributes) can only be delivered within the limitations of the fixed prices paid to the hospital. So in most cases the more expensive and higher quality hip prostheses will not be implanted, in favor of the medium priced, medium quality prostheses. The same goes for high quality pace makers, costly endoscopic procedures or expensive innovative medication. So product quality (attributes) in healthcare has to be optimized, not maximized. Fortunately, the manufacturing-based approach offers much more strategic opportunities. Here we can serve both masters at the same time. Since the patient is participating in the healthcare process, reducing errors, waiting times, waste, et cetera, directly increases the patients’ quality perception. In addition, optimizing the healthcare process not only increases quality; it reduces costs as well so we also can satisfy the legitimate demands of healthcare insurers to contain the prices. The user-based approach offers some interesting opportunities as well. Patients in most cases are not aware of the exact level of healthcare product quality. There are, however, a number of features that patients would like to find during their stay in a hospital and that can be added without (many) additional costs. The Dutch proverb: “A smile goes for free”, perhaps illustrates best how a highly appreciated client friendly approach can be achieved with little effort. The same goes for client friendly visiting hours, quality food, communication facilities and so on. So by exploring the user-based approach a hospital can create a major competitive edge with limited investments.

Quality Control in Healthcare

Quality control is the universal managerial process for conducting operations to provide stability, to prevent adverse change and to maintain status quo (Juran and Godfrey, 1999). The ISO 9000 series are standards that define requirements (9001) and guidelines (9004) for quality management systems. ISO 9000 standards are successfully used and adopted worldwide in industry and service organizations (Marquardt, 1999). The International Organization for Standardization (Geneva, Switzerland) first issued the standards in 1987. In 1994 and in 2000 the ISO 9000 series were revised. The standards are generic, which means that the same standards can be applied to any organization, large or small, whatever its product or service, in any sector or activity whether it is a business enterprise, a public administration or a government department. The ISO 9000 standards are founded on the concept that the assurance of consistent product or service quality is best achieved by simultaneous application of product standards and quality management system standards. ISO takes a systems and process approach to improve organizational and financial performance with a specific focus on quality management, process control and quality assurance techniques to achieve planned outcomes and prevent unsatisfactory performance or non-conformance. The standards represent an international consensus on good management practices with the aim of ensuring that the organization can continuously deliver the product or service that:

- Meets the customers' quality requirements;
- Meets applicable regulatory requirements;
- Enhances customer satisfaction;
- Achieves continuous improvement of its performance in pursuit of these objectives.

In healthcare, the application of the ISO standards is not yet very common and subject for debate. The usefulness of ISO 9000 standards in healthcare was outlined earlier (Carson, 2004). World wide application of ISO in hospitals has been reported on a limited scale (Van den Heuvel, Koning et al., 2005). The ISO 9000 guidelines for healthcare, called ISO IWA 1, can perhaps contribute to a better appreciation and use of ISO 9000 in healthcare (Reid, 2004).

The scope of ISO 9000 is much broader than quality control and quality assurance. Representing consensus on good management practices it covers in fact all aspects of quality

management as mentioned above. Quality control and assurance, however, are perhaps the most significant characteristics of an ISO quality management system. Quality planning is covered equally well because ISO is almost synonymous with meeting customer requirements. As we have mentioned above in the user based approach, meeting customer requirements offers great competitive opportunities for any hospital. Although ISO advocates and supports quality improvement as well, it does not offer a real methodology. Hence, the need to implement an additional system exists. Six Sigma and ISO have proven to be highly complementary in other organizations (Warnack, 2003).

Quality Improvement in Healthcare

As we have explained before, Lean Six Sigma is a company wide quality improvement approach that aims at optimizing processes while reducing defects and costs. It is developed and widely used in industry. Recently, the application of (Lean) Six Sigma has also been suggested in healthcare (Barry, Murcko and Brubaker, 2002). A number of healthcare systems have implemented (Lean) Six Sigma (Thomerson, 2001; Sehwal and De Yong, 2003; Van den Heuvel, Does and Bisgaard, 2005; Christianson et al., 2005; De Koning, Verver et al., 2006). Especially, in healthcare (Lean) Six Sigma works both ways; costs are eliminated and quality is improved (Kooy and Pexton, 2002).

A real life example: Implementation of ISO 9000 and Lean Six Sigma in a hospital

The Red Cross Hospital (RCH) is a middle sized general hospital with 384 beds and about 1,000 employees located in Beverwijk in The Netherlands with an annual budget in 2004 of 90 million US Dollars. The RCH is located in a very competitive environment having five other hospitals within a 20 kilometers range. The Dutch hospital funding system pays fixed prices for admissions, first contacts and day care treatments. Recently, the government initiated the gradual introduction of a new funding system based on so-called Diagnose Treatment Combinations which is similar to the Diagnose Related Groups (DRG) system. Both systems are applied simultaneously at this moment and show great resemblance with a capitation system. The consequences of both systems are that treating more patients provides more income, but delivering more care, higher quality or providing better service, does not. Considering the competitive environment and the characteristics of the Dutch funding system the RCH has chosen as main strategic goals a moderate growth and minimization of

costs, both to provide continuity. Furthermore, the RCH aims to optimize quality of care, within the limitations of the fixed prices per episode, in order to attract more patients. Capitation systems are thought to be successful in containing costs, but might be a threat to healthcare quality (Berwick, 1996). Cost containment without effective quality assurance systems can endanger quality (Bliersbach, 1988; Blumenthal, 1996). To be effective, (total) quality management is considered an essential part in the strategic plan of any organization (DeFeo, 1999). So given the characteristics of the Dutch funding system and the strategic goals, implementing a well functioning quality management system was considered of vital strategic importance to the RCH.

The implementation of the ISO quality management system started in January 1999. Processes were described and analyzed by middle management. If possible quick wins were implemented. Once the process was improved, it was described in a standardized manner called a procedure. The next step was to make protocols that give a more detailed description of a specific task or activity. Processes and activities were only described when this was necessary to provide a sufficient level of quality assurance. The outcomes were put together in a Quality Manual which contains descriptions of the organization, the divisions, the quality system, the policies of the RCH and its current set of performance indicators. To complete the quality management system the RCH implemented an internal audit system. Approximately fifty co-workers were trained to audit procedures and protocols in various departments. Processes are to perform the way they should and if not, corrective actions have to be taken. The flow of opportunities to improve the system has to lead to actual improvements. The internal and external audits have to either confirm that the system functions properly or provide input to further improvements. At the end of 2000, one and a half year after starting the implementation, KEMA, a Dutch certification institute, performed the first external audit and the RCH received the ISO 9002:1994 certificate for the entire hospital organization. In the next years we adapted our quality management system to fit the requirements of the revised ISO 9001:2000 standards. These efforts were successful too and the RCH obtained an ISO 9001:2000 certificate in October 2003. Until this moment the RCH is the only hospital in the Netherlands that obtained an ISO certificate for the entire organization.

Initially, the quality improvement approach appeared to work reasonably well. A number of projects were completed successfully. However, it was recognized that management control

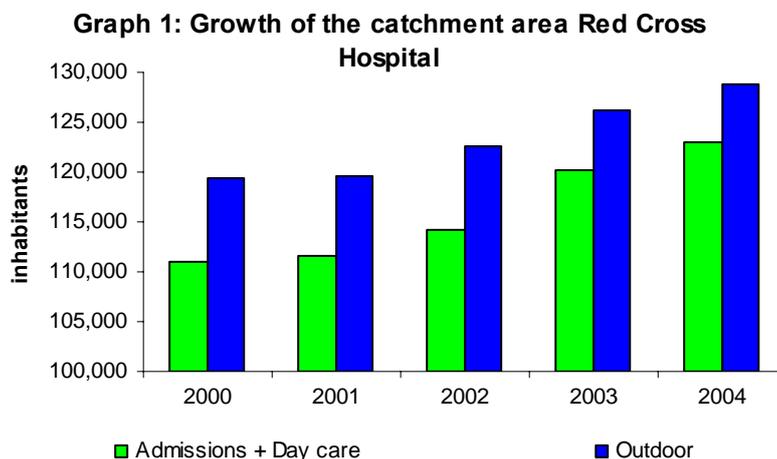
of the projects was not effective. Frequently, the project goals were poorly aligned with the hospitals strategic goals. There was no systematic way to determine the relevancy of a project and its contribution to the long-term strategy. Furthermore, it was difficult to make go/no go decisions for the projects. Most of the time projects were initiated because it was “felt” that they would make a contribution to quality of care. RCH was also not able to assess potential savings of alternative projects. Once a project was started, management did not have reliable information about its status until it was finished. In summary, management was navigating blindfold (Van den Heuvel, Does and Bisgaard, 2005 and Van den Heuvel, Does and De Koning, 2006).

RCH then decided to implement Lean Six Sigma as the quality improvement method. The Institute for Business and Industrial Statistics at the University of Amsterdam supported the implementation of Lean Six Sigma in the RCH. It was started in 2001 with a one-day introduction training for management and directors. In order to implement Lean Six Sigma successfully, some apparent minor adaptations were necessary. The first group of fifteen Green Belts started their training in September 2002. Seven projects were initiated. To stimulate commitment, participants were allowed to choose the subject of their projects. In February 2003 the second group of Green Belts started. The hospital directors incited managers to train a sufficient number of Green Belts and maintain a substantial program of new projects. Gradually, project selection was taken over by management to ensure alignment with the strategic goals of the hospital. As the number of projects increased the necessity for co-ordination and management of the Lean Six Sigma program became evident. It was observed that Green Belts faced difficulties with closing their projects. Therefore RCH appointed a Master Black Belt to set up a management control system to evaluate progress and to support Green Belts in finishing their projects. The Master Black Belt organized the necessary training programs and ascertained that once Green Belts completed a project they initiated another project. In September 2004, the fifth group of Green Belts began with their projects. Co-workers show more and more interest in following the Green Belt training. RCH has consistently started new groups of approximately fifteen employees every six months. Participants emerge from different departments and disciplines within the organization. RCH has been able to initiate Lean Six Sigma projects in almost any unit and related to every discipline in our hospital (Van den Heuvel, Does, Bogers and Berg, 2006). The introduction of Lean Six Sigma in the RCH has stimulated a culture of awareness to find opportunities to improve healthcare delivery and also to take responsibility to

eliminate shortcomings. In the past, decisions were too often based on assumptions and feelings as well as inaccurate and incomplete information. By using Lean Six Sigma, co-workers take responsibility and provide management with solutions based on facts and data.

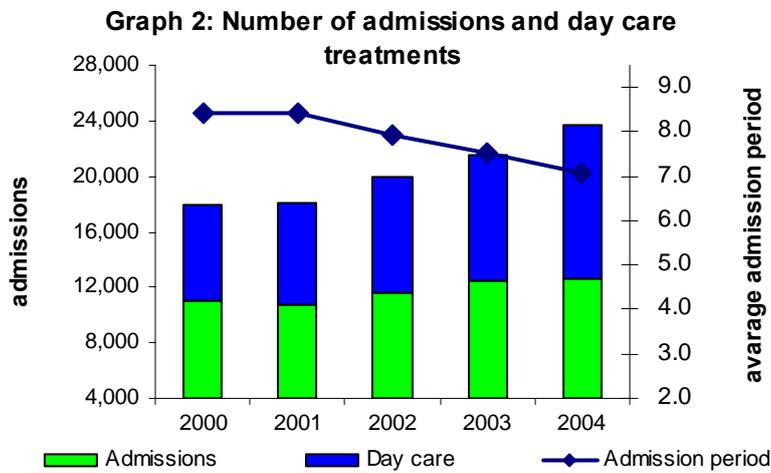
At the end of 2004 RCH had 63 employees that were fully trained as Green Belt. At that moment 44 projects were started and 21 projects were completed successfully. The total net savings amount to 1.4 million US Dollars. These amounts are cumulative savings on an annual basis. At the beginning of 2004 the RCH anticipated serious financial problems. Management embraced the Lean Six Sigma organization to initiate an additional number of smaller “quick-win” projects (low hanging fruit) instead of discharging personnel. This additional program resulted in extra savings up to 1.3 million US Dollars. The Annual Report of 2004 consequently showed an, in our history, extraordinary net result of 2.7 million US Dollars (Van den Heuvel, Bogers et al., 2006).

Quality management using ISO and Lean Six Sigma enhanced the performance of the RCH and helped RCH to achieve the strategic goals. We will show the results of a set of performance indicators from 2000 through 2004. A complete account of the results is given in Van den Heuvel, 2007.

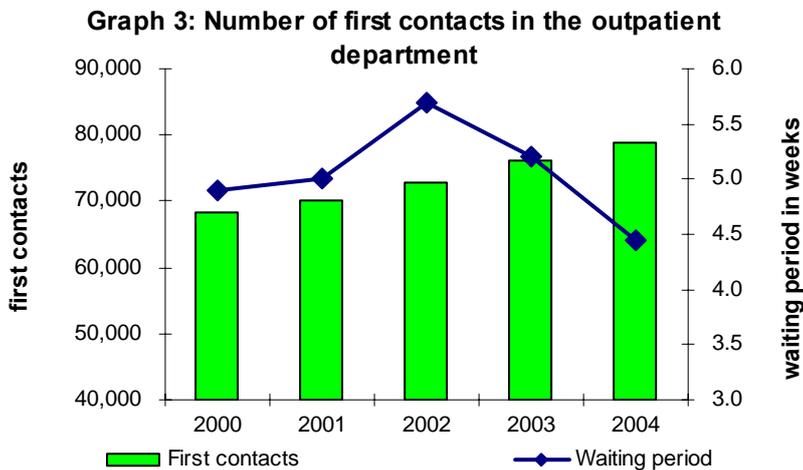


Graph No 1 demonstrates the growth of the catchment area of the RCH, or in other words the number of people that are inclined to go to the RCH. The catchment area is a calculated parameter based on the number of admissions and outdoor contacts and gives an indication

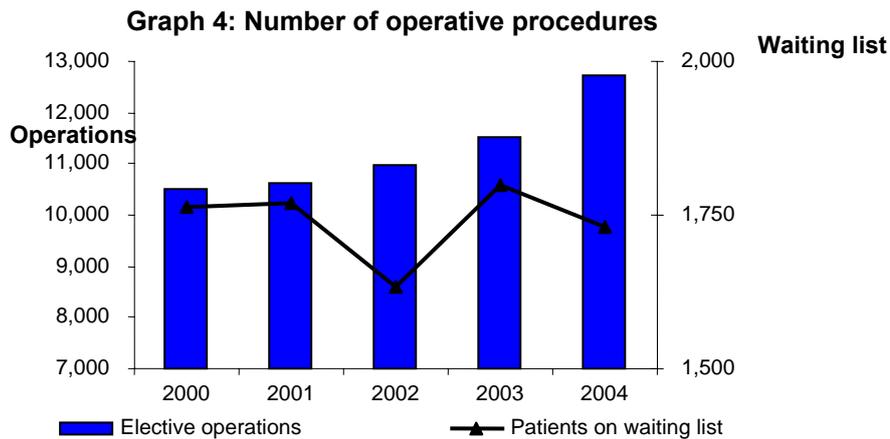
of the size of the market share. The growth as seen in this graph demonstrates RCH has been able to achieve one of its major strategic goals.



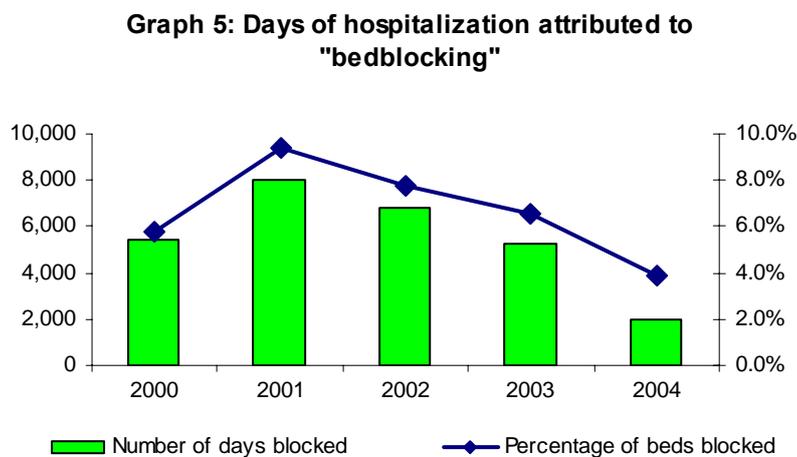
Graph No 2 demonstrates the number of admissions, day care treatments and the overall length of stay. The growth in the last three years has been made possible by a substantial reduction of the length of stay. This could be achieved by a number of Lean Six Sigma projects and the implementation of Clinical Pathways (guidelines to cure and care patients).



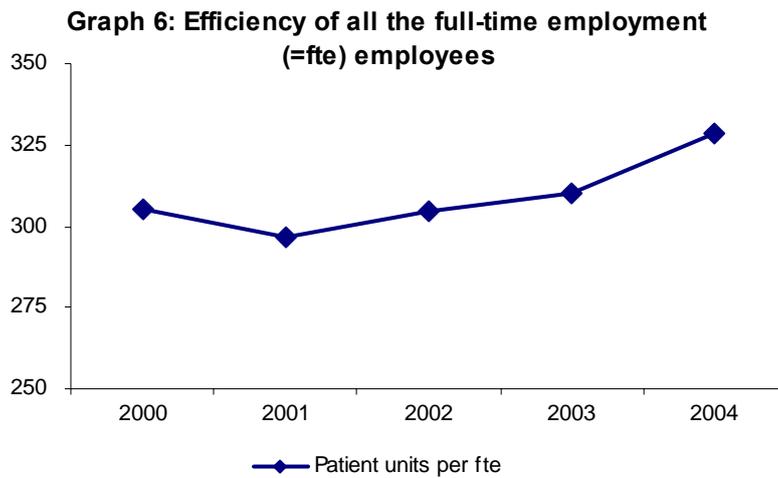
Graph No. 3 demonstrates the growth of the number of first contacts in the outpatient department and the waiting period (admission time). This growth has been made possible mainly by projects related to reducing the number of revisits and introducing elements of one stop shopping (i.e., all treatments on the same day).



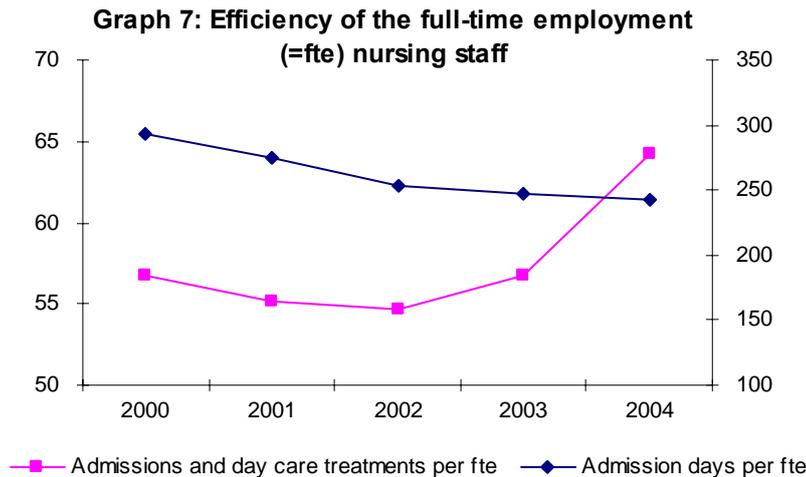
Graph No. 4 demonstrates the number of operative procedures and the number of patients waiting for an operation. In 2001 management stated that the number of surgical operations could not be increased any further. By starting a Lean Six Sigma project, however, it appeared possible to increase the number of surgical operations with 11%. This project produced specific improvements such as starting on time, but it also created a general focus on optimizing the use of the available capacity. In 2004 RCH did also receive some unwanted help of a multi resistant staphylococcus aureus that forced RCH to close its Intensive Care unit for a period of time, thus enabling RCH to treat more low care patients. Over a period of five years RCH was able to increase the number of surgical operations by more than 20 percent.



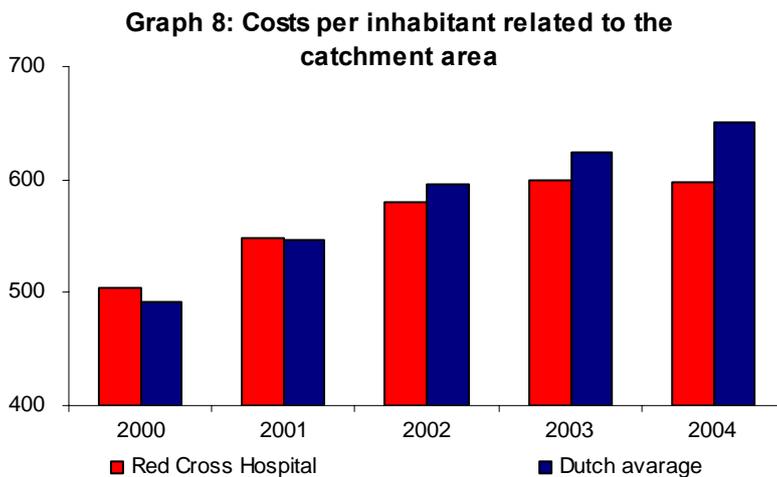
Graph No. 5 demonstrates the number of beds that were blocked by patients waiting for a nursing home. Beds that are blocked seriously impede the available capacity and therefore our output. RCH was aware that it had a problem in 2001 but RCH was not aware of the magnitude or the financial impact. RCH then decided to add this parameter to the set of performance indicators and monitor it. Together with the healthcare insurance company, responsible for purchasing sufficient nursing home capacity, RCH could bring down the number of patients waiting for a nursing home to acceptable levels.



Graph No. 6 demonstrates the number of patients units per full-time equivalent (fte). A patient unit is a measure of our work load calculated by multiplying the number of admissions, day care treatments and outdoor contacts each by their own weight factor. The total summation of patient units gives a fair impression of the workload of a hospital. Therefore the number of patient units per fte gives an impression of the efficiency of a hospital. In 2000 there was a high sick rate (see graph no 10) and a general (but not substantiated) idea that the workload was much too high. Given the sick rate RCH then decided to increase the number of employees which explains for the drop in efficiency in 2001. From that time on RCH had its quality management system fully operational and from 2003 RCH could give efficiency an extra impulse with the first tangible results of Lean Six Sigma.

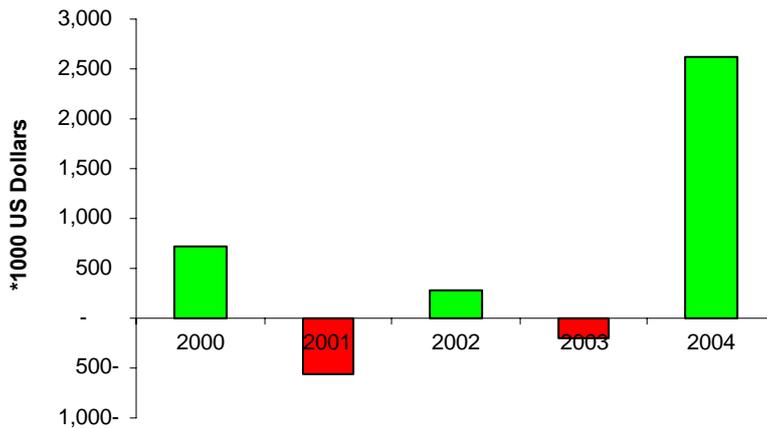


Graph No. 7 demonstrates the number of admissions and day care treatments per full time equivalent (FTE) nursing staff. It also demonstrates the number of admission days per fte nursing staff. The graph clearly shows that a number of projects and the implementation of clinical pathways firmly increased the output per fte.



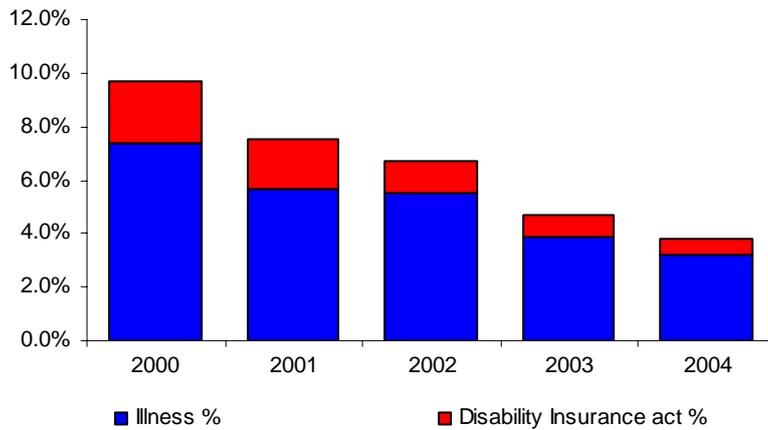
Graph No. 8 demonstrates the costs per inhabitant related to the catchment area of the RCH and of all Dutch (non-academic) hospitals. This graph relates the overall output of the RCH to the total costs. In 2000 RCH was less efficient than the Dutch average. The quality management system and Lean Six Sigma made RCH 8.3% more efficient on costs per inhabitant than the Dutch average in 2004. This graph perhaps shows best the effects of quality management in the hospital.

Graph 9: Income from continuing operations



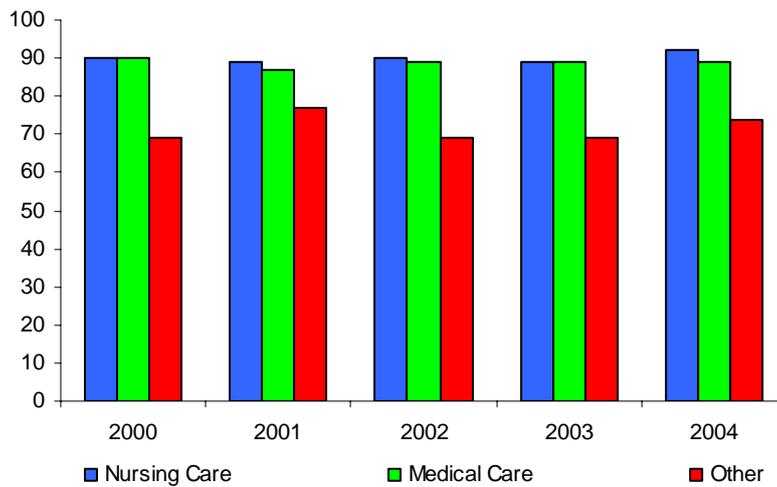
Graph No. 9 demonstrates the income from continuing operations. Here it can be seen that the earnings from the projects in 2004 correspond directly with the income of the RCH in that same year. This income differs significantly from the years in which Lean Six Sigma was not fully operational.

Graph 10: Absence due to illness



Graph No. 10 demonstrates the absence through illness. This graph shows clearly that despite the increase in efficiency RCH was able to control the absence through illness as well.

Graph 11: Patient satisfaction in three categories



Graph No. 11 demonstrates patient satisfaction. Perhaps one of the most important indicators is related to patient satisfaction. This graph demonstrates three main categories of patient satisfaction; nursing care, medical care and all other service and care. RCH uses approximately 50 different types of questionnaires, one for each department. The structure of all these assessment forms and the rating systems are identical so all results can be added to produce one score for patient satisfaction in the RCH. RCH distributes more than 2,000 forms a year and the response rate is nearly 50%. On every item, patients can rate four categories; “good”, “reasonable”, “can be improved” and “must be improved”. RCH has been able to achieve consistent rates of more than 80% “good” every year for the entire hospital and 90% “good” on nursing care and medical care.

When we look at the development of the performance indicators of the RCH we can draw the following conclusions. In the first place RCH has been able to realize its two main strategic goals: RCH achieved continuous growth over the past five years and RCH was able to increase efficiency from below to above the Dutch average. Furthermore, RCH was able to consistently lower our sick rates. This might indicate that the raise in efficiency did not inflict the well-being of our employees. Its third strategic goal to deliver an adequate level of quality of care in order to stay attractive to its patients has been achieved as well because its patient satisfaction scores were constant (and high) over the past five years. Based on its achievements we dare to state that quality management indeed has paid off in RCH.

Conclusions

Quality management according Juran consists of three aspects; quality planning, quality control and quality improvement (Juran, 1989). In addition, measuring quality is considered the core of quality management. In healthcare similar aspects of quality management have been defined (Donabedian, 1987). An important way in which quality management is put into practice is through the implementation of quality standards and a quality improvement program. The most important quality standards are the International Quality Standards ISO 9000 series. Currently, the state of the art quality improvement program is called Lean Six Sigma. In this paper we discuss both aspects and we show the results of the implementation of ISO and Lean Six Sigma in a hospital over a period of five years. Both Lean Six Sigma and ISO offer explicit structures and approaches so there is little room for debate among employees about the relevancy and subsequent actions needed to achieve quality. Finally, Lean Six Sigma and ISO are highly complementary. They both focus on: processes, client wishes, continuous improvement, employee involvement, fact-based decisions and a systems approach on management. So an ISO quality management system and Lean Six Sigma are virtually zipped together thus integrating the full spectrum ranging from quality control via quality assurance to quality improvement.

The necessity to improve healthcare organizations has been emphasized strongly by the Institute of Medicine. The requirements to create a high quality healthcare organization have been described much earlier (Berwick, 1989). In our opinion ISO combined with Lean Six Sigma provide the instruments to achieve such organizations.

Acknowledgement

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CHAPTER FOUR

From Organization to Whole-of-System Excellence: The Issue of Water

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Introduction

The ideas of organizational excellence have provided frameworks and tools for substantial improvement in organizational performance. The ambit of organizations' efforts in excellence has expanded over more than twenty years from quality (consistency), through excellence (continual alignment), to sustainability (context). These changes have resulted in part from the increased pace of change in the organizational environment (Goldsmith and Samson, 2007).

This increased dynamism in turn places pressure on the decision processes around governance, markets and regulation – key determinants of the role each organization plays in the system as a whole. In a move analogous to the advances in supply chain efficiency and effectiveness over the past fifteen years, organizations need to adapt continuously to deal with uncertainty, change and conflicting objectives. This flexibility applies not only to the organizations themselves, but also to the part they play in the whole-of-system.

The reliance on the organization as unit of analysis is hampering progress. There are many situations in which individual organizations can attempt to optimize against their own objectives to the detriment of the system as a whole. Poor overall outcomes are wasteful and threaten the success of all participants. Excellence has taken us so far, but is not leading to system-wide optimization.

Can excellence be applied to optimize whole-of-system performance?

This general question is explored using the example of urban water conservation.

The Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) was formed in 1998 with a research-focused agenda addressing “the creation, dissemination and application of knowledge pertinent to organizational excellence” (Dalrymple, Hillmer, Karney, Edgeman and Geroy, 2000). Excellence models have provided organizations with a process for continuous improvement, addressing their efficiency, effectiveness and competitive position (Dalrymple et al., 2000). The inclusion of stakeholder concerns in organizational excellence models is not new. Indeed, at its formation MAAOE chose to define organizational excellence thus (Edgeman, Dahlgaard, Dahlgaard and Scherer, 1999):

Organizational excellence is the overall way of working that balances stakeholder concerns and increases the probability of long-term organizational success through operational, customer-related, financial, and marketplace performance excellence.

What is new is the increasingly dynamic and contingent nature of stakeholder concerns (Goldsmith and Samson, 2007) and the increase, or at least increased awareness, of the extent to which trade-offs are necessary to satisfy competing stakeholder concerns. By examining the case of urban water conservation, this paper exposes some of the weaknesses of current practice in organizational excellence. Methods to overcome these weaknesses, eg (Senge, Lichtenstein, Kaeufer, Bradbury and Carroll, 2007), could simply reinvent excellence processes from another direction.

Rather than dismiss organizational excellence processes out of hand as having caused the types of failure exemplified in this case study, we suggest this is an opportunity for

improvement of the excellence process itself. Organizational excellence processes offer the necessary attributes of dynamism and strategic congruence. As ‘effectiveness’ becomes a broader construct, better processes are required to explore and mediate competing concerns and to share resources and skills in more creative ways. MAAOE was established for just such research-driven improvement.

Organizational Excellence

The forerunner of organizational excellence was quality management, which was generally applied to individual activities and outputs of the organization with the aim of increasing efficiency and customer satisfaction. Total quality management (TQM) involved employees more extensively, pursuing continuous improvement driven from the bottom up. The ideas of continuous improvement, although conceptually valuable, suggesting integration and fine-tuning of multiple aims and activities, were generally poorly implemented as processes could be cumbersome and opaque. Organizational excellence introduced a new wave of processes that took more explicit aim at aligning organizational efforts with strategic goals and capabilities.

A variety of methods have been developed to implement organizational excellence (Khoo and Tan, 2002). Organizations making progress on organizational excellence are more likely to perform better on financial and non-financial measures, such as customer satisfaction, (National Institute of Standards and Technology, 2007). As practitioners have gained experience, they have modified and extended the excellence approaches in use, to push forward constantly on the performance of organizations, and their capacity and resilience to deliver such strong results. For example, the UK Highways Agency has employed advanced excellence processes to evaluate and rank construction firms wishing to participate in major projects. Conducted over several years, this program, tailored for and mandated by a major customer, has resulted in an ongoing engagement and performance improvement process for their key suppliers.

However, excellence approaches *per se* cannot provide ironclad guarantees of organizational performance. For example, Xerox, winner of the Baldrige award in 1997,

was found only a few years after that prestigious win to be guilty of corporate governance shortcomings through the use of misleading accounting practices (CNN, 2002). In this case, we assume that Xerox's exemplary performance on organizational excellence was 'blindsided' by fiduciary requirements. One could speculate about whether this was mere oversight or a motivational bias, introduced by the strong focus on the measurement, reporting and improvement of results. The Xerox case does illustrate, however, the critical importance of defining the scope and parameters of excellence in any organizational improvement (and assessment) effort.

From the mid-1990s, organizational excellence efforts have developed a third wave, as organizations recognize and seek to account for the needs and requirements of a broader group of stakeholders (Goldsmith and Samson, 2007, Foster and Jonker, 2007). Approaches to this challenge vary, and it could be argued that they have so far failed to build effectively on what might be described as the 'best' of the quality and organizational excellence approaches that have preceded them. While organizational excellence has the potential to provide a strong framework for the careful integration of a broader set of stakeholder concerns, there is some evidence of 'reinventing the wheel' in the retreat to external assessment and validation of claims (low employee involvement), standard indicators and reporting designs, and the rather too vaguely positioned (and risky) "stakeholder dialogue".

In previous research (Goldsmith and Samson, 2005), we have proposed a 'business case' for sustainability practices within an organization by examining the question: "Why and under what circumstances do sustainable development practices contribute to long term business success"? Our research showed that sustainability practices that made a contribution to business performance also built a strong 'sustainability orientation' in the culture of the organization. We found considerable overlap between the key features of sustainability orientation and organizational excellence. The major additional feature attributable to sustainability orientation was that of 'stakeholder empowerment', that is, the willingness of the organization to share power with key stakeholders in the pursuit of increased fulfillment of one or more of three generic strategic requirements, namely:

efficiency, stakeholder support and market edge. While this approach, derived from a study of companies acknowledged to be leaders in some aspects of sustainability in their industries, can be demonstrated to work well, it presumes that the power to make progress and balance stakeholder needs resides in the single organization. What happens when this is not the case?

Unilateral Sub-Optimization

Much of the discussion of organizational sustainability has focused around the view of stakeholders as ‘passive recipients’ of the outcomes of organizations’ activities and decisions. Based on Davis’ Iron Law (Davis, 1973), many argue that organizations need to be proactive in taking account of stakeholder needs and requirements, as eventually these will emerge, with the potential to spark urgent action, reparation, and adverse impacts on the business. However, this story downplays the role of stakeholders as active participants in the system. What happens when a sub-group of stakeholders needs to cooperate with the organization to improve performance of the system-as-a-whole?

Examples of this situation are found in high performance workplaces, where employees collaborate with the organization to tap into the complementary benefits of discretionary effort and increased remuneration and work satisfaction. Similarly, in supply chain management, organizations participating in the supply chain seek to work together on increasing the overall efficiency of their operations, for mutual benefit. However, these collaborative approaches have not developed as logical extensions of organizational excellence, although they might have.

We suggest that value can be lost between organizations, even if they are individually excellent. In cases where the goals of more than one entity are interdependent, organizational excellence employs the wrong ‘unit of analysis’, as it fails to consider the whole system. We have termed this problem “Unilateral Sub-Optimization” as it describes the situation where each entity maximizes its own position, without consideration to the effect on the system as a whole. Such unilateral sub-optimization is another example of the Tragedy of the Commons (Hardin, 1968).

The pursuit of organizational sustainability raises a strong example of this dilemma. Sustainability can be defined as (Goldsmith and Samson, 2002):

Sustainable development practices manage technology and social organization to make balanced and equitable progress on economic, environmental and social needs so that meeting these needs in the present does not compromise the ability of future generations to meet their own needs.

The scope of the economic, environmental and social needs addressed by sustainable development practices is described in the Sustainability Reporting Guidelines 2002 published by the Global Reporting Initiative.

By its nature, sustainability requires change and proposes innovation to make the required change in such a way that generates additional value. Davis' Iron Law (Davis, 1973) states, "when stakeholders are disadvantaged, they will eventually gather sufficient pressure by direct and indirect means to force a change in behavior". When change occurs slowly, businesses can wait for and then respond to new regulations. However, as change occurs more quickly and with greater uncertainty, policy and decision processes also come under pressure – e.g., markets and regulations – and struggle to provide adequate frameworks for the new requirements. This difficulty has already led to an increased reliance on frameworks that are better suited to adaption, such as standards and codes of practice, and including organizational excellence¹.

Arguably, however, organizational excellence has had a contrary influence. On the one hand, it has offered flexible and inclusive processes for extracting greater efficiency and improved organizational performance (on many dimensions) by continuously aligning and rebalancing strategic goals and activities. On the other, it has encouraged the restructure and in many cases splitting of organizational structures to promote comparisons and benchmarking. This trend has fragmented the power to make progress and balance stakeholder needs, resulting in organizational and institutional structures that are hard to lobby and coerce for change (as required by Davis' Iron Law) and are thus

¹ James Madison described the ideal world in 1788 (Madison, 1788) "If men were angels, no Government would be necessary." Davis (Davis, 1973) accounted for the situation where Government lags community requirements. As change overtakes Government capacity to accommodate it, we enter a third level, where requirements are to some extent unknowable, and we need to consult, cooperate, learn and adapt.

somewhat immune to stakeholder pressure. Similarly, fragmented organizational structures have difficulty in influencing each other, and pressuring for collaboration and change. Thus efforts in excellence are too limited, are only partially reactive let alone proactive, and participant stakeholders lack the necessary influence with each other to collaborate.

When using the organization as the unit of analysis, in cases where organizational influence has been fragmented, organizations are restricted to making simple efficiency gains within the paradigm under which they were established. True and continuing change cannot be achieved without collaboration, and collaboration for change requires both capacity and willingness.

We present the case of Melbourne's urban water arrangements as an example of unilateral sub-optimization— how it develops, and what results – to pose a new challenge for organizational excellence, that it should develop processes to suit multi-entity collaboration for whole-of-system excellence.

Development of Melbourne's Urban Water Arrangements

Melbourne is a city with about 3.6 million inhabitants, centered on Port Phillip Bay in south-eastern Australia. The settlement was established in 1835, and grew rapidly during the 1850s as a result of the gold rush. The early development of the city coincided with the discovery in Britain of the relationship between the contamination of water supplies by human wastes, and outbreaks of disease, particularly cholera (Snow, 1855). Thus the development of the city's major infrastructure took place in the context of new understandings about the role of water supply and sewerage systems in protecting public health.

Table 1 presents a summary of the development of Melbourne's urban water arrangements from the mid-1800s to the present day. The table describes the major milestones in terms of institutional arrangements and infrastructure provision over time.

The focus of excellence concerns and how it has varied over this period is also described, along with the prevailing paradigms that governed water supply and sewerage provision.

It is a fascinating story. Melbourne grew fast, and the early recognition of the importance of water supply and sewerage led to the creation of the Melbourne and Metropolitan Board of Works (MMBW) as the city's center of engineering and planning expertise. The work of the MMBW in the early days was pioneering, leading to a deep and thorough practitioner understanding of the principles underlying design decisions. As the city grew, and infrastructure requirements extended, the MMBW became the logical resource base on which new skills in highways, bridges, urban planning and parks management could be built. The MMBW peaked in size in the 1970s, when it employed around 12 000 people. After that, the portfolio of its activities was gradually distributed amongst other government departments and agencies, including the Department of Infrastructure, VicRoads and so on.

TABLE 1

History of Melbourne’s Urban Water Arrangements

Period	Status	Excellence efforts
Phase I	<ul style="list-style-type: none"> • Protection of public health, separation of water supply and sewage – key decisions: robust, gravity system; protected catchments • Skills – home-grown, strong ownership • Water viewed as abundant, key function as a transport medium for waste • Culture of construction – harnessing the forces of nature for the use and convenience of mankind 	
Mid 1800s	Small water storages for supply built by then Public Works Department.	
Late 1800s	Melbourne one of the richest cities in the world (gold rush). Population around 500 000. Water supply but no sewerage system (high incidence of typhoid and cholera). Argument among State Government, Melbourne City Council and Inner Municipalities over responsibility. Royal Commission Mansergh Report on the Sewerage of Melbourne.	Integrate planning and construction functions to facilitate engineering excellence
1890	Act of Parliament passed setting up the Melbourne and Metropolitan Board of Works (MMBW). MMBW to take over existing water supply system (and augment it) and develop a sewerage system.	
1891	First Board meeting of MMBW	Engineering, community health
1892	Work begins on sewerage system and Werribee Farm. Funds raised in the local market (depression). MMBW known as the ‘Golden Crutch’ of the community, creating industry, jobs and stimulating the local economy.	
1897	First property connected to the sewerage system.	
1905	State Rivers and Water Supply Commission established.	Irrigation provision
1929	MMBW given additional responsibility for main stormwater drainage and river improvements.	Developing new functions and skills and methods to support them
Early 1930s	Major water supply works completed.	
1939	MMBW directed by State Government to prepare a planning scheme for Melbourne.	
Phase II	<ul style="list-style-type: none"> • Integration with planning, highways, drainage • Skills – understanding interaction between urban design and infrastructure provision and equitable funding models • Home-grown approach suited to depression times, becomes overweight, cumbersome and irrelevant in some aspects • Culture of public service – excellence in engineering, community service obligations, capacity to deliver required infrastructure and services 	
1954	Planning scheme exhibited and MMBW appointed Melbourne’s planning authority.	Integrated planning, administration and financial planning (control of rate increases by scheduling works)
1956	MMBW appointed for metropolitan highways, bridges, foreshores and parks.	
Late 1950s	Completion of Upper Yarra Reservoir. Planning scheme submitted to Government.	

Period	Status	Excellence efforts
Phase III	<ul style="list-style-type: none"> • Protection of environment added – treatment processes extended, new works ‘modern’ to ocean outfall, increased trade waste control, implications of increased urbanisation on flooding and drainage, harder to build new dams • Skills – adaption to new requirements, more sophisticated engineering design and operations, managing, extending and renewing assets • Water and wastewater quality of greater importance, more sophisticated funding mechanisms to implement ‘user pays’ • Culture of efficiency and effectiveness – drawing on ‘gold plating’ view of earlier design philosophy 	
1960s	Opening of major works: Brooklyn sewage pumping station, freeways. Works commence on south-eastern sewerage system. State Government approves planning scheme – extended to more than 5000 sq km.	Engineering, management of major projects, major contracts, self-funding of works
1970s	Staff numbers peak at around 12 000. Completion of further freeways, Greenvale and Cardinia Reservoirs, Stage I Port Phillip Bay Environmental Study, new head office complex. South Eastern Purification Plant commissioned. Major water transfer mains completed. Lower Yarra water supply development started. MMBW relinquishes control of metropolitan highways, bridges and foreshores. Thomson River scheme commenced. Metropolitan parks opened.	Quality Review Committees, driven by senior engineers: focus on engineering excellence
Phase IV	<ul style="list-style-type: none"> • Pressure to reduce size of public service, introduce competition as a mechanism for increased efficiency • Skills – focus on limited performance criteria eg sewer overflows, time to answer service calls, key skills in planning, design and operations outsourced with loss of connected (informal) intelligence leading to proaction • Water and wastewater paradigm now set – viewed as static, merely a matter of tighter management • Culture of delivery – innovation and replication within tight bounds of previous paradigm • Trend continues into the 1990s 	
1980s	<p>Major organisation reviews and downsizing. Outsourcing of non-core activities. Break-up of professional groupings in favour of alternative managerial structure. Decentralisation of customer services. Corporatisation and renamed Melbourne Water Corporation (MWC). Thomson Dam commissioned.</p> <p>Department of Water Resources merges with Department of Conservation and Environment and Heritage and Environment Division (Ministry for Planning and Environment) as Department of Conservation and Environment.</p> <p>Rural Water Commission succeeds State Rivers and Water Supply Commission, continuing role of operation and maintenance of rural water supply system.</p> <p>Water Act, 1989</p>	<p>Organisation reform, downsizing, outsourcing, cultural reform, managerialism</p> <p>Engineering no longer the focus. New management-based structure. Internal audits for systems integrity and quality assurance</p> <p>Benchmarking and performance measurement. Performance improvements limited to short-term view, limited indicators.</p>

Period	Status	Excellence efforts
1990-1994	<p>Continuing organisation review. “State Owned Enterprise” reform. MWC is reorganized into five entities. New legislation (Water Industry Act, 1994) is prepared.</p> <p>Rural water authorities manage supplies. Department of Natural Resources and Environment (DNRE) merges Department of Conservation and Environment and Department of Agriculture, Energy and Minerals, <i>inter alia</i> manages catchments. Rural Water Corporation succeeds Rural Water Commission, with responsibility for headworks, and eventually becomes absorbed into new DNRE.</p>	<p>Industry indicators led to creation of number of industry lobby groups. Positions became more entrenched.</p> <p>Engineering functions outsourced. Quality systems fragmented.</p>
Phase V	<ul style="list-style-type: none"> • Population growth, drought and climate change challenge the previous paradigm of abundant water, however, few bellweathers of change • Skills – now entrenched around the old paradigm, protection of public health, protection of the environment, fair and equitable funding – deficient for innovation, developing and assessing new paradigms • New paradigms unclear, no perfect options without cooperation • Culture of resistance – no clear incentives for change 	
1994-1999	<p>MWC is disaggregated into four entities and assets, liabilities and staff are transferred. Legal contracts are established between the parties: Melbourne Water as the wholesale water, sewerage and drainage authority; three retail companies to provide distribution and collection and customer services; and Parks Victoria to manage the metropolitan parks. New regulatory arrangements. Catchment Management Authorities are created, with Melbourne Water playing this role for Port Phillip. Council of Australian Governments (COAG) commits to national plan to improve rural water consumption and environment situation.</p>	<p>Key performance indicators reflect previous limited view. Loss of focus on the big picture.</p> <p>State and National efforts for coordinated improvement hampered by constant institutional change.</p>
1995-	Continued operation of the disaggregated arrangements, some fine-tuning. No new ‘major’ capital works projects.	
2002	DNRE is reorganized into Department of Sustainability and Environment (DSE) and Department of Primary Industries. DSE retains responsibility for water supply and catchment management <i>inter alia</i> .	Forestry management outsourced.
Phase VI	<ul style="list-style-type: none"> • Dire shortage, exacerbated by ten-year drought, makes action on urban water supplies imperative • Skills – now fragmented and depleted, little organisational memory, planning functions disaggregated • New paradigm should be one of adaption – flexibility and diversity – requires wide range of innovative solutions tailored to specific locations – broad skills base would be required to deliver this, along with smart policies and institutional arrangements • Culture of avoidance - Government pursues low-skill options – demand reduction and large schemes (design and construct) 	
2004-	<p>Sustainability Victoria established to promote community-wide sustainability improvements.</p> <p>DSE adopts coordinating role in water planning, producing major policy document² covering both urban and rural water arrangements. Water, environment and climate change are centralised under one minister.</p> <p>COAG announce the National Water Initiative as a response to the</p>	Planning reactive and resource-constrained.

² (Victorian Government, 2004)

Period	Status	Excellence efforts
	poor progress from 1994, and establish the National Water Commission to implement it. Increasing pressure to centralise control for water management and supply to overcome problems (perceived to be) lack of cooperation between states.	
2007	<p>Prime Minister’s Science, Engineering and Innovation Council (PMSEIC), establishes Urban Water Taskforce to recommend on the water supply crisis facing major Australian cities.</p> <p>Minister for Water announces radical plan for the Commonwealth to take control of water management and supply for the Murray Darling Basin.</p>	Evidence of failure of planning at state level, as Commonwealth seeks referral of powers.

The paradigm that developed in the period up to the 1970s was based on engineering excellence and the provision of robust systems for the support of city growth and protection of public health and the environment. The water supply and sewerage system that resulted was unusually resilient, and has been consistently labeled an exemplar on the World stage. In particular, water supply catchments were completely isolated, or protected, so that water required very little treatment, often only a protective dose of chlorine, to be suitable for potable supply. Further, the land-based treatment system at Werribee, serving the city center and northern and western suburbs, has proved to be extremely robust and flexible and is both unique and innovative. A range of engineering principles and standards evolved, both locally and in consultation with other Australian and international cities, to maintain the underlying principles of separation of water and sewage, and reliable service provision.

Perhaps the very success of the pioneering and major development work of the MMBW led to over-confidence about the ability to maintain continued engineering excellence after a radical downsizing and restructure. During the 1980s, resistance to major new infrastructure developments such as dams and effluent outfalls, coupled with a new focus on cost control through efficiency, caused water authorities around the World to work on squeezing more capacity out of their existing assets. Design assumptions and factors of safety were challenged, and systems tested, to establish new and more efficient modes of operation. Augmentation works would add only a portion of the additional throughput capacity they would enable, through redesign and reappraisal of system operations and performance. The ‘gold-plated’ view of previous public service designs was supported

by the apparent ease with which additional capacity could be derived without substantial expense. However, it was arguably less clear that these capacity reserves were non-renewable, that is, they could only be drawn upon once.

Melbourne developed a greater sense of security about water and sewerage capacities for the future than most. A drought in 1982/3 raised the specter of supply restrictions, but any concern was offset by the major increase in water storage through the commissioning of the Thomson Dam. It was against this backdrop of efficiency gains and resilience, and in the age of quality and excellence, that the planning and design functions of the major state water agencies, notably the MMBW and the Rural Water Commission, were outsourced and their operations functions disaggregated. The new paradigm of the 1980s and 1990s was one of cost control and efficiency, with assets viewed as a fixed resource to be utilised as efficiently as possible. Unfortunately, an unprecedented ten-year drought, and the reduced amount and increased variability of rainfall and runoff brought about by climate change, along with population and per capita consumption increases, has shown that the 'efficiency gain' approach is substantively exhausted and will no longer satisfy Melbourne's water needs.

Paradigm Shift

The principles that have formed the basis of a reliable water supply and sewerage system for 150 years, namely: protected catchments; complete segregation of water and sewage; and centralized service provision, can no longer maintain adequate water supplies for Melbourne's growing population. The reliance on catchments (rainfall and runoff) exposes water supplies to the increased uncertainties of climate change. The segregation of water and sewage restricts the potential for local or distributed systems and for reuse of treated effluent. Centralized service provision again restricts the potential for distributed systems, although it does provide more options for economies of scale in advanced effluent treatment processes.

The intervening paradigm, of efficiency, may have undermined the capacity of the water industry to develop new sets of principles that can address long-term water shortage.

Key skills have become fragmented according to the functions defined by the original paradigm. This has the effect of ‘locking in’ the paradigm, as there is no clear formal or informal method for the sharing of knowledge, costs, benefits and risks that is required to innovate and develop a new paradigm and set of principles to suit current and future needs. Restructure has caused key information repositories and organizational knowledge to be lost, either literally, or through retirement and disaggregation. This knowledge includes most critically, understanding *why* particular decisions have been taken in the past – the principles on which they have been based. This understanding is key to the consideration of new approaches, to distinguish between real and apparent gains, and to guard against inadvertent negative consequences of change. The vital role that large public service organizations played up to the 1980s in training and skills development has also been substantively eroded. Thus many skill sets are superficial and incomplete. The skills that remain are fragmented among different organizations, some of which are in competition with each other, and many of which have conflicting goals. This situation presents a poor basis for collaborative action.

Organizational Gridlock

The longitudinal view, or history, of Melbourne’s water arrangements has described how the need for a paradigm shift has arisen, and why the industry may not have the necessary capacity, in terms of skills and resources, to deal with such change. However, change has a second prerequisite, that of willingness. A cross-sectional, or snapshot, view of water arrangements in Melbourne in the early 2000s describes how the goals of individual organizations are in such conflict that change of benefit to the system-as-a-whole is almost impossible. This phenomenon is a special case of unilateral sub-optimization that we have termed ‘organizational gridlock’. For each organization to take action of benefit to the system-as-a-whole requires the cooperation of one or more other organizations. In turn, each organization will suffer a disbenefit to itself (undermine its own strategic objectives) if it supports action by itself, or another, that is beneficial to the whole system. There is no first mover advantage, and no clear mediator. Thus the situation, although widely acknowledged by practitioners (in private) to be disadvantageous to the community and ultimately to the organizations themselves, continues unchanged.

Table 2 describes organizational gridlock for the example of water conservation in urban Melbourne in the early 2000s. For each of the organizations and groups with an active role in urban water provision, regulation, use and disposal, the table describes the actions they might take to benefit the system-as-a-whole, and the actions they will generally take if the interests of their own organization are given primacy. The result in every case is gridlock, as the actions that satisfy the self-interest of each individual entity are at odds with those required to achieve an overall gain for the system-as-a-whole. If the reader takes a journey through the nested set of actions required to make a particular beneficial change to the system-as-a-whole, they will find the experience similar to that coined in the song “There’s a hole in my bucket, dear Liza, dear Liza..” as despite every effort to the contrary, the system will remain unchanged.

TABLE 2

Urban Water Gridlock: Water Conservation Example

System Optimisation	Organisational Gridlock	Unilateral Sub-Optimisation
Provide incentive for water conservation across the system and in zones where growth in supply is restricted or costs of provision are high	Melbourne Water	Maintain dividend to Treasury by deferring new headworks and shifting responsibility for conservation to Department of Sustainability and Environment and retail water companies
Reduce leakage in distribution system. Provide incentives or regulations for customers to conserve and recycle water. Provide incentives or regulations for local augmentation of supplies through capture of rainwater and runoff and recycling schemes. Provide incentives for developers in the form of reduced development contributions to install water conservation and recycling measures in new estates. Provide recycled effluent for lower grade uses in industry, irrigation and households	Retail Water Companies	Maintain dividend to Treasury by continuing to collect revenue, which is directly proportional to the volume of water delivered to customers. Therefore defer expenditure and demand reduction measures. Defer leakage detection and control measures because there is no significant incentive in the form of reduced bulk supply (Melbourne Water) charge. Avoid effluent recycling schemes because of their increased complexity, operational risk and cost of supervision. Resist lowering development contributions because of high fixed costs associated with infrastructure provision (costings of new schemes depend on phased connection) and increased risk and supervision
Support local wastewater treatment and recycling schemes and use of recycled effluent for irrigation (agriculture and domestic)	Environment Protection Authority	Introduce stringent requirements and burdensome approvals processes for local treatment plants and effluent irrigation schemes because of the environmental implications and perceived operational risks and difficulty of providing adequate supervision
Support the use of rainwater, runoff and recycled water in 'fit for purpose' schemes	Department of Human Services	Introduce stringent requirements and burdensome approvals processes because of the potential (known and unknown) health implications, perceived operational risks and difficulty of providing adequate supervision
Establish policy framework and regulations to promote water conservation	Department of Sustainability and Environment	Does not have influence over all relevant organisations, and unable to locate a solution that advantages all parties
Plan infrastructure provision so that urban developments do not conflict with water supply opportunities	Department of Infrastructure	Subject to a range of pressures regarding development infrastructure, with water and sewerage provision rarely viewed as the primary constraint
Establish policy and accounting framework to promote water conservation	Department of Treasury and Finance	Maintain substantial dividend from water industry and seek efficiency gains in all government departments and agencies
Incorporate water conservation measures in local planning schemes and overlays. Explore use of covenants and other property restrictions	Local Government	Politically driven, with new development a key means of increasing the rating base. Detailed water planning for the future requires significant investment and the cooperation of other government authorities and agencies

System Optimisation	Organisational Gridlock	Unilateral Sub-Optimisation
Support incentive pricing models for water conservation. Relatively high developer contributions provide an incentive for water sensitive urban design	Essential Services Commission	Committed to ensuring pricing of essential services reflects the true costs of provision. Water supply and sewerage services are dominated by fixed costs, so it is hard to justify a use-related price incentive. Developer contributions can be hard to explain when the system upgrade they are funding is not planned to occur until future years (when sufficient connections have been made). Public service accounting methods are not flexible in relation to forward provision for future works
Employ water sensitive urban design and use as a marketing tool. Plan self-sufficient developments in terms of water supply and sewerage to increase opportunity to capitalise on cheaper land that is well serviced in other respects	Developers	New developments highly cost-competitive. Buyers may respond to 'green' image, but are not willing to pay for it. Cooperation of government departments and agencies is required. Additional design and approvals costs, possibly including planning appeals processes. Uncertain operating costs, commitments and risks
Install rainwater collection and employ a range of other direct and indirect demand reduction measures such as water efficient appliances, zoned garden planting and efficient irrigation, greywater recycling, and so on	Household Consumers	No clear financial incentive for water conservation measures. Many approaches take up limited and valuable time and space and create additional work. Systems may be unreliable and smelly, and may be counterproductive in terms of their reliance on and use of additional energy. Approaches can be hard to retrofit and may conflict with householder preferences and expectations. Reliable information and support hard to access
Minimise use of water and contamination of water by waste materials. Promote recycling of waste streams from higher grade to lower grade uses. Avoid or minimise pollutants that limit recycling options for wastewater effluent, eg salt and heavy metals	Industrial Consumers	Principle of user pays has provided relatively poor incentive to undertake conservation measures. It has been difficult for water authorities to charge for pollutants that do not relate directly to current treatment costs. Industry typically plans on a 1-3 year payback as financial justification for investment, and this short-term view limits the viable conservation measures. There may be risks to product quality and worker health and safety through the increased operational risks associated with recycling

Breaking the Gridlock through a Crisis

The water crisis that has resulted from a ten-year drought, probably overlain by the effects of climate change, provides an example of how crisis can eventually force a change in the system. However, we argue that the changes that have been provoked have been inferior to those that would result from careful, collaborative work on the part of engineers, planners and other active parties.

The State Government response to over-stretched water supplies has been first, to introduce increasingly stringent mandatory restrictions on water use (mainly external use for watering, cleaning, etc). Second, advertising campaigns have been expanded, encouraging people to use less water, and recycle water for lower grade uses such as garden watering. Third, rebate schemes have been extended to provide a stronger price signal for the installation of water efficient appliances, rainwater tanks, etc. Fourth, the retail water companies have been permitted to deviate from the ‘user pays’ system and introduce incentive (sliding scale) water pricing, whereby the consumer pays more per kL water used if their overall usage is higher. Fifth, the State Government has convened special planning committees to prepare emergency plans for Melbourne should the drought continue, and to shortlist and select major supply augmentation schemes.

The first four measures listed above, would make a sensible contribution to water conservation efforts at any time. What is remarkable is that it has taken a crisis to trigger them. If they had been implemented earlier, the draw down of Melbourne’s storages would not have been so severe at this stage of the drought. The community has responded earnestly to the call to reduce demand, and this has introduced a further, ‘hidden’ measure which is the widespread installation of jury-rigged domestic greywater recycling schemes. In a crisis, the careful principles and standards that have been developed and tested in practice over more than a century have been sidelined, and it is not yet clear what the results of such an *ad hoc* relaxation of standards might be.

Arguably, the need for standards to be relaxed *ad hoc* results from the severe skills shortage that has developed across the water industry. The detailed design and supervision skills required to revise standards, and check installations, are simply not available. The skills shortage has also influenced the government’s focus on the fifth measure, listed above. At the time of writing, the government has shortlisted four huge schemes to boost supply, and plans to select one for implementation. Large new pipelines and treatment plants can be contracted out to a private provider for design, construction and if necessary, ongoing operation. On the other hand, smaller, tailored improvements across the system require skilled teams for planning, consultation,

selection, design, construction and operation. Whereas smaller, tailored approaches might well be more sustainable and flexible in the face of future uncertainty, a large king-hit scheme will not challenge the skills and collaborative abilities of the hitherto gridlocked organizations.

Breaking the Gridlock through Excellence

What might organizational excellence contribute to this case? W Edwards Deming is reported to have said during a question session at a manufacturing symposium, “It is not necessary to change. Survival is not mandatory.” There are few better examples of the necessity of change for survival than Melbourne’s urban water arrangements. WE Deming would have recommended a process for improvement, and organizational excellence is a field that has been developing and refining improvement processes over many years.

The early pioneering spirit of water and sewerage developments up to the 1970s has perhaps outlived its usefulness, as evidenced by the State Government’s retreat to large pre-planned schemes, despite their long lead-time and lack of flexibility to cater for variability and change. The uncertainties associated with climate change, along with the faster pace of change generally through globalization, in technologies, communication, markets, etc., suggest that an adaptive process will suit the next phase of water and sewerage development much better than an inflexible blueprint.

Methods in organizational excellence have developed from practice and have therefore been progressively adapted based on their success, both in terms of the conduct of the organizational improvement process itself, and its outcomes. Organizational excellence generally describes a process or group of processes which, when applied carefully and on a continuing basis, can facilitate the progressive alignment and beneficial adjustment of the organization’s strategic objectives and activities.

One of the great benefits of organizational excellence approaches lies in their engagement of a broad group of employees, and possibly other stakeholders, in a deeper discussion

and understanding of the organization's objectives, activities and the interrelationship between the two. This will inevitably help to identify critical skills gaps and shortages, as well as fruitful ground for innovation. Over time, organizations participating in excellence programs can strengthen and realign their resources.

There is no 'one size fits all' approach to urban water arrangements. A cursory consideration of a few familiar cities will reveal that the solutions for a particular city are heavily influenced by prior investments, topography, location, and other intersecting needs. Searching for fair incentive arrangements involves understanding the unique set of options pertaining to a specific situation, which in turn requires a willingness to share information and possibilities. The participatory and repeated nature of excellence processes could assist the gridlocked organizations described in Table 2 not only to develop, trial, and implement promising solutions, but also to reorganize and bolster their depleted skills and resources over time.

General Challenge for the Excellence Movement

We have presented the example of the urban water arrangements for Melbourne, Australia as a special case of unilateral sub-optimization characterized by organizational gridlock and the near impossibility of beneficial change at whole-of-system level. In turn, we have proposed unilateral sub-optimization as a feature of organizations pursuing excellence on their own account yet degrading the excellence of the system-as-a-whole, in which they play an active role.

There has been much recent interest in the pursuit of organizational sustainability, yet sustainability is a prime example where the organization is likely to be a poor unit of analysis, as it is not fully representative of the system-as-a-whole. Efforts in organizational sustainability have emphasized 'passive' stakeholder negotiations. We propose that 'active' stakeholder negotiations, currently hampered by unilateral sub-optimization where the organization is the unit of analysis, may well benefit from the processes of organizational excellence, adapted to the unit of analysis that is the system-as-a-whole. Cases of unilateral sub-optimization present a good opportunity to explore

the advantages and pitfalls of adapting organizational excellence to suit the system-as-a-whole.

To this end, we propose a definition of system excellence, adapted from the MAAOE definition provided earlier (Edgeman et al., 1999): System excellence describes the process(es) that improve the overall way of working across the whole system, to continuously balance, rebalance and make progress on stakeholder concerns, and to increase the probability of long-term operational, customer-related, financial and marketplace performance success for all actors in the system.

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CHAPTER FIVE

Management models for the future: An exploratory and critical inquiry into the nature of practiced contemporary concepts of the business enterprise

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Introduction

In the last decades a growing number of generic management models (e.g., EFQM, INK, ISO 9000:2000) has emerged. All these models are based on the ambition to stipulate the road to conventional and contemporary forms of organizational excellence. Some of the models aim to do so with regard to one aspect of the company's operations such as processes; others are based on a holistic view of the organization. This paper is based on a book project (2006-2007) entitled "Management Models for the Future" aiming to harvest twelve new company-based models from around the globe. It will be published by Springer Verlag (Heidelberg – Germany) in 2008. Each of these models is described in a structured company-based story thus creating the backbone for the book at hand. The aim is to analyze these different kinds of institutional frameworks of excellence and discuss their nature, content and enactability. The result is a rich and inspiring set of models together with an analysis thus showing the building blocks of meaningful and applicable models.

Knowledge does not simply lie around waiting to be picked up. It must be concisely carved out of a continuous stream of ongoing events in reality, perceived within a specific frame of (theoretical) reference, measured with scholarly precision, interpreted in an way that the can be related to other relevant facts and existing knowledge. All this involves frames of reference and concepts (adapted from Rose and Peterson, 165:11).

More than 500 years a go, in 1494, Luco Bartolemeo Pacioli, a Franciscan friar and a gifted mathematician, became the first person to describe double-entry accounting, also known as the Venetian Method, in his famous book “*Summa de arithmetica, geometria, proportioni et proportionalita*”. This, then new, system was state-of-the-art, and revolutionized economy and business of that time as well as immortalized Pacioli as the “Father of Accounting”.

Since then five centuries have passed. The industrial revolution came and went and gave birth to the fundamental concept of the business enterprise. During the last half century we are witnessing the birth of a service economy where intangible aspects are dominating the tangibles. In recent years we have witnessed the start of what might turn out to be the downfall of traditional approaches to running an organization. Today the accounting system tells investors less and less about the actual value and values of a company exemplified by the book to market value ratio which is steadily increasing especially for companies belonging to the new economy. Intangible aspects such as reputation, image, contribution to the broader society etc. seem to receive more and more weight when assessing the value of a company. Many companies struggle with the question of how to design and organize these new demands leading to new organizational promises that are often difficult to grasp and live-up to. While roots of the contemporary organization can be found in a bygone industrial area, present market and societal demands are such that new designs, new concepts are imminent. No wonder then that many organizations are in need of renovation, innovation and reinvigoration.

If Pacioli’s established approach to organizing the business-proposition was still working effectively then the contemporary business would not offer so many examples of failure,

scandals, discontinuity, continuous struggle with change and lack of ‘fit’ with markets and consumers. While some companies are addressing these challenges, many do not: Often because they don’t know how to do so. New functional requirements often seem in opposition to each other. Trying to handle transparency, stock market performance, sustainability, innovation, responsibility, time to market, a growing array of stakeholders, business rationalization and many other issues and demands all at the same time is not an easy task. No wonder many managers – mentally equipped with organizational knowledge from a different era - struggle with question ‘how’ to realize this transition. Whatever will happen, all signs point in the direction of reinforcing revision of designs and concepts and models and realignment with novel needs and expectations inside and outside the organization. Fundamental strategic choices have to be made in that regard. A ‘one strategy fits all’ approach is outdated if not dangerous. Instead a multi-layer strategy map requesting internal and external alignment seems the way to go. It is clear that the time is right to re-conceptualize the business enterprise.

In a spontaneous attempt to address these issues in recent years a rapidly growing number of management models (e.g., EFQM, INK, ISO 9000:2000, SA 8000, AA 1000, GRI, QRES, Six Sigma, Balanced Score Card etc. etc.) has evolved: all stipulating the road to excellent organizational performance. A recent study in Denmark, for example, has shown that approximately 47% of all Danish companies use some sort of management model (Kristensen and Eskildsen 2006). ISO 9001:2000 is now firmly established as the globally accepted standard for providing assurance about the quality of goods and services in supplier-customer relations. Up to the end of December 2005, at least 776,608 ISO 9001:2000 certificates had been issued in 161 countries and economies; an increase of 18% over 2004, when the total was 660,132 in 154 countries and economies. Similarly, ISO 14001 confirms its global relevance for organizations wishing to operate in an environmentally sustainable manner. Up to the end of December 2005, at least 111,162 ISO 14001 certificates (1996 and 2004 versions consolidated) had been issued in 138 countries and economies; an increase of 24% over 2004, when the total was 89,937 in 127 countries and economies (source: <http://www.iso.org>, May 2007). The underlying claim here is that if companies apply one of these management system standards they

should *ceteris paribus* reach a higher level of performance and excellence than they otherwise would have been able to achieve.

The “*raison d’être*” of management models

Existence of organizations is based upon the production of outcomes such as “profit”, “common goods” or the production of ideologies. Outcome should by definition create value. Outcomes that only can be achieved respecting the wellbeing of organizational members and to take into account its ‘environment’ [the community and its customers] relevant for its existence (Jonker and Eskildsen, 2002). Organizations thus don’t exist because they are making profit; profit is a reward for creating value. The organization as such is ‘the instrument’ to achieve that outcome. The actual realization of this outcome can only come about in interaction with the context [or environment] in which the organization operates. To make a profit is based upon the fact that people buy products or services. The definition of appropriate products and services changes continuously over time and making the right choices at a given moment to fulfill the needs and expectations of people [be it employees, customers, suppliers, stockholders or society at large] can be done in a variety of ways. This is referred to as ‘contingency’ or ‘equifinality’ (Jonker and Eskildsen, 2002).

The term ‘management model’ describes a broad range of informal and formal models that are used by organizations to represent various (functional, social and emotional) aspects of a business, such as operational processes, organizational structures, and financial forecasts. Although the term can be traced to the 1950s, it achieved mainstream usage only in the 1990s. Many informal definitions of the term can be found in popular business literature. For example: “A business model is a conceptual tool that contains a big set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.” (Osterwalder, Pigneur and Tucci , 2005).

A model is by definition a representation of something else, something that is not – or cannot be - present or is not tangible. It is “*a set of basic assumptions or fundamental principles of intellectual origin from which discussion and actions can proceed*” (Popper, 1994). It should create a certain order from observable and measurable facts that might appear at first hand chaotic and unrelated. Here the focus is on models regarding organizations either as a whole, or focusing on a specific function (e.g., quality or corporate social responsibility). The first are often called ‘holistic’ models, the latter ‘functional’, or ‘function specific’ models. A confusion related to the business model concept is that many people speak about business models when they really only mean parts of a business model (Linder and Cantrell 2000). What also raises confusion is the maxim that many models are useful in various situations – in whole or in part. This is also known as the ‘contingency theory’. In essence this implies that a management style and organizational structure are influenced by various aspects of the environment; the contingency factors. There is not "one best way" for leadership, or design of the organization. Usability depends on the context and providing guidance for managers in relation to creating desired improvements. All this of course raises the question of the applicability of these management models, or in other words the *raison d'être* of management models in general.

A management model provides a “stable” theoretical framework that can be used to observe, create and assess a real life organizational ‘situation’ in order to make desired (future) improvements (Eskildsen and Jonker, 2001; Rüegg-Stürm, 2005). As a whole a model offers [implicit] research-methods and standards to make a comparison between the present and future possibilities through an organizational self-assessment. In that respect it is a tool for comparison – between the present situation and a desired situation in the future - based upon its own values, structure, methodology, methods and techniques. Guillen (1994) argues that in the history of management science three overriding models of management have been developed; (a) scientific management, (b) human relations and (c) structural analysis. Adopting one of the models or using elements of the models in conjunction is dependent on the contextual setting in which the organization operates. Managers tend to combine elements of the three models given a

certain context. In other words, there is not one best way of organizing, designing or managing.

Building blocks of models

Models are (abstract) and concise representations of a set of interrelated real-life organizational issues, challenges and choices. Models are closely related to theory since they are based upon a coherent set of concepts and the relationships between. Theory may be viewed as a system for ordering concepts in a way that produces understanding, insights or knowledge. A theory includes more than one concept and how these concepts are interrelated with each other (adapted from Zaltman, et al., 1977).

Key characteristics of a model are:

1. Representation; a specific phenomenon is represented by the model – the model is not the phenomenon itself;
2. Simplification; a model simplifies reality by reducing the number of concepts and definitions included. This done to make things understandable since talking everything into account often is impossible and unworkable;
3. Relationship(s); between the concepts included (adapted from Ghauri and Gronhaug, 2005: 47 and 48).

A theory is a set of interrelated concepts and definitions leading to a series of propositions and assumptions that together present a systematic view of specified relations among those with the purpose of explaining/predicting certain phenomena (adopted from Ghauri and Gronhaug, 2005: 39 and 40). It is important to note the purpose (role) of a theory that is to predict (forecast), or to frame a particular phenomenon in order to enhance understanding. It is also important to note the notion of ‘proposition’ that is an assumed relationship between two or more concepts. The above definition of theory also claims it should present a systematic view of certain phenomenon in order too enhance understanding and knowledge – and even enable action – meaning that concepts and their relationships involved should represent a coherent ‘whole’. Any theory is furthermore limited in the perspective it represents. It can only

take into account a limited number of specific aspects of the phenomenon it aims to describe. This implies that some aspects are by definition left out.

Concepts are the building blocks of any model. “A concept is an abstraction representing an object, the property of an object, or a certain phenomenon”, (Ghauri and Gronhaug, 2005: 37). Concepts are the crucial elements in the process of building a model. They have a number of important roles:

- Concepts are the foundation of communication; without a set of agreed upon concepts, any meaningful communication is impossible;
- An interrelated set of concepts construct a perspective: a way of looking at the organization;
- Concepts serve as means of classification and selection;
- Concepts are the components of theories providing structure, explanations and possibly predictions;

“Concepts are the most critical elements in any theory, because they direct what is captured” (Ghauri and Gronhaug, 2005: 37). Even though many concepts used in organizational life are ambiguous (e.g., ‘structure’, ‘strategy’ or ‘sustainability’) they are unavoidable ‘tools’ to capture and construct what matters for those involved. Clarification of concepts given their ambiguous nature is achieved through definitions. A distinction in that respect can be made between two types of definitions, conceptual and operational. Definitions that describe concepts by using other concepts are called conceptual definitions. An operational definition is a set of methods and activities that that need to be performed in order to establish empirically the existence, or degree of existence of what is being described by a concept (adopted from Ghauri and Gronhaug, 2005: 38).

A useful definition is that a concept should:

- Point out unique attributes or qualities of whatever is defined;
- Not be circular i.e., must not contain any part of the thing being defined
- Be stated positively i.e., contain the properties of the concept being defined;
- Use clear terms.

Self-assessment

The use of management models as a means to identify opportunities for improvement and change within organizations is called organizational self-assessment. Self-assessment in an organizational setting refers to a comprehensive, systematic and regular review of an organization's activities and results referenced against a model. It allows the organization to discern clearly its strengths and areas in which improvements can be made and culminates in planned improvement actions which are then monitored for progress. Organizational self-assessment is defined as a first-party evaluation that has the following characteristics:

- It is improvement and not conformance oriented
- It is based on a framework that relates every aspect of the organization's operations to the performance of the organization
- It is a diagnostic tool that can identify internal and external performance gaps by means of systematic approaches
- It is a tool that initiates improvements actions which are then monitored for progress
- It is an ongoing and regular activity in the organization

The main purpose of organizational self-assessment is to aid the organizational quest for superior or new performance by enabling the identification of the drivers for performance. Research has shown that companies using these frameworks experience many gains from the self-assessment process ranging from increased employee involvement to improved bottom-line results. Increased focus on the customer and on continuous improvements has been pointed out as a major benefit from the self-assessment process and management models originating from the quality field (quality award, ISO 9000, balanced scorecard, etc.) have gained increasing attention from companies - there are more than fifty national quality awards, and more and more large corporations have implemented quality certification programs for their suppliers.

Some findings also indicate that it makes good financial sense to apply a holistic reporting system. The largest study of this phenomenon was conducted in the USA where approximately 600 quality award winning companies were studied over a five-year period (Hendricks and Singhal, 2001). This group of award winners was then compared to relevant benchmarks such as the Standard and Poors 500. This analysis revealed that the award winning companies outperformed the benchmarks and all the financial indicators included in the study (Hendricks and Singhal, 2001). This kind of research does however not support any statistical generalizations concerning the effect of holistic management models in industry at large.

Management models tend to be complex because they need to address two intertwined issues at the same time: (1) the functional task of organizing – what should be done by whom and in what order; and (2) establishing, maintaining and justifying a system of authority. One could call the latter also a ‘future perspective’ – one that guides the way towards a nearby future. The way in which managers perceive, assess, and interpret problems is partially shaped by some ideology, i.e., a set of assumption about how the world works and how it ought to work. Management models are in this respect useful to managers because they allow the interpretation of a problem and provide practical guidelines for action leading towards a desired future, (Guillen, 1994). Its possible contribution can thus be “...a contribution ... in the creation of concepts and tools that help manager to capture, understand, communicate, design, analyze, and change the business logic of their firm. As such they: “... help to capture, visualize, understand, communicate and share the business logic (Osterwalder, Pigneur and Tucci , 2005:19).

Application of management models

When talking about management models it is important to remember that they are not a miracle cure in the sense that application will guarantee organizational success. Models can be used for a variety of purposes. In general a distinction can be made between: description, explanation, forecasting and guidance of activities. Applying a management model is hard work that requires dedication, persistency and courage but if these three prerequisites are present the desired changes are possible. An organization may apply a

management model for a variety of reasons. It could be with the aim of mapping the value chains of the organization or because the organizations choose a more structured approach to corporate social responsibility. No matter what the specific motivation may be the overriding theme is organizational change. The important thing to remember is that the application of a management model will bring about other unforeseen consequences for the organization.

In this sense management models are tools to guide these processes of choice[s] within organizations. Management models differ from the most common everyday tools – such as hammers, knives or pans - that they are not physical by nature. They are a systematized whole based upon methodological, methodical and instrumental choices focusing on a particular subject [organizations] of a manageable property [e.g., quality or corporate social responsibility]. They differ also from common tools that they are not an object or “a thing” that can be observed or measured. The “tool” only comes “alive” once a person starts using the model (Jonker and Eskildsen, 2002).

Usage cannot however be a goal in itself. The true measure for the sustainability of any management model is whether or not the model can be used to guide rational decisions about future actions based on a causal model structure. A management model never gives a complete description of an organization and its context. The whole idea of management models is to provide a condensed version of reality – one by which managing complexity is facilitated. The search for the one true model is thus a futile quest since it does not exist. As the famous quality-guru Deming said: *"Every theorem is true in its own world. The question is, which world are we in"?*

The Case of Denmark

More and more people in industry realize that a company's condition cannot be summarized merely by a financial analysis. If operational improvements are made the financial measures will automatically follow so there is a need for ways to measure and analyze the company's ability to make operational improvements. This has made many organizations search for alternative measures and models of performance and there now

exist a smorgasbord of organizational models that describe various aspects of organizational performance.

The effect of organizational models in industry at large has been the focus of a Danish study conducted five times from 1998 to 2003. In this longitudinal study approximately seven hundred CEO's answered a questionnaire related to their company's use of management models. This information was then linked to actual financial results (Kristensen et al., 2002). The results of this analysis are shown in Figure 1 where control charts for operating profit for users and non-users of different generic management models are shown for all companies and for companies with less than 50 employees. On the horizontal axis of these charts is the model in question and the average financial result is on the vertical axis. The dotted lines indicate the 2-sigma control limits.

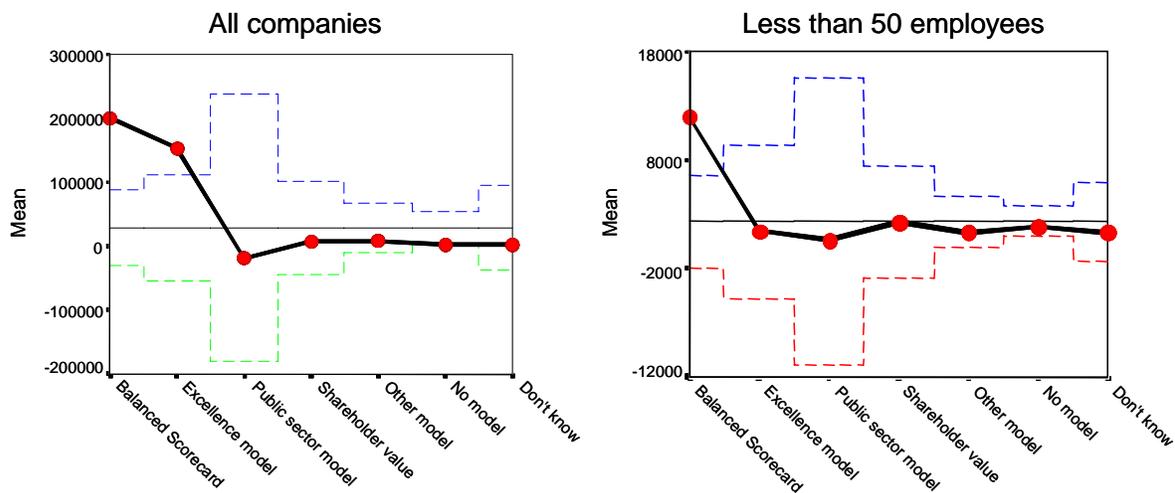


Figure 1: The financial effect of holistic management models

The figure clearly shows that when looking at industry at large there is a clear positive effect of both the Balanced Scorecard and the EFQM Excellence Model, while companies using one of the remaining models do not show any significant effect different from companies that are not using any model at all. Strictly this is not a proof that the balanced scorecard and the excellence model actually produce better results than other models. The effects may be confounded with other factors and it will take further study to resolve this problem. Furthermore, Figure 1 shows that the EFQM Excellence Model has

no financial effect for companies with less than 50 employees. In this case it is only the Balanced Scorecard that shows an effect. Apart from giving an indication to small companies concerning choice of model this also gives an indication that the EFQM/SME model is not sufficiently simple for small companies to use. This conclusion is supported by a number of case-studies focusing on the applicability of management models in relation to small and medium-sized companies

The Danish study implies that organizations change their view on the way the organization operates when they apply a management model. In other words they gain a better understanding of the world they operate in and how they achieve their results. The perceived importance of the “people” dimension of the organization increases and this might be due to the fact that organizations that apply a management model have realized the importance of the employees with respect to embarking on continuous improvements. Not only do CEO’s of organizations that apply management models put more emphasis on the “people” dimension they also report significant better human resource (HR) performance than non-users. This HR focus can also be seen in their willingness to apply performance related pay. There is a clear tendency towards the use of performance related pay increases among users of management models and for that approach to include all employees.

Lessons from the business community

So far we have argued that the history of management science shows three overriding models of management; scientific management, human relations and structural analysis. However, the search for alternative measures and models of performance has resulted in a vast variety of organizational models that describe various aspects of organizational performance. Furthermore the process through which management models are applied to identify opportunities for improvement becomes rather crucial. Companies that apply a management model experience a lot of challenges, but also gains ranging from increased employee involvement to improved bottom-line results. In the following chapters twelve organizations from around the world, operating in totally different markets, provide insights into their ‘customized’ approach in dealing with one or more of these

requirements as well as their experiences and benefits of applying a specific management model. These contributions were written by the companies themselves on the author's request.

a) Cilag (Switzerland)

Cilag AG is one of the leading Swiss firms in the pharmaceutical industry. In this chapter the company describes how demands for new and better management support has led to an organizational process whose emergence has been brought about with the help of management models at different levels of the business. The focus is on lessons from creating and implementing innovative management models.

b) Henkel (Germany)

Henkel is headquartered in Düsseldorf, Germany and operates in three business areas: Home Care; Personal Care; and Adhesives, Sealants and Surface Treatment. In the latter activity Henkel is one of the world leading producers. Henkel's social commitment is firmly embedded in its corporate values and its corporate history and in this chapter the company offers insights from one of the most comprehensive social commitment initiatives.

c) Danske Bank (Denmark)

Danske Bank is the leading financial institution in Denmark and one of the largest and highest rated in the Nordic region. Danske Bank has for many years measured and analyzed various aspects of business performance. In this chapter Danske Bank shares some of their insights with respect to mapping the value-chain in a commercial bank. The emphasis is on the relationship between employee satisfaction and motivation on one side and customer loyalty and customer satisfaction on the other.

d) Agrofair (Netherlands)

AgroFair applies a business model that might provide an answer for gaining market access for small producer organizations from developing countries. One of the central pillars of the company is the concept of co-ownership in a vertically integrated supply chain. The credentials are embedded in its vision statement of A Fair Price, A Fair Say and a Fair Share. This chapter describes the history of the AgroFair business model and analyses the crucial elements that have contributed to its success.

e) ABN AMRO Real (Brazil)

Since 1998, ABN AMRO Real, the third largest private bank in Brazil, has relentlessly worked to create a 'sounder bank for a sounder society', integrating social, environmental and economic aspects into the business. Its management model dates back to 2001 and is used to guide the organization towards achieving its ambitious vision and mission. In this chapter ABN AMRO Real demonstrates that the integration of sustainability into its model is a win-win-win strategy for shareholders, clients, employees and other stakeholders.

f) Danish Post (Denmark)

In 1998 Post Danmark launched a massive change process based on the TQM philosophy. This entailed systematic measures to steer the organization away from the traditional government service culture developing it towards a more modern and dynamic organizational culture. This chapter describes the process that lead to Post Danmark winning the Danish Quality Award in 2004 and being a finalist for the European Quality Award in 2006.

g) Australian Water (Australia)

The Water Corporation of Western Australia is a State Government-owned corporatized water utility, which operates over the huge 2.5 million square kilometer land area of Western Australia. The Water Corporation has embarked on a journey of business transformation, with environmental, social and financial

sustainability as the prime conceptual and ethical drivers. In this chapter the company describes lessons learned and benefits achieved.

h) Triodos Bank (Netherlands)

The Triodos Foundation was founded in 1973 with the aim of financing projects and ventures that had a societal cause. The Triodos Bank was established in 1980 in the Netherlands with the overriding goal to foster societal renewal. As an organization with a clear mission the Triodos Bank is built on human capital and deploys a management model that places the individual at its heart. The Triodos Bank takes up a bridging role between the individual and society at large. It is a place where individuals connect and collaborate to achieve things that cannot be done alone.

i) Vandemoortele (Germany)

Vandemoortele Deutschland GmbH is part of a Europe-wide food manufacturer (margarine, bakery-products, soya-products). The company supplies mainly German food retail chains which are dominated by discounters. In this chapter the company describes how the German system of resolving conflicts of interest through employee participation has not only served the country well during the period of post-war economic growth but also provides the ideal framework for a management model designed to minimize costs and resist fierce competition.

j) Lloyds TSB (England)

Lloyds TSB is a major banking and insurance group, predominantly UK-based, but with operations in some 30 countries around the world. The corporate vision is to make Lloyds TSB the best financial services company, first in the UK then across borders. In this chapter Lloyds TSB describes how their corporate responsibility strategy supports the corporate vision by helping to build a great place for people to work, a great place for customers to do business, and generating great returns for shareholders.

The experiences recorded are wide-ranging. They cover national quality award models, management models for fair trade, corporate social responsibility, organizational excellence and various aspects of organizational value-chains. The twelve models can be split into four different segments depending on whether or not they are internally or externally developed and whether or not they have a holistic focus or a single issue focus. This split is shown in Table 1.

	<i>Internal</i>	<i>External</i>
<i>Holistic</i>	Cilag ABN AMRO Real Bosch Gaz de France	Danish Post
<i>Single issue</i>	Henkel Danske Bank Triodos Vandermoortele Lloyds	Agro Fair Australian Water

Table 1: Grouping of models

It is evident that the majority of the models have been internally developed which is in line with the previously mentioned notion that the whole idea of management models is to provide a condensed version of reality – one by which managing complexity is facilitated. In this sense management models are organizational ‘disposables’. They serve a purpose at a given moment in time – inside and outside the organization. They facilitate communications about matters at hand. They also help to translate issues for different stakeholders. Depending on their degree of ‘maturity’ they can be just drawings with some unspecified arrows and suggestions of relationships.

More elaborated models focus on different aspects. It is assumed that models have at least the function of deliberately constructing and enacting the language about organizational design and direction. Besides their communicative function, models can support managers in steering the operations by reducing complexity. It is fascinating to explore how -and if- these models underlie the foundations of organizational design and operation, and in what way they actually provide 'help' to structure and manage day-to-day operations.

Concluding remarks

The presented management models seem to be based on an amalgam of (implicitly and explicitly used) theories. Some of these are so-called 'grand' theories such as social constructivism and system thinking and dynamics. The nature of these theories is such that they can be applied to almost any phenomenon. Others such as organizational learning, decision making, organizational development or value creation apply more strictly to organizations.

We assume that management models are an intrinsic part of a three step organizational process. Step one is the formulation of a policy, often translated into a business strategy. Such a policy is a complex statement about what the organization wants to be, how it wants to act and be known to its suppliers, its customers and society at large. Since a policy is most often a document leaving ample room for interpretation a step needs to be made towards 'translation. Such a translation can take the shape of directives, guidelines or codes of conduct. Yet the same declaration can also be used to elaborate how different elements and issues hold together. This leads to activities of structuring. This structuring not so much focuses on the structure of an organization but is a way of sense making. The result of this often iterative and collaborative process is a 'picture' naming and framing those elements that seem to be of importance of the (organizational) actors involved.

The *process* of creating a management model can often be more important than the result. It is in the process that people involved have to give meaning to different, often qualitative and broadly typified, complex constructs. Drilled down to its bare essence the

‘product’ of the process of creating a management model is a contextual interpretation of what matters, here and now and for the future.

Although the existence of management models within the business community is apparent, scholarly academic research on the nature and function of these models is scarce. Given the absence of more fundamental research the ontological and epistemological status of the concept of management models remains unclear, to say the least. Questions such as: “What constitutes a (good) management model?”, “What role and function do management models have?” and “What elements and issues do management models address, and why do they address them?” are wide open to investigation. These questions are relevant because management models are an intrinsic part of the organizational landscape. They appear in all shapes and sizes, very often claiming to be the solution to current and pressing problems. They are so common in organizational media, business literature, annual reports, corporate websites and internal memo’s, that one wonders why not more often questions are being raised regarding their nature, role and function. As such they provide a splendid opportunity for more scholarly research. The authors consider the outcomes of their present book - on which this paper was based - as a first step in that direction. But – as usual – more research is needed. So far we just scratched the surface.

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CHAPTER SIX

Corporate Social Responsibility and Organizational Excellence – Linking the Stakeholder Approach and Resource-Based Views

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Introduction

Corporate Social Responsibility (CSR) and Corporate Sustainability play an increasingly prominent role in the discussion on Organizational Excellence. For example, many of the "Guiding Points" added to the EFQM Excellence Model during its last refreshment in 2003 refer to Corporate Sustainability. In 2004 the European Foundation for Quality Management (EFQM) published a particular Framework for Corporate Social Responsibility.

Understanding CSR as an integral part of Organizational Excellence, socially and environmentally responsible corporate behavior is considered instrumental for long-term economic success. Often this assumption is based on an external-oriented perspective on the corporation. From this point of view, the business benefit of CSR originates from meeting the social and environmental expectations of the primary stakeholders, which the company depends on. CSR may reduce the risk of stakeholder sanctions and may lead to market-based advantages. This applies to the sales market as well as the labor market and the capital market. For instance, customers increasingly consider environmental product and service characteristics in making their buying decision and, in particular, highly qualified employees prefer companies that have a good reputation not only for their

financial success, but also for their social and environmental performance. And, as a part of a comprehensive risk management, CSR can attract capital investors with a long-term portfolio strategy.

From this external-oriented perspective, sustainable success of a company depends on its ability to meet the expectations of its environment. But there is also a rationale for the business benefit of CSR that is based on an internal-oriented perspective, i.e., a resource-based view. From this point of view, CSR leads to a long-term competitive advantage, if the CSR activities contribute to the creation of valuable and rare resources that are hard to imitate or substitute. Particularly, this refers to the intangible resources of the company, i.e., the skills of its employees, its corporate culture or its reputation.

It is obvious that the external and the internal perspective are not contradictory, but complement one another. For instance, the economic value of reputation as a hardly imitable and substitutable resource only exists in relation to the norms, values and attitudes of the external stakeholders. In the same way, imperfectly imitable and hardly substitutable skills of the employees only lead to a sustainable competitive advantage, if they enable the company to create products or services that meet the requirements of the customers. Thus, adaptation to external stakeholder expectations and the development of internal capabilities and resources are closely connected in realizing sustainable competitive advantages.

This paper provides a short overview of the basic arguments of both the instrumental stakeholder approach and the resource-based view. It presents arguments for the business benefit of CSR from both perspectives. Starting from these theoretical considerations we discuss the suitability of the EFQM Excellence models for linking both perspectives on CSR in a pragmatic way. We point out how a stakeholder approach and the resource-based view may complement one another in a CSR approach that is embedded in a broader Organizational Excellence framework.

CSR is an idea with a remarkably long academic history. Already in 1916 John Maurice Clark published a paper on the social responsibility of business. (Clark, 1916) In the 1950s the term "Corporate Social Responsibility" was used for the first time in an academic publication. (Bowen, 1953) For decades, the relationship between business and society has been discussed under headlines like "Corporate Social Responsibility" (e.g., Carroll, 1999), "Corporate Social Responsiveness" (e.g., Näsi, Näsi, Phillips, and Zyglidopoulos, 1997), and "Social Issues in Management" (e.g., Epstein, 1999). What is new about the present Corporate Social Responsibility trend is the fact that CSR and related approaches play an increasing role not only in management research and teaching but also in corporate practice. Today, more and more corporations commit themselves to the vision of sustainable development. They accept that the overall performance of a corporation is not only determined by financial results but also by its environmental and social performance. This is associated with a perspective that not only considers the concerns of shareholders but also the interests of other stakeholder groups.

Different reasons can be given for the increased relevance of Corporate Social Responsibility and related concepts:

- Worldwide communication networks increase the transparency of large companies and their global activities. At the same time, they improve the organizational ability of activist groups and non-governmental organizations. When controversial business policies become public, companies face opponents that are able to organize extensive campaigns in a short period of time. Mainly large companies with well-known brands are vulnerable to media campaigns initiated by non-governmental organizations (NGO) or activist groups.
- It is becoming more and more obvious that the state alone is not able to provide the social services which the citizens demand and which are socially required (e.g., ample child care supply). Responsibilities for such issues change from public authorities to private sectors.
- In the last years and decades various business scandals increased the public interest in corporate responsibility, e.g., disasters of insecure oil-tankers registered under the flag of convenience, controversial relations between companies and

despotic regimes, inhumane working conditions in the manufacturing of sports wear ("sweatshops"), personal enrichment of managers, or the reduction of jobs with high business profits at the same time.

Different concepts have been established around the idea of corporate responsibility. Even though there are certain differences between those concepts, terms such as Corporate Social Responsibility, Corporate Sustainability and Corporate Citizenship all stand for business thinking and acting that does not only focus on the economical success of a corporation and its shareowners, but also considers the societal and environmental prerequisites and consequences of this success.

"Corporate Social Responsibility" means in general the commitment of companies to behave socially and environmentally responsible while striving for their economic goals. This means that CSR is more comprehensive than the related concepts "Corporate Governance" and "Corporate Citizenship" (Balderjahn, 2004). CSR includes the company's relations with all its stakeholders, from market-related stakeholders (customers, shareowners, suppliers), to internal (e.g., employees, board of directors) or societal stakeholders (e.g., government, NGOs). It is assumed that the variety of the stakeholders and their concerns lead to corporate responsibility including economical, environmental and social aspects.

CSR is not limited to single initiatives or programs but understands environmental and social responsibility as an integral part of everyday business. Today, CSR often refers to the global vision of sustainable development. Therefore, CSR is hard to distinguish from the idea of "Corporate Sustainability". Authors using the term "Corporate Sustainability" often put stronger emphasis on environmental issues compared to social aspects.

"Corporate Governance" primarily refers to transparent leadership and control of the corporation and focuses on the relationship between the company and its investors. Corporate Governance attracted special attention as a result of different accounting scandals (e.g., Enron, WorldCom). For instance, in 2002 the German Corporate

Governance Code was established to make the German governance system more transparent for national and international investors and thus strengthening the trust in German companies. The executive boards and the supervisory boards of stock corporations in Germany annually commit themselves to this code.

"Corporate Citizenship" refers to the idea of the company as a "good citizen" and focuses on the company's community engagement. Corporate Citizenship emphasizes the relevance of business initiatives in its social environment such as the support of cultural and social institutions.

The growing interest in corporate responsibility can also be noticed in international political initiatives. In 2001 the European Commission launched a Green Paper describing the European Framework for Corporate Social Responsibility. In retrospect, this can be seen as the initial point of a broad multi-stakeholder dialogue on the social responsibility of business companies in Europe. The initiative aims to foster CSR as a business contribution to sustainable development. The definition of CSR used in the Green Paper reflects a concept "whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Commission, 2001:8). In this sense, to act socially responsible means not only abiding by the legal regulations, but also going beyond compliance and investing more into human capital, the environment and the relations with stakeholders.

Another prominent initiative is the UN Global Compact, a network that brings together companies with UN agencies, labor and civil society organizations. It was proposed by the United Nations Secretary General in 1999, and seeks to advance responsible corporate citizenship so that business can contribute to the challenge of sustainable development in a globalizing economy. Today, the Global Compact has hundreds of corporate members from all over the world. The network supports companies in realizing responsible corporate behavior, but also serves as a platform to publicize company's progresses in social and environmental issues. (Leipziger, 2003)

Executives are in need of a useful framework for thinking about CSR because they understand that the public expects them to balance profits with responsibility. (Carroll, 2004) One of the main challenges for companies is to integrate CSR into their core business and to organize their firm-specific CSR approach. (Jonker and de Witte, 2006) In this context, CSR has also been introduced into the discussion on Organizational Excellence. For instance, some authors have transferred principles from Quality Management to CSR issues. This leads to an approach of "Total Responsibility Management" (Waddock and Bodwell, 2007; Waddock, Bodwell, and Graves, 2002). Others have analyzed CSR within general Business Excellence frameworks and developed an audit instrument for assessing an organization's position regarding social responsibility (Kok, van der Wiele, McKenna, and Brown, 2001). The discussion on CSR also has been influencing international Business Excellence Models. Looking at the criteria of those models one can see a stronger emphasis on social and environmental issues than in the past. For instance, many of the "Guiding Points" added to the EFQM Excellence Model during its last revision in 2003 refer to corporate sustainability. In addition, CSR and sustainability have been defined as "Red Threads" through the EFQM Model. (EFQM, 2003a) In 2004 a particular EFQM Framework for Corporate Social Responsibility has been published. (EFQM, 2004)

Understanding CSR as an integral part of Organizational Excellence, socially and environmentally responsible corporate behavior is considered instrumental for long-term economic success. In most cases, this assumption is based on an external-oriented stakeholder perspective on the corporation. But there is also a rationale for the business benefit of CSR that is based on an internal-oriented perspective, i.e., a resource-based view.

Two perspectives on corporate social responsibility

In the following we give an overview of the basic arguments of both the stakeholder approach and the resource-based view. We present arguments for the business benefit of CSR from both perspectives.

Stakeholder Approach and Corporate Social Responsibility

Since the groundbreaking book "Strategic Management: A Stakeholder Approach" by R. Edward Freeman was published in 1984 stakeholder theory has attracted enormous attention from management theorists and has become one of the dominant perspectives on the relationship between companies and their environment. Because the basic ideas of Freeman's approach have been further developed in different directions, at present no consistent stakeholder theory exists. This differentiation is reflected in diverse rationales for the economic and/or ethical necessity of stakeholder orientation and in various definitions, which groups have to be considered as stakeholders. In the context of CSR approaches, a stakeholder perspective on the company can provide a conceptual basis for the explanation of "good" corporate behavior. But in many cases, stakeholder orientation is often introduced rather as a mindset of managers than as a theoretical approach for analyzing the relationship between organizations and their environment.

Stakeholder Theory is concerned with the relationship between companies and external social actors that may have differing expectations about the corporation's activities and outcomes. Because of its applicability for the conceptual integration of normative aspects into the business corporation Freeman's idea of a stakeholder-oriented management notably attracted interest in the academic debate on CSR and business ethics – even though it was originally developed for strategic management (Freeman, 2004). As Archie Carroll (1991:43) has stated: "There is a natural fit between the idea of corporate social responsibility and an organization's stakeholders." Sometimes CSR even has been regarded as a branch of stakeholder theory (Wentges, 2002). In CSR approaches stakeholder orientation has the character of means as well as ends: On the one hand, meeting the expectations of stakeholders is part of some CSR definitions (European Commission, 2001), on the other hand, it is considered as instrumental for long-term financial success (Jones, 1995).

Donaldson and Preston (1995) suggested separating stakeholder theory into descriptive, instrumental, and normative categories:

- Descriptive stakeholder theory describes the corporation as a constellation of cooperative or competitive interests of different social actors. On this basis it explains empirically observable corporate behavior or predicts future behavior. Sometimes descriptive statements also refer to the behavior of stakeholders (e.g., Frooman, 1999).
- Instrumental stakeholder theory focuses on the relationship between stakeholder management and economic performance. Often this includes implicit or explicit recommendations for the achievement of financial goals through a stakeholder-oriented management approach (e.g., Jones, 1995; Berman, Wicks, Kotha, and Jones, 1999).
- Normative stakeholder-theory is based on the assumption that the legitimate interests of all stakeholders are of intrinsic value and no stakeholder group has priority over others. Donaldson and Preston take up this normative position themselves arguing that the shareowner model of the corporation is not only descriptively inaccurate but also normatively unacceptable.

Many contributions to stakeholder theory are characterized by a combination of descriptive, instrumental, and normative statements (Donaldson and Preston, 1995). For instance, Freeman (2004) stated that he never had interest in the question, if his approach is descriptive of the way companies act, or prescriptive how they should act, or instrumental. He describes his own approach as a combination of all three. He argued for a "managerial" theory and a "pragmatist methodology" that includes descriptive as well as instrumental and normative aspects.

The assumption that all legitimate stakeholder interests should be considered equally can be seen as the normative core of most academic contributions to stakeholder theory. From this perspective, the stakeholders of a company can be identified by their legitimate interests in the corporation, regardless if the corporation has any functional interest in them (Donaldson and Preston, 1995). In contrast, Frooman (1999) distinguished between "moral stakeholders" ("the one who is affected by the firm") and "strategic stakeholders" ("the one who can affect a firm") and categorized the literature based on the underlying

stakeholder definition into moral and strategic stakeholder approaches. For instance, the stakeholder definition "groups to whom the corporation is responsible" (Alkhafaji, 1989:36) represents a moral orientation, whereas "Stakeholders have an interest in the actions of an organization and [...] the ability to influence it" (Savage, Nix, Whitehead, and Blair, 1991:61) stands for a strategic approach.

From a moral point of view, the essential question for the identification of a company's stakeholders is which interests have to be regarded as legitimate (Mitchell, Agle, and Wood, 1997; Carroll, 1991). From a strategic (or instrumental) perspective the question is which groups have to be considered in corporate decisions because of their ability to influence the economic success, or to threaten the continued existence of the company (Freeman, 1984). The latter implies that stakeholders and their interests will not be weighted equally and therefore have to be prioritized. From a purely strategic point of view, the fact that a person or group is affected by the activities of the company – or has a legitimate interest for any other reason – does not necessarily mean that the interests have to be considered by the company (O'Higgins, 2002).

The typology developed by Savage et al. (1991) represents such a strategic interpretation of the relationship between the corporation and its stakeholders. Besides the stakeholders' potential to threaten the organization, the typology also includes their potential to cooperate. Whereas the potential for threat refers to the ability and willingness of a stakeholder to adversely influence the company, the potential for cooperation stands for the often-ignored fact that some stakeholders may also provide chances for collaboration to the benefit of the company (Savage et al., 1991). The ability to positively or negatively influence the corporation relies on the fact that the corporation depends on resources that are controlled by the stakeholders (Pfeffer and Salancik, 1978). That does not only concern financial resources and tangibles like raw materials and supplies, but also intangibles such as employee qualification, information, network access or legitimacy.

The relevance of a strategic stakeholder approach in the context of CSR can be seen in its potential to explain the economic benefit of compliance with social and environmental

stakeholder expectations. The stakeholder approach provides arguments for the recommendation of societal and environmental strategies and measures, without solely appealing to the moral values of the executives. If the primary stakeholders whom the corporation depends on for its survival expect the company to act in a socially and environmentally responsible manner there obviously is a business case for CSR – but only if the influential stakeholders really have such demands. Recent survey studies indicate that stakeholder expectations related to CSR actually gain in importance (e.g., Dawkins and Lewis, 2003). For instance, customers increasingly consider environmental product and service characteristics in making their buying decision and, in particular, highly qualified employees prefer companies that have a good reputation not only for their financial success but also for their social and environmental performance. And, as a part of a comprehensive risk management, CSR can attract capital investors with a long-term portfolio strategy.

Whereas the empirical evidence for the positive effects of CSR on a firm's financial performance is ambiguous, studies clearly indicate that socially irresponsible behavior has a negative influence on financial performance (Wood and Jones, 1995). It seems that stakeholders do not consistently reward CSR – but they punish bad social behavior (O'Rourke, 2005). Therefore, avoiding stakeholder sanctions is an important benefit of responsible corporate behavior.

Companies have relationships with various stakeholders that have differing economic, social and environmental interests, but also different potentials to influence the corporation. It is worth questioning if the realization of a stakeholder approach under this condition really facilitates CSR. Freeman (2004:231) argues: "Since stakeholders are defined widely and their concerns are integrated into the business processes, there is simply no need for a separate CSR approach." According to this argument, the stakeholders' interests and expectations cover all areas of CSR in a sufficient manner. But the question arises whether, for instance, environmental issues get enough attention in a CSR approach that is solely defined over the demands of the stakeholders. This apprehension leads to the idea that the natural environment itself should be regarded as a

stakeholder of the corporation in order to strengthen its salience to managers (Driscoll and Starik, 2004; Starik, 1995; Stead and Stead, 2000). But not only nature lacks ability to enforce its claims. Even some social stakeholders do not have the ability to assert their legitimate interests and therefore are dependent on other stakeholders to argue for their interests (Starik, 1995). For instance, future generations and people in developing countries rely on the altruism of customers, investors or NGOs to get companies to consider their needs. (Steimle, 2008)

A strategic stakeholder approach focuses on the economic goals and the continued existence of the corporation. Therefore, it can be referred to as "ethically neutral". In the context of CSR the question is whether such an ethically neutral approach has the potential to combine economic interests with goals that are desirable from a normative point of view. It is quite obvious that considering the interests of various influential stakeholders may lead to an enhanced economic and moral benefit compared to a lopsided focus at the shareowners: For instance, a clear focus on customer needs and attention to the legitimate interests of the employees are not only desirable from a normative perspective. They may also lead to stronger loyalty and retention, higher satisfaction and motivation – and therefore are drivers of economics success. It is less obvious that it makes economic sense to consider the legitimate claims of those stakeholders who do not have direct impact on the economic performance of the corporation. Much depends on the time horizon of corporate decisions:

- Based on a short time perspective, decisions and measures will focus on cost reduction and the increase of shareholder value. In this case, stakeholder orientation is reduced to one single interest group: the shareowners. For managers whose performance is assessed on financial quarter results it is hard to accept a long-term perspective.
- In a mid-term perspective, a more strategic view that considers the interests of the primary stakeholders is more promising because it improves the flow of critical tangible and intangible resources. For instance, participation of the employees and attention to their legitimate interests may increase acceptance of corporate decisions as well as motivation and loyalty. Strategic alignment towards the

customers, e.g., including a prompt and fair handling of complaints and a customer dialogue, support the retention of existing customers and the acquisitions of new ones. Involvement of key suppliers into joint research and development projects decreases transaction costs and is a prerequisite for the customer-oriented optimization of the supply chain.

- In a long-term perspective, which is also part of the vision of (corporate) sustainability, the situation looks different: Social and environmental prerequisites and impacts of corporate activities gain relevance – and the number of stakeholders that have to be considered increases. In the long run, one of the most critical resources that every company relies on is legitimacy, i.e., the societal "license to operate", which requires compliance with social norms and values. The example of nuclear power plants in Germany shows that technologies, operations and products, which lack legitimacy within the majority of society members, do not have an economic future. Orientation towards social norms and values therefore is part of a long-term strategy of minimizing risks.

Another problem that arises in the long run is absolute scarcity of natural resources. Facing the foreseeable shortages of resources, it is rational to engage in the preservation and reproduction of natural resources (Müller-Christ, 2003) or to invest in substitutes in order to secure the basis for the corporation's business activities. This logic is also valid for the delivery of intangible resources from social stakeholders: If employees' skills become a scarce limitational factor there is obviously a business case for CSR measures such as employer support for child care, engagement in occupational training initiatives or maintaining the employability of elder employees.

It can be summarized that, from an external-oriented perspective on the corporation, sustainable success of a company originates from its ability to meet the expectations of its social environment. The business benefit of CSR originates from meeting the demands of the stakeholders, which the company relies on. Which stakeholders have to be considered depends on the underlying time horizon: The longer the time perspective the broader the range of stakeholder interests that have to be considered. CSR may reduce the risk of

stakeholder sanctions and may lead to market-based advantages, i.e., it helps securing the flow of critical resources. This applies to the sales market as well as the labor market and the capital market. Legitimacy can also be seen as a critical resource – but it cannot be purchased like the others. Therefore, companies have to comply with social norms and values to secure their "license to operate".

Resource-Based View and Corporate Social Responsibility

Fundamental contributions to the resource-based view of the corporation have been made by Penrose (1959), Wernerfelt (1984), Prahalad and Hamel (1990) and Barney (1991). Whereas the stakeholder theory focuses on the relations between the corporation and its external environment, the resource-based perspective strongly emphasizes internal characteristics of the corporation. It analyzes how corporations create sustainable competitive advantages by utilizing and combining firm-specific resources. Although the resource-based view has been one of the most dominant perspectives in management research in the last years, there is no commonly accepted definition of what a resource is and no clear separation from related concepts such as "capabilities" or "competencies". According to Barney (1991:101) the resources of a firm "include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness." Wernerfelt (1984:172) describes resources "as those (tangible and intangible) assets which are tied semi permanently to the firm".

For realizing competitive advantages the company has to be capable of mobilizing, coordinating and combining its resources. Thus, by using the term "capabilities" we refer to a company's capacity to manage its resources effectively. In this sense, key capabilities of a company include e.g., skills of managers and employees as well as organizational processes and routines.

Which resources may produce sustainable competitive advantages and therefore are crucial for the company's success depends on several criteria (Barney, 1991; Priem and Butler, 2001; Dierickx and Cool, 1989). Resources can lead to competitive advantages if they are

1. rare (i.e., not widely held) and
2. valuable (i.e., they contribute to firm efficiency or effectiveness).

Those competitive advantages may be sustainable, i.e., long-lasting, if the resources simultaneously are

3. hard to imitate (i.e., they cannot easily be replicated),
4. not substitutable (i.e., there is no other resource that can fulfill the same function) and
5. not tradable (i.e., they cannot be sold or purchased on markets).

Resources are most difficult to imitate when they are

- path dependent (i.e., they have a specific history)
- causally ambiguous (i.e., the actions needed to create them are not fully known)
- socially complex (i.e., they are difficult to change in the short-term) (Barney, 1999; Branco and Rodrigues, 2006).

Looking at these criteria one can see that tangible resources are less likely to produce sustainable competitive advantage because they are usually easier to imitate or substitute than intangible resources and, in many cases, can be purchased on resourcing markets. In contrast, intangibles like corporate culture or reputation cannot be sold or bought and are hard to imitate, because they develop over time, are often causally ambiguous and socially complex.

From a resource-based perspective on CSR the question arises whether companies can achieve a sustainable competitive advantage by practicing CSR. Several authors state that resource-based perspectives are useful for understanding why companies engage in CSR (Branco and Rodrigues, 2006; McWilliams, Siegel, and Wright, 2006). Based on the resource-based view, others argue that CSR measures, such as proactive environmental strategies, can facilitate sustained competitive advantage. (e.g., Hart, 1995; Russo and Fouts, 1997) Orlitzky, Schmidt, and Rynes (2003) give several resource-based arguments for a positive relationship between CSR and financial performance. They distinguish between internal and external benefits of CSR.

Internal benefits. By practicing CSR companies may develop new capabilities that are related to corporate culture, technology, structure and human resources. These capabilities, which are created internally by practicing CSR may enable the organization to better utilize its resources. In contrast to the below-mentioned external benefits, it is widely irrelevant for the development of internal capabilities whether external stakeholders notice the CSR practices of the company. Some examples for internal benefits are:

- When pre-emptive approaches of CSR are established this may lead to better management skills, structures and information systems for continuously scanning the environment and thus increase the organizations preparedness for external changes and crises. (Orlitzky et al., 2003)
- Resource-efficient technologies and processes may combine improved environmental performance with cost savings, for instance, by using less energy and materials. (e.g., Branco and Rodrigues, 2006)
- Socially responsible employment practices, e.g., including high workplace quality, fair wages, child care support or a corporate health management, may have positive effects on employees' satisfaction and motivation as well as on loyalty and commitment. This may lead to a higher productivity of the employees and reduced costs of absenteeism and turnover (e.g., Branco and Rodrigues, 2006).
- CSR related concepts such as empowerment, individual and organizational learning as well as employee participation help to enhance employees' and managers' skills. In addition these concepts are conducive to a trustful corporate culture and may facilitate an efficient cooperation in the company.

External benefits. External benefits of CSR are those which refer to corporate reputation (Orlitzky et al., 2003). From a resource-based perspective reputation is an intangible resource that is difficult to imitate because of its path dependency, causal ambiguity and social complexity – and therefore may produce a sustainable competitive advantage. There are theoretical as well as empirical arguments for the assumption of organizational reputation as a core resource that produces sustainable competitive advantages and leads

to higher economic performance (Carmeli and Cohen, 2001). Companies with a good reputation for their responsible behavior may have several advantages in the relationship to their stakeholders. They may attract better employees (Turban and Greening, 1997) and facilitate their access to capital by improving their relation with bankers and investors (Orlitzky et al., 2003, Branco and Rodrigues, 2006). A good reputation may also serve as a distinguishing product feature. Especially on markets where buying decisions are based mainly on brand images companies may use their CSR performance as a sales argument – but, on the other hand, companies acting in such markets are especially vulnerable in case of a loss of reputation (O'Rourke, 2005).

Organizations with a good reputation are also considered more trustworthy (Suchman, 1995). Stakeholders tend to act more cooperatively if they perceive a company as trustworthy and legitimate (Harrison and St. John, 1998). In this case, costs of monitoring as well as costs of conflicts may decrease. Corporate reputation and legitimacy are related concepts: Both emerge in the interaction between the corporation and its stakeholders and are socially constructed. Whereas legitimacy requires compliance with the minimum requirements of a specific stakeholder, reputation only accrues if expectations are exceeded (Zyglidopoulos, 2003). Therefore, securing legitimacy can be understood as a more defensive strategy of meeting minimum stakeholder requirements to avoid sanctions, whereas creating CSR reputation is a more pro-active strategy that goes beyond stakeholder expectations to create competitive advantages.

The brief descriptions of the CSR benefits show that the stakeholder approach and the resource-based view are not contradictory, but complement one another. For instance, the economic value of reputation as a hard to imitate and substitute resource only exists in relation to the norms, values and attitudes of the stakeholders. In the same way, imperfectly imitable and hard to substitute skills of employees only lead to a sustainable competitive advantage, if they enable the company to create products or services that meet the requirements of the customers. Thus, adaptation to external stakeholder expectations and the development of internal capabilities and resources are closely connected in realizing sustained competitive advantages. Therefore, a perspective that

integrates internal and external aspects is necessary. The EFQM Model for Excellence provides such a dual perspective (Ruiz-Carrillo and Fernández-Ortiz, 2005).

The EFQM Excellence Model as an Integrating Framework

Since its first publication in 1992, the EFQM Excellence Model underlying the European Excellence Award has been revised and further developed several times. Figure 1 shows the current structure after the last revision in 2002. A total of 1000 points is divided into nine elements ("criteria") against which the organization is to be assessed. The criteria are subdivided into 32 criterion parts. Each criterion part is further detailed in a number of guidance points. These guidance points should not be understood as mandatory requirements or checklists. They are intended to exemplify the meaning of the criterion parts.

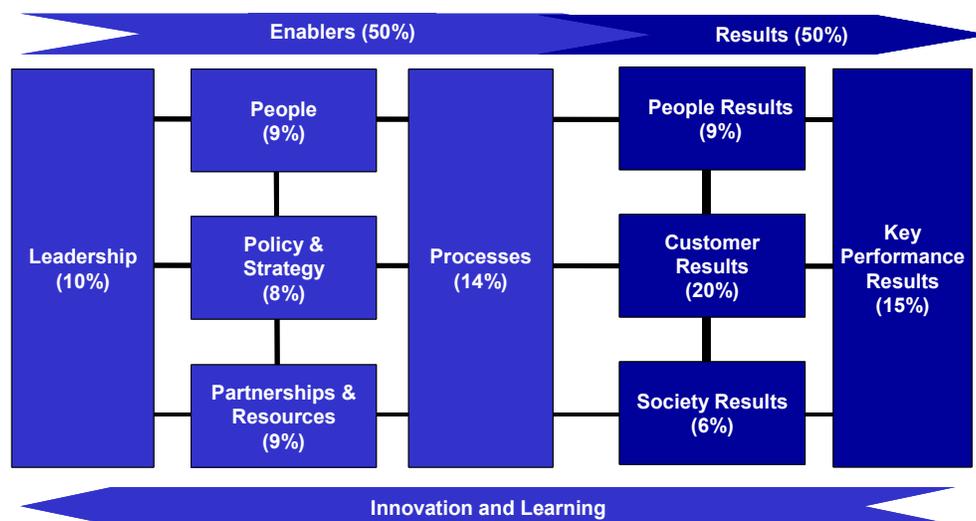


Figure 1: EFQM Excellence Model (EFQM, 2003a:12)

The model not only serves as an assessment framework within the EFQM Excellence Award, but also as a basis for internal self-assessments of organizations. A periodical (in most cases annual) self-assessment against the model criteria provides a basis for an advanced reporting system that considers broader base data than only "conventional" financial figures. The organizational strengths and areas for improvement that are

identified through self-assessment provide an important input into the short-term as well as the long-range planning of the company.

The so called Fundamental Concepts of Excellence are the basis of the model and are reflected in all criteria and criterion parts:

- Results Orientation
- Customer Focus
- Leadership and Constancy of Purpose
- Management by Processes and Facts
- People Development and Involvement
- Continuous Learning, Innovation, and Improvement
- Partnership Development
- Corporate Social Responsibility

In the following we point out how the EFQM Model combines stakeholder orientation and the resource-based view and facilitates a CSR approach that is integrated in the overall management system of a company.

Stakeholder Orientation and CSR in the EFQM Excellence Model

The interest groups and their importance for the organization are mentioned in the descriptions of all Fundamental Concepts – mostly from an instrumental point of view. The concept of Corporate Social Responsibility has an explicit reference to the stakeholder approach:

"Excellence is exceeding the minimum regulatory framework in which the organization operates and to strive to understand and respond to the expectations of their stakeholders in society." (EFQM, 2003a:9)

The remainder of the description of this Fundamental Concept is about the relationship between the organization and its stakeholders. The organization is expected to act transparently, to give account of its activities and to cultivate and maintain a relationship of confidence to its stakeholders. Social responsibility and ecological sustainability should be an integral part of the organization and be reflected in its values and behavior.

Being aware of the organization's impact on current and future community and striving to minimize any adverse impacts are also aspects of social responsibility (EFQM, 2003a). The actual model contains five "Enabler Criteria" and four "Results Criteria". The Enabler Criteria cover which approaches the organization practices; the Results Criteria cover what the organization achieves through these approaches. In order to realize continuous improvement Results are used to further enhance the Enablers.

Kok et al. (2001) have stated that the EFQM Model does not include ethical aspects related to CSR. However, during the last model revision in 2002 CSR has been strengthened within the model. Since then, all criteria include guidance points that are closely related to the vision of sustainable development. In the following, those guidance points are listed that bear clear reference to societal or environmental aspects of sustainability (EFQM, 2003a). In addition, the model includes a number of guidance points that represent economic sustainability because they represent a managerial long-term perspective.

Criterion 1: Leadership

- 1a Leaders develop the mission, vision, values and ethics and are role models of a culture of Excellence.
 - Developing and role modelling values, ethics and public responsibilities that support the culture.
- 1c Leaders interact with customers, partners and representatives of society.
 - Promoting, supporting and engaging in activities that aim to improve the global environment and the organization's contribution to society with the view to respecting the rights and interests of future generations.
- 1d Leaders re-inforce a culture of Excellence with the organization's people.
 - Promoting and encouraging equal opportunities and diversity.

Criterion 2: Policy and strategy

- 2a Policy and Strategy are based on the present and future needs and expectations of stakeholders.

- Identifying, understanding and anticipating the needs and expectations of current and future stakeholders including customers, employees, partners, society and shareholders.
- 2b Policy and Strategy are developed, reviewed and updated.
 - Analyzing data for both long and short term social, environmental, safety and legal issues.
 - Analyzing data on the effects of products and services throughout their entire life-cycle.
- 2c Policy and Strategy are developed, reviewed and updated.
 - Balancing both long term and short-term needs and expectations of stakeholders.
 - Aligning and continuously developing social and environmental standards with partners.

Criterion 3: People

- 3a People resources are planned, managed and improved.
 - Involving employees, and their representatives, in developing human resource policies, strategies and plans.
 - Promoting and ensuring fairness in all terms of employment including equal opportunities policies, strategies and plans.
- 3b People's knowledge and competencies are identified, developed and sustained.
 - Developing, mentoring, and training all people to help them realize and attain their full potential.
 - Designing and promoting individual, team and organizational learning opportunities.
- 3e People are rewarded, recognized and cared for.
 - Promoting awareness and involvement in health, safety, the environment and issues on social responsibility.

- Setting the levels of benefits, e.g., pension plan, health care, childcare.
- Recognizing and taking account of diversity and different cultural backgrounds promoting social and cultural activities.

Criterion 4: Partnerships and Resources

- 4c Buildings, equipment and materials are managed.
 - Utilizing resources in an environmentally sound manner throughout the entire life-cycle of a product.
 - Reducing and recycling waste.
 - Minimizing any adverse global impact of products, production processes and services.
 - Optimizing transportation usage.
- 4d Technology is managed.
 - Identifying and evaluating alternative and emerging technologies in the light of their impact on business and the society.
 - Developing innovative and environmentally friendly technology (i.e., conserving energy and resources, minimization of waste and emissions, encouraging recycling and re-use).

Criterion 5: Processes

- 5d Products and services are produced, delivered and serviced.
 - Servicing products and services, including recycling where appropriate.
- 5e Customer relations are managed and enhanced.
 - Advising customers on the responsible use of products.

Looking at the Results Criteria a similar picture arises. The Results are structured by the most relevant stakeholder groups: Customers, employees, society and shareowners. "Customer Results" amount to 20% of the total score; "People Results" are weighted with 9. "Key Performance Results" include financial and non-financial indicators that are of particular interest for shareowners and are weighted with 15%. "Society Results" (6%)

cover achievements that, for instance, refer to the organization as a responsible citizen, to the reduction of adverse environmental or social impacts of its products and services, and to its image in the public.

Thus it appears that the Results Criteria are characterized by a clear orientation towards the corporate stakeholders. Especially in criterion 8 (Society Results) stakeholder expectations are considered that are not directly related to the economic performance of the organization. The alignment towards various stakeholder demands and expectations expands the perspective from an orientation solely towards shareowner interests to a broader concept of effectiveness that also includes non-economic impacts of business. Particularly within People Results and Society Results issues are considered that refer directly to CSR. Customer Results include some environmental aspects. Sustainability of results is a requirement throughout all Results Criteria.

From the beginning, the EFQM Model weighted impacts on society stronger than other excellence models (Zink, 2004). During the last model revision such normative aspects even have been strengthened and now are included in all criteria. In the current EFQM Model brochure sustainability is defined as a so-called "Red Thread", i.e., as a concept that is of relevance for the entire model. In addition, Corporate Social Responsibility is not only one of the eight Fundamental Concepts, but also such a Red Thread through the model (EFQM, 2003a).

Understanding CSR as sustainable development at a corporate level, additional aspects gain relevance that are not mentioned in the model so far, e.g., assessment of suppliers regarding compliance with environmental or social standards, or a comprehensive and transparent sustainability reporting to stakeholders. In principle, the EFQM Model is open for such additional issues. The guidance points exemplifying the criterion parts serve as an orientation when self-assessing against the model criteria, but explicitly do not have prescriptive or mandatory character. This applies for the Enablers as well as the Results Criteria. The open character of the EFQM Model is a major difference to other international excellence model, for instance the U.S.-American Baldrige Criteria for

Performance Excellence. Therefore, it is applicable as a framework for the assessment and continuous improvement of a company-specific CSR approach, if criterion parts are interpreted appropriately.

The different weightings of the Results Criteria show that the stakeholders are not considered equally relevant in the model. In particular, societal stakeholders, e.g., public institutions, non-governmental organizations and the local community, are weakly represented by the "residual criterion" Society Results. Thus, the criterion structure and weightings still tend to an instrumental approach putting emphasis on the stakeholders, which directly affect the economic performance of the company (Kok et al., 2001). From a descriptive point of view the weightings of the criteria may be realistic, but it is another question, whether they are also appropriate from a normative CSR perspective. EFQM explicitly points out that the criteria weightings can be changed according to a company's specific requirements (EFQM, 2003b). The weightings of the Results Criteria may be adjusted in order to realize balanced consideration of economic, environmental and social goals and to provide a suitable framework for the assessment of a company's CSR performance.

The Resource-Based View and CSR in the EFQM Excellence Model

Assessing the management of tangible and intangible resources in organizations is a major focus of the EFQM Model. There is not only a specific criterion called "Partnerships and Resources", but also strong reference to the resource-based perspective in other criteria. The model is based on a broad concept of resources that includes tangible resources (e.g., buildings, equipments, financial assets) as well as intangible resources and capabilities (e.g., knowledge and skills, processes and routines, reputation, network access).

Following Ruiz-Carrillo and Fernández-Ortiz (2005) who have analyzed each criterion and criterion part of the EFQM Model in light of the resource-based view, the resource orientation of the EFQM Model can be summarized as follows:

- The criterion "Leadership" measures the managerial capabilities of the company.

- The criterion "Policy and Strategy" assesses and links the managerial capabilities with the viability of the strategy implementation.
- The criterion "People" assesses and measures capabilities based on the human resources, particularly those related to knowledge training and learning.
- The criterion "Partnerships and Resources" assesses and measures a core set of organizational resources. It also assesses how the organization plans and manages its external alliances.
- The criterion "Processes" assesses and measures, among other things, the organizational routines generated by the company.
- The criterion "Customer Results" identifies the resources "reputation of the company" and "customer loyalty".
- The criterion "People Results" assesses capabilities based on human resources.
- The criterion "Society Results" identifies the resource "reputation of the company".
- The criterion "Key Performance Results" identifies the business success of the company that was achieved through the Enablers.

Several of the CSR related criterion parts and guidance points of the EFQM Model (see above) bear relation to the internal benefits of CSR. For instance, promoting and encouraging diversity (see Crit. 1d; 3e) may enhance an organization's creativity and problem solving capacity. Involving employees, establishing fair employment conditions, rewarding and recognizing employees (Crit. 3a; 3e) may have positive effects on motivation. Training people and promoting learning opportunities for individuals and groups (Crit. 3b) may improve knowledge and skills. Conserving energy and resources, reducing waste and optimizing transportation usage (see Crit. 4c; 4d) may have positive effects on costs – to name just a few examples of internal CSR benefits addressed in the model.

The external benefits of CSR that are related to corporate reputation are, in particular, addressed in the Society Results. It is asked how the company and its social and environmental impacts are perceived in the public. Within the other Results Criteria CSR plays a less prominent role. Therefore, to provide an adequate basis for assessing the CSR

approach of a company, additional aspects that directly refer to stakeholders' perceptions of the CSR performance should be added to the model. The EFQM Framework for CSR (see below) can serve as a source for such additional indicators.

Periodical self-assessments against the EFQM Model constitute a process of learning and continuous improvement. In doing so, stakeholder approach and resource-based perspectives are combined systematically: Within the Enabler Criteria, leaders are expected to use their managerial capabilities to develop and implement a Policy and Strategy that is based on stakeholder needs and expectations – including the financial claims of shareowners, but also the interests of other stakeholder groups. In order to realize this Policy and Strategy the company should use its capabilities to mobilize and combine its tangible and intangible resources. Corporate culture and reputation, skills and knowledge of the people, key alliances, financial assets, technologies and equipment as well as processes and organizational routines should be utilized to meet the economic, ecological and social expectations of the stakeholders wherever possible and, in case of conflicts, to balance competitive interests. Within the Results Criteria, the achievement of the organization is measured against the demands of the stakeholders. During the management process, the results should be continuously used to further develop and improve the Enablers, i.e., the company's capabilities and resources.

Considering CSR in the EFQM self-assessment provides information about the maturity and performance of the CSR approach and its integration into the overall management system. On the one hand, this information can be used internally for the improvement of the CSR approach as a part of "normal" management and operations – and thus further strengthen the internal benefits of CSR.

On the other hand, the results of a self-assessment can provide a basis for a comprehensive and systematic reporting to the stakeholders that integrates economic, environmental and social information – and thus further strengthen the external benefits of CSR by increasing the company's reputation.

The EFQM Framework for CSR

In 2004 the EFQM published a Framework for Corporate Social Responsibility (EFQM, 2004). In this framework CSR is understood as sustainable development on a corporate level, including economical, ecological and social dimensions. The framework is based on a formal “Memorandum of Understanding” between the EFQM and the Global Compact and reflects a moral stakeholder approach – in the sense of Frooman (1999) – incorporating all persons or groups, that actually, or potentially affect the organization or are affected by the organization in some way (EFQM, 2004:8). Based on this approach CSR is supposed to increase the long-term profitability of the company, a better image of the corporation and its brands, differentiation advantages, higher employee motivation and lower risks as a result of stable and trustful stakeholder relations are considered to be key drivers of success.

The CSR framework keeps the structure of the EFQM Model consisting of five Enabler Criteria and four Results Criteria. Compared to the "original" model it focuses much more on ethical management, on the environmental and social prerequisites and impacts of business and on a close dialogue with the stakeholders. In addition, issues are included, which have not been addressed in the EFQM Model so far, e.g., human rights and employment conditions at supplier plants.

Just like the general EFQM Model the CSR Framework can be used for periodical self-assessments. It may also be applied in companies that do not have experience with the EFQM Excellence Model. In this case, because of the proven structure and the systematic assessment, positive effects may be also realized on the general management approach of the company (EFQM, 2004). However, a self-assessment based on the CSR framework should not be seen as an equal substitute for a self-assessment against the general EFQM Model. In principle, due to the openness of the EFQM Model for additional CSR issues a specific Framework for CSR is not really necessary. A stand-alone application of the CSR Framework involves the risk of reducing CSR to a partial concept that is not integrated into the overall management approach and the core business of the company. Besides missing the opportunity of synergies this may also lead to "decoupled" CSR

programs which create an appearance of responsible management but will not affect the core processes and activities.

If applied together with the EFQM Model the CSR Framework supports the integration of social and environmental issues into the general management system and improves implementation of such issues into daily business. Companies already assessing themselves against the criteria of the EFQM Model, but now striving for a stronger orientation towards the vision of sustainable development may use the CSR Framework as a source of guidance points in order to consider all relevant requirements within the Enablers as well as the Results Criteria.

Summary

The EFQM Model for Excellence provides a suitable framework for integrating CSR into a broader approach of organizational excellence. Self-assessments against this model can help to implement and continuously improve a firm's CSR approach if the model criteria are interpreted respectively. For a balanced consideration of the economic, environmental and social performance of a company the weightings of the model criteria can be adjusted. The EFQM Framework for CSR may be used to support the interpretation of the model criteria in terms of CSR and may serve as a source for additional guidance points.

A specific strength of the EFQM Model is its ability to combine the stakeholder approach and the resource-based view. It can be seen as a pragmatic model that integrates two of the most dominant perspectives in the strategic management field. For the implementation and improvement of an instrumental CSR approach this is important because within self-assessments it enables consideration of the benefits of CSR that are based on improved stakeholder relations as well as benefits that are based on a better utilization of internal resources.

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CHAPTER SEVEN

Organizational excellence, knowledge and the theory of the firm: To what extent can we build on the Knowledge-Based View of the firm?

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Introduction

There is a broad consensus in the academic and business communities that organizational knowledge is one of the main contributors to competitive advantage and “organizational excellence”. But if knowledge is a core element of the firm performance, can it be considered as one of the main factors explaining the existence of the firm itself?

According to Conner and Prahalad (1996), these two questions are closely tied together. As a result a growing number of scholars consider knowledge as a core element not only of competitive advantage, but also of the essence of the firm: “*The essence of the firm is its ability to create, transfer, assemble, integrate and exploit knowledge assets*” (Teece, 1998: 75). This is especially the case of researchers who use the Knowledge-Based View (KBV) of the Firm. But, although the Resource-Based view (RBV) of the Firm is now widely used to conduct research on competitive advantage, the sub-branch called the KBV of the Firm has not emerged as a real alternative to transaction-costs economics.

The aim of this paper is to address the two questions: *What are the common principles on which the KBV is built? What are the impediments of the KBV that stop it from becoming*

a theory which is useful for researchers and practitioners? As the goal of a theoretical contribution is not only to criticize the current state-of-the art but also to “*propose remedies or alternatives*” (Whetten, 1989: 494), we also develop an integrative model aimed at increasing the internal coherence of the KBV framework.

With respect to the knowledge-based view of the firm, we show that the reasons why knowledge should be considered as the basis on which firms are built differ significantly from one author to another. Some insist on the advantages of the firm in producing knowledge, others in exploiting it, and still others in protecting it. And among those who insist on producing knowledge for example, the explanations are still very different from one author to another.

This lack of internal coherence is probably one of the main reasons why the KBV is rarely considered as a credible alternative theory of the firm to transaction-costs economics. We confront the potential contributions to the KBV to the recognized weaknesses of transaction-costs economics to show that it had (and still has) the potential to become a complementary explanation to the existence of hierarchical and quasi-hierarchical organizations. Following this, we go on to explain the differences between the potential and the current research on organizations.

Finally, we show that the various approaches related to the KBV can be considered as more complementary than competing. Nevertheless, this creates some tensions in the management of knowledge. Protecting knowledge can be counter-productive during the creation or in the exploitation stages. For example, dividing knowledge in small parts to prevent leaks can slow down the pace of a research project or the development of a new product.

Consequent to the above, we develop an integrative model that allows us to augment the internal coherence of the different approaches developed inside the KBV of the firm. This model is based on the creative tensions that exist between production, protection and exploitation of knowledge. The paper concludes that the tensions can be managed if an

integrative approach is taken where the objective is to gain synergy from the whole rather than exploit the individual elements that make up the whole. The paper also articulates several practical implications for managers.

Interestingly, although not formalized in the same way, many of those integrative principles were already included in total quality models. This is why we argue that there is a bridge to build between a theory of the firm based on the knowledge-based view of the firm and the total quality approaches to organizational excellence.

The Knowledge-Based View of the Firm: Theory of the Firm or Collection of Different Approaches?

A consensus exists on the importance of knowledge in present economies. At the same time, the existence of firms and the definition of their frontiers are still mainly explained in terms of transaction costs. One of the alternative explanations offered by researchers is based on knowledge. Many articles using such a knowledge-based view of the firm have been published. However, it does not seem that these articles have succeeded to become a real alternative to transaction-costs economics as a theory of the firm. This first section of this paper is aimed at explaining such an apparent paradox.

A potential complement to transaction-costs economics

Transaction-costs economics (TCE) has been developed by O. Williamson on the basis of a seminal paper from R.H. Coase. The basic idea is that firms exist because markets are not perfectly efficient. Because of the combination of bounded rationality and moral hazard, each market transaction generates costs especially when there is a high level of uncertainty and when they imply specific assets. As far as the question of the existence of the firm is concerned, this theory seems inescapable. Indeed, it gives a coherent and powerful explanation to the existence of firms and is confirmed by many empirical studies (for a synthesis, see Coeurderoy and Quélin, 1998). Does it mean that avoiding transaction costs is the only essence of the firm?

The search for alternative explanations, as the KBV of the firm does, is valuable only if TCE fails to address the whole issue. The main goal of this section is to propose a quick panorama of the limits of this theory as articulated by leading researchers. Those critics show that there is a place for alternative or complementary theories of the firm.

Some scholars (e.g., Coriat and Weinstein, 1995) underline the paradox existing in using Simon's concept of bounded rationality while building the theory on the basis of an optimizing system closer to the substantive rationality criticized by Simon. According to Williamson (1998:36): "*The economizing to which I refer operates through weak-form selection – according to which the fitter, but not necessarily the fittest, in some absolute sense, are selected [...]*"

Other critics are concerned with the fact that this theory is static in nature. Although it provides explanation for a firm's boundaries in a certain context and at one point of time, and can also explain the changes between two points of time, it does not explain the dynamic of technological and institutional change (Coriat and Weinstein, 1995:75).

The third type of critic argues that TCE is based only on the search of cost efficiency. Therefore, it tends to reduce strategy to the search for efficiency, minimizing the role of value creation (Joffre and de Montmorillon, 2001). As a synthesis, Goshal and Moran (1996) criticize TCE as being too much focused on static, short-term efficiency to the detriment of dynamic, long-term efficiency and especially innovative activities.

As short-term efficiency is necessary to obtain the necessary resources for innovative activities, theories directed toward this aim are necessary. But they have to be complemented by theories more focused on long term evolution and more dynamic in nature. A knowledge-based view of the firm seems to adhere to those conditions. At least if it can be considered as a coherent theory.

Is the Knowledge-Based View of the Firm a coherent theory?

About twelve years ago¹, a series of papers published in refereed academic journals used knowledge as the main explanation of the existence of firms. These contributions are generally referred to as “the Knowledge-Based View of the Firm” (KBV). Nevertheless, while TCE is a strongly coherent theory, the KBV is a research stream made of significantly different approaches. Although their common point is to consider knowledge as the focus of a new theory of the firm, the ways they explain why hierarchies may be more efficient in the management of knowledge rather than markets are different.

A review of the founding articles of the KBV reveals how different the explanations proposed by the various authors are. Table 1 summarizes the results of this review of the first articles explicitly aimed at proposing a knowledge-based theory of the firm. We can see from Table 1 that the focus can be on knowledge production, protection or exploitation, and that for one specific focus the explanations are different again.

TABLE 1

The different focuses of the fundamental KBV approaches

<i>Author</i>	<i>Focus on</i>	<i>Explanation</i>
Conner, Prahalad (1996)	Exploitation	<ul style="list-style-type: none">▪ Knowledge-substitution Effect (an employee can use the knowledge of its manager through directions and suggestions)▪ The Flexibility Effect (duties and responsibilities can be changed more easily than through market transactions)
Grant (1996)	Exploitation	Knowledge integration through rules and directives, and common knowledge.
Liebeskind (1996)	Protection	<ul style="list-style-type: none">▪ Scope of control over transactions and individuals actions▪ System of incentives (reducing mobility)▪ Information disaggregation

¹ Although the roots of this approach are much older, 1996 can be considered as a turnaround in the development of a Knowledge-Based View of the Firm (KBV). The Winter Special Issue of the *Strategic Management Journal* played an important role in the structuring of such an approach. But other journals such as *Organization Science* also published some important articles in the field, such as Conner and Prahalad’s “A Resource-based Theory of the Firm: Knowledge versus Opportunism”, also in 1996.

Spender (1996)	Production and exploitation	Depending on the kind of knowledge: <ul style="list-style-type: none"> ▪ Conscious (individual/explicit): agency problems ▪ Automatic (individual/implicit): agency and HRM problems ▪ Objectified (social/explicit): effective use of institutional mechanisms such as Intellectual Property Rights ▪ Implicit (social/implicit): collective learning
Tsoukas (1996)	Production	Firm as a distributed knowledge system. Integration through socialization practices (but no control on the interaction between role-related social expectations, individual dispositions and interactive situations). Need for discursive practices.

We can see that these articles reflect more knowledge-based views of the firm than is usually associated with KBV and, moreover, some of these aspects even appear in strong opposition:

... the two fundamental arguments within the literature that support the efficiency of firms in knowledge exchange relative to markets are fully contradictory. One claims that hierarchies exist to essentially avoid knowledge transfer [...], emphasizing the firm's capacity to exercise authority in directing others' actions; the other view claims that hierarchies exist instead to facilitate knowledge transfer [...], emphasizing the firm's capacity to support the formation of shared language and identity" (Nickerson and Zenger, 2004: 617-618).

This is to be contrasted with the strong coherence of transaction-costs economics. TCE is basically founded on the work of Williamson, building on Coase's ideas. Most of the research based on this approach is empirical in nature and seeks to test Williamson's hypotheses in various situations. By contrast, KBV is founded on basically different approaches, even from an epistemological point of view.

Although written at the same period on the same subject, an analysis of the citations in the five articles above shows important differences. Table 2 summarizes those differences.

TABLE 2**Number of citations of an author in the main KBV founding articles**

Conner and Prahalad	Grant	Liebeskind	Spender	Tsoukas
1. Williamson (22)	1. March (6)	1. Rumelt (12)	1. Spender (18)	1. Spender (15)
2. Simon (11)	Nonaka (6)	2. Teece (7)	2. Nonaka (10)	Tsoukas (15)
3. Coase (9)	3. Simon (5)	3. Liebeskind (5)	Penrose (10)	3. Hayek (12)
4. Demsetz (7)	4. Delbecq (4)	4. Barney (4)	4. Takeuchi (9)	Taylor (12)
5. Milgrom (5)	Jensen (4)	Brewer (4)	5. Latour (7)	5. Boden (9)
Roberts (5)	Koenig (4)	Grant (4)	Nelson (7)	6. Polanyi (8)
7. Barney (4)	Spender (4)	Zucker (4)	7. Winter (6)	7. Weick (7)
Hamel (4)	Van de Ven (4)	8. Hart, Oliver,	8. Arrow, Barnard,	8. Bourdieu, Harre,
Prahalad (4)	Winter (4)	Penrose, Spender,	Bijker, Callon,	Gillett, Mintzberg,
Masten (4)	10. Clark,	Werth (3)	Grant, Montuori,	Roberts (5)
	Galbraith, Levitt,		Pinch, Plotkin,	
	Meckling, Nelson		Porter, Simon (3)	
	(3)			

Table 2 shows that KBV is built on various influences. Conner and Prahalad's framework is mainly economic and positions itself as a complement to transaction-cost economics (as shown by the number of citations of Coase and Williamson).

Grant builds mainly on theories on the learning organization (Nonaka, March, Van de Ven, Nelson and Winter) which is also the case of Spender who includes alternative approaches to the process of innovation (Latour, Callon). Liebeskind combines mainly strategic management literature (Barney) with a strong economic background (Rumelt) especially evolutionist (Teece, Penrose...). Finally, Tsoukas relies on seminal texts and well-recognized authors of various fields (Hayek, Polanyi) mainly embedded in a sociological tradition (Bourdieu, Weick...).

Further developments of KBV generally emphasize still new features of knowledge in firms, thus stressing even more variety at the detriment of coherence. Kogut and Zander

(1996), although they do not refer explicitly to a knowledge-based view of the Firm, try to propose an alternative to TCE as a theory of the firm where knowledge plays a central role. They insist on the way firms' identity facilitates learning and consequently coordination and communication although it also creates rigidities in its behavior.

Galunic and Rodan (1998) insist on innovation based on recombinations of existing knowledge (and therefore more on exploitation than production of knowledge although the result of a new combination can be considered as a new piece of knowledge). They show (theoretically) that some basic knowledge characteristics such as tacitness, context specificity and dispersion, and some social characteristics of knowledge such as delineation (through the emergence of shared mental models and language) and identification can impede knowledge recombination within firms.

Brown and Duguid (2001) put the emphasis on differences in the knowledge itself, sometimes considered as "sticky" because of its tacit dimension and sometimes as "leaky" because of its explicit dimension. They insist on the fact that these are two dimensions of the same knowledge so that explicit knowledge can be used only by individuals who share common tacit knowledge with those from whom the leak comes. As a result knowledge flows easily inside "communities of practice" and also through "networks of practice", broader and looser than the previous ones, but sharing some epistemological similarities. As these networks do not stop at the boundaries of firms, this explains "leakages", and as there are different communities inside organizations, this can explain the difficulties to transfer knowledge and practices inside organizations. As a result, the main challenge for firms is to overcome these epistemic differences through coordination.

Nickerson and Zenger (2004) propose to use problem-solving as the unit of analysis. They assume that the role of a manager is to select a potentially valuable problem and organize the search for a solution. They therefore put an emphasis on knowledge production rather than exploitation or protection: "*We begin with the assumption that the*

manager's knowledge-based objective is to create valuable new knowledge" (Nickerson and Zenger, 2004: 618).

Nickerson and Zenger (2004) associate a type of problem (decomposable, nearly decomposable, non-decomposable depending of the effect of the interactions between the different parts), a way of searching a solution efficiently (directional or local search, heuristic or cognitive search), and a way of organizing this search (markets for decomposable problems, authority-based hierarchies for nearly decomposable problems and consensus-based hierarchies for high-interaction problems).

Still more fundamentally, Felin and Hesterly (2007) question the basic assumptions of most KBV studies. According to them, most scholars in the field consider the critical level of analysis to be the firm without controlling for the impact of individuals. They call for a more individual-oriented research in the field; although they quote some studies underlying these effects (especially the work of Zucker and Darby on biopharmaceutical industry) and consider Grant as an exception among the main authors in the KBV of the firm, quoting his 1996 paper: *"the emphasis upon the role of the individual as the primary actor in knowledge creation and the principle repository of knowledge, I believe, is essential to piercing the veil of organizational knowledge and clarifying the role of organizations in the creation and application of knowledge"* (Grant, 1996: 121).

Turvani (2001) links the individual to the organizational level. She states that individuals learn through their interactions within the organization, and more specifically through the evolving collective mental models shaped by the "directives" of the management. On the other hand, the process of acquiring new skills to face this evolving strategy can be supported by recruitment; in other words by labor turnover.

In contrast to TCE, we have demonstrated that the KBV approach lacks coherence. Different authors focus on different sources of value creation through knowledge (production, exploitation, protection), different features of knowledge (tacit versus explicit, "stick" versus "leaky", etc), and different levels of analysis. This diversity has

advantages: each explanation is probably complementary to the others and the various studies in the field give a rich picture of the management of knowledge in organizations. Nevertheless, it is difficult to consider the KBV as a real alternative to TCE due to its lack of coherence. We therefore propose a frame aimed at reconciling these various points of view without abandoning their richness.

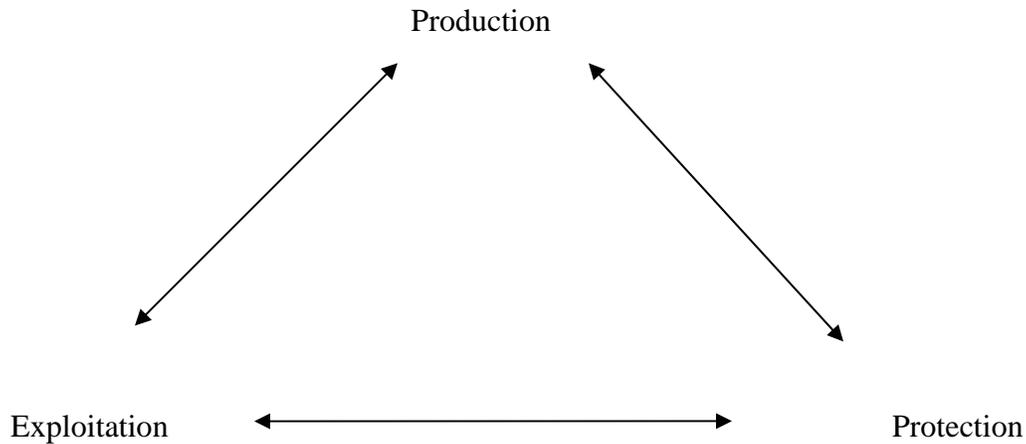
Toward an Integrative and Management-oriented Approach

The starting point of our analysis is the focus on production, exploitation or protection of knowledge of the most quoted articles of the KBV. The approach proposed here is simple in essence. It consists in analyzing the interactions between these different explanations of competitive advantage. We then enrich this analysis by integrating the principles of ago-antagonist systemic in our model.

The “interaction triangle”

Although most KBV studies focus on only production, exploitation or protection of knowledge (or at best two of them), we consider them as being three faces of the same problem. Production of new knowledge, exploitation or protection can all be sources of competitive advantage. Nevertheless, they are not independent of each other. It is therefore important to study how they interact with each other (figure 1).

FIGURE 1
The interaction triangle



The interactions between *production* and *protection*

There are some antagonist relations between production of new knowledge and its protection. For example, Liebeskind (1996) insists on the ability of the firm to disaggregate information, so that it is much more difficult to capture from the outside. But new knowledge is often the result of recombination of existing information and knowledge – explicit and tacit - (Kogut and Zander, 1992; Nonaka and Takeuchi, 1995). As a result, disaggregating information too much (which also means specialising individuals in narrow-scope tasks) may also impede innovative new combinations of knowledge.

Galunic and Rodan (1998), show that dispersion of knowledge is a handicap for knowledge recombinations identification and implementation. Another antagonist effect is that trying to stop knowledge at the firm’s boundaries may also reinforce network identification to professional networks at the expense of loyalty to the firm, and would probably also stop the flow from outside to inside the organization (Brown and Duguid, 2001: 207). It seems therefore that an organization has to implement different managerial structures to produce knowledge and to protect it. But there are also some positive interactions between the two.

According to Wilcox King and Zeithaml (2001), the belief that their firm's competences have a high level of causal ambiguity (especially when they use tacit knowledge) may provide middle managers with psychological protection which may allow them to take more risks. It may compensate partially to the difficulty of recombining existing pieces of knowledge. Moreover, whereas Galunic and Rodan (1998) suggest that knowledge tacitness – which is a barrier to imitation - may impede innovation, some other scholars (e.g., Hedlund, quoted by McEvily and Chakravarthy, 2002: 302) argue that it can foster creativity.

There is also a more direct complementary effect between protection and production of new knowledge. Intellectual property rights are mainly aimed at protecting concrete forms of new knowledge (inventions, forms, software code, etc). However, implementing an “IP culture” is also a way of generating new knowledge. The skills developed to write patents are close to those that are necessary to analyze existing patents. Some Japanese firms, which are among those that file most patents, also actively use their competitors' patents to innovate (Grandstrand, 1999; Pitkethly, 2001). As a result, managerial decisions aimed at protecting knowledge may also have complementary effects with those aimed at producing new knowledge.

The interactions between *production* and *exploitation*

Production of new knowledge implies exploration activities. March (1991) shows that these activities compete for scarce resources with exploitation of existing knowledge. In other words, there will be a dilemma between allocating more resources to one or the other. As a result, firms can be more or less focused on production or exploitation of knowledge. For example, in the pharmaceutical industry, Lim (2004) shows through an analysis of the publications of their scientists that Merck or Du Pont Pharma are more oriented toward basic sciences than Elan or Fujisawa.

But there are also some complementarities between production and exploitation of knowledge. As stated by Starbuck (1992:722): “*The distinction between creating knowledge and applying it is often hard to make*”. New knowledge often comes from the

application of old knowledge to new situations. The concept of “learning-by-doing” (Arrow, quoted by Rosenberg, 1982) makes explicit the complementarities between exploitation of existing knowledge and production of new knowledge.

The interactions between *exploitation* and *protection*

The first contradiction between exploitation and protection is close to the first antagonist interaction we mentioned between production and protection. Indeed, exploiting existing knowledge implies to incorporate it in new products or services. Whereas labor and knowledge division improve protection against imitation, quick product development generally implies concurrent development in cross-functional teams and therefore information sharing.

More specific is the dilemma between protection and diffusion of new technologies. Sometimes, the diffusion of a new technology can be facilitated when complementors (Nalebuff and Brandenburger, 1995) or even competitors can use it (Boisot and Mack, 1995). This is especially the case when technological standards are at stake (Hill, 1997; Shapiro and Varian, 1998). Moreover patents can be used to get access to competitors’ technologies thanks to cross-licensing agreements (Grindley and Teece, 1997; Hall and Ham Ziedonis, 2001).

But the interactions between the two are also more complex. Mc Evily and Chakravarthy (2001) show that complexity, tacitness and specificity of the technological knowledge used to improve significantly products in the adhesive sector are associated with longer delays for imitation. They therefore allow for better protection. There is therefore no one-way simple relation between exploitation and protection.

Toward an ago-antagonist analysis

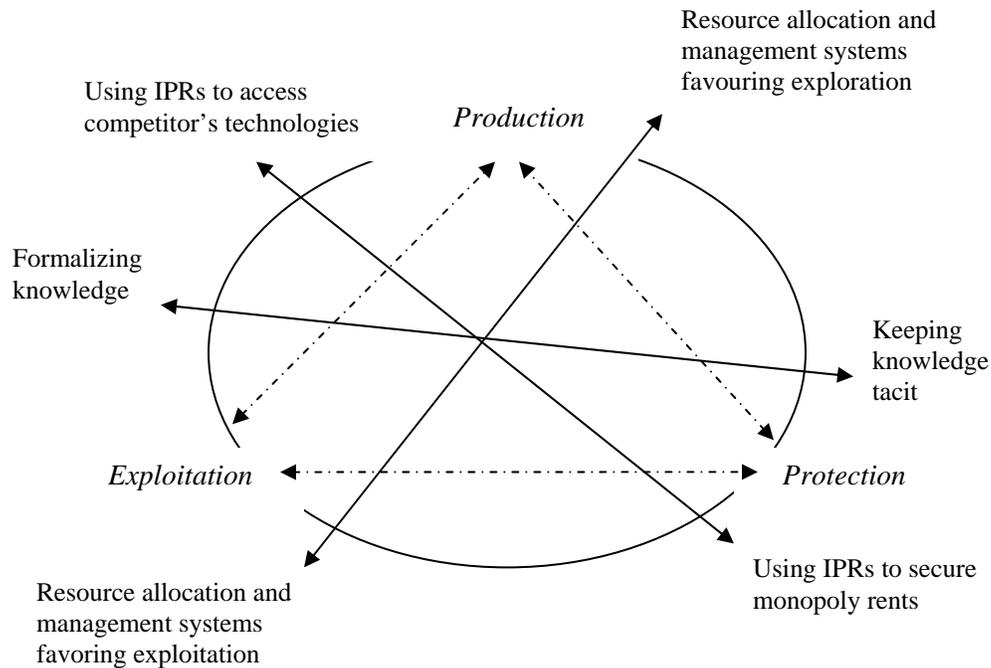
Ago-antagonist systemic has been formalized by the French endocrinologist E. Bernard-Weil. The idea to apply it to strategic management dates back to Martinet (1990) although most of its applications are more recent than that (e.g., Martinet, 2001; Bernard-Weil, 2003; Denis, 2003; Corbel, 2005a). According to Bernard Weil (2003: 28), the ago-

Weil, 2003; Denis, 2003; Corbel, 2005a). According to Bernard Weil (2003: 28), the ago-antagonist approach consists of analyzing couples that have opposite effects on some receptors of those actions (i.e., antagonist effects) and simultaneously parallel effects on other receptors or other parts of the same receptors (i.e., agonist effects). An ago-antagonist system is made of at least two ago-antagonist couples. Two of these couples can form an ago-antagonist couple of superior level, constituting an ago-antagonist network.

One of the most important properties of ago-antagonist systems when applied to managerial considerations are that no pole can be eliminated by the other, so that the system is in a constant process of “equilibration” (no stable equilibrium is achieved). Another interesting property is that in the case of pathological disequilibrium, the system tends to resist strategies based only on the antagonist character of poles (in an A-B couple, if A is in excess, introducing more B). “Bipolar strategies” consisting of introducing both A and B or “unipolar paradoxical strategies” (consisting in introducing still more A) can be more successful.

Such an approach can help us to analyze a system such as the management of knowledge in the firm as we have shown that it implies both agonist and antagonist relations. The problem is that we do not have couples but a triangle. The poles of the triangle therefore need to be translated in lower levels couples (Figure 2).

FIGURE 2
An ago-antagonist system



We can identify at least three ago-antagonist couples concerning the strategic management of knowledge. The first one is very similar to two of the three poles of our triangle: resource allocation and management systems (incentives to take initiatives or to conform to norms, profile of recruited employees, etc) can favor whether exploitation or exploration (and therefore production of new knowledge). The two others are more specific.

The main roles given to Intellectual Property Rights (IPRs) and especially patents are multiple (Corbel and Fernandez, 2006) and can differ a lot from a firm to another. If patents are used mainly to secure monopoly positions, they favor protection. If they are used mainly to get access to competitors' technology, the protection effect will be partially lost, but they will benefit in terms of knowledge creation by allowing new combinations and exploitation by facilitating the development of new products or processes. Its effects on exploitation are both positive (incorporation of the competitors' technologies in the firm's products) and negative (competitors will also use the firm's technologies).

Finally, the third couple concerns the dilemma between formalizing knowledge or keeping it tacit. Keeping knowledge tacit will favor protection whereas formalizing knowledge will favor both production and exploitation.

Although these couples seem to be mainly antagonist, they can also have agonist effects. We have already tackled the complementarities between exploration and exploitation (learning by doing). But explicit and tacit knowledge can also be considered as complements as soon as they can be combined and translated from one form to another (Nonaka and Takeuchi, 1995). Similarly, when used as a tool for cooperation, patents still have some positive effects on protection as large patent portfolios that are used as bargaining assets in cross-licensing agreements create huge barriers to entry to firms that would not have something to propose in exchange for access to the protected technologies (Corbel, 2005b).

Managerial implications

The implementation of such an integrative and “ago-antagonist” approach has also practical implications. We first develop these implications in terms of IPR management, and tacit/explicit dilemma, and then relate the exploration/exploitation dilemma to new approaches to quality.

Dealing with complexity thanks to dialectical thinking

Mc Evily and Chakravarthy (2002: 301) show that complexity, tacitness and specificity of knowledge used to design products slow the pace of imitation from competitors (as far as major product changes are concerned). However, this does not mean that managers should seek to increase those characteristics in the knowledge of the firm. The same characteristics can make more difficult the knowledge transfers between different units of the firm (imitability/repicability dilemma, Kogut and Zander, 1992), or may alter the capacity of the firm to adapt its knowledge to changes in the environment. This is congruent with our model, which shows that knowledge management can be better viewed as a continuous process of “equilibration” than as a collection of simple receipts.

As stated by Brown and Duguid (1998: 108): “*sometimes it is useful to think in terms of ‘both/and’ rather than simply ‘either/or’*”. This seems to us especially true in the field of knowledge management where, as we showed above, managers have to face several apparent dilemmas. An approach such as that we propose may help to prevent thinking in too simple terms as those were Manichean choices. Although they are antagonist in some respects, goals such as production of new knowledge, exploitation and protection of existing knowledge can be pursued simultaneously.

Corbel (2005a) argues on the main implications of an ago-antagonist approach in the field of IPR management, and, more specifically, patent management. He shows that although patents can be used to support four generic strategies (secure technological monopolies, maximize monopoly rents through royalties, exchange technologies, and run a speed race), it can be very useful to analyze the technological strategy of the firm as an evolving combination of the four.

Corbel illustrates this point by analyzing Intel’s strategy over a long period (Corbel, 2002, 2003). Very open until the mid-1980s, Intel’s strategy then switched to a very protective strategy aimed at securing technological monopolies to make it more and more difficult to clone its microprocessors. But since the mid-1990s, Intel’s IPR strategy has become a subtle combination of the different generic strategies: protection of some distinctive technologies during various periods of time, free licensing of other technologies to facilitate their establishment as industry standards, cross-licensing agreements or more classical licensing (in exchange of royalties) for still others.

The same type of approach could be used to manage the tacit/explicit knowledge dilemma. Some firms rely more on tacit knowledge (Baumard, 1996) and others on explicit knowledge (Nonaka and Takeuchi, 1995 state that it is more the case of American firms in general, as compared to their Japanese counterparts). However, firms can oscillate between the two extremes which mean, for example, to accept that part of tacit knowledge remains tacit although it may be more comfortable for executives to feel the knowledge of the firm is stocked in computerized data bases. The permanent cycle (or

“spiral”) of socialization, externalization, internalization and combination proposed by Nonaka and Takeuchi (1995) can help to exploit the agonist effects of those two types of knowledge² and illustrates what a “both/and” logic would be in that field.

Finally, the way to manage the exploration/exploitation dilemma by combining the two poles can be well illustrated by the way new approaches of quality integrate both the need for standardization and conformity to permanent norms *and* the need to innovate.

New approaches to quality and the innovation/standardization dilemma

International competition, shorter product life cycles and increasingly demanding customers are increasing pressure on organizations to integrate both the need for standardization and conformity to permanent norms *and* the need to innovate. Therefore, knowledge, innovation and quality have emerged as key assets and a source of competitive advantage. However, there are confusing messages from the literature, particularly in relation to the exploration/exploitation dilemma. We address the dilemma by firstly contrasting exploitation and exploration. (Terziovski, 2007).

Exploitation is discussed by March (1991). March stated that: *“Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution,...in contrast exploration may be seen as the organizational counterpart of learning-that is, acquiring or creating new knowledge.”*

The first paradox involves the quality-innovation culture paradox. For example, a culture-based on quality does not tolerate errors. Knowledge measurement is widely used to measure the organization’s stock of knowledge (intellectual capital) and seeking to transform intangible knowledge into a tangible tradable commodity. On the other hand an innovation culture is based on learning from failures and tolerance of ambiguity. Activities include the acquisition or generation of knowledge that is new to the organization, for example new product development (NPD).

² To be more precise, those are two facets of (the same) knowledge (Tsoukas, 1996).

A further paradox exists between the exploitation and exploration elements of quality management. For example, on one hand ISO 9001-2000 promotes documentation and conformance to a standard; on the other hand Total Quality Management (TQM) claims tacit knowledge is the source of competitive advantage (Powell, 1995).

Despite thousands of articles in the business and trade press, TQM remains a hazy, ambiguous concept. Indeed, the meaning of the term quality itself is still being debated. Due to this ambiguity, people's reactions to TQM vary as a function of their own beliefs and experiences. TQM is seen by some as an extension of scientific management, by others in terms of systems theory, and by still others as an altogether new paradigm for management (Spencer, 1994).

Much of the debate about TQM has focused on its 'success rate' which many would suggest is mixed. Therefore, a vital question to address is: *why and how do such improvement initiatives sometimes seem to work in terms of producing sustainable lifts in company performance, and sometimes fail completely?* According to Garvin (1998: 49), *"In the absence of learning, companies-and individuals simply repeat old practices. Change remains cosmetic, and improvements are either fortuitous or short-lived."*

Quality Standards

There is growing support from the literature that the international standard ISO 9001-2000 is becoming a necessary step in implementing a quality-based strategy. However, it appears that some managers have misunderstood the role of ISO 9001 certification. One possible explanation for this misunderstanding is that managers fail to distinguish between conformance and performance specification.

ISO 9001 certification focuses on conformance specification. Certified companies demonstrate that the organizations' systems are potentially capable of producing quality products and services. This capability is also dependent on the willingness of

management and the employees to accept and use the standard operating procedures in their day-to-day activities.

On the other hand, performance specification requires realistic targets to be set and pursued by employees who may be capable and willing to use the certification process as part of a broader improvement initiative. For example, Powell (1995) concluded that the key to TQM performance does not lie in the tools and techniques such as ISO 9001 certification and benchmarking. Powell found that the intangible factors such as employee empowerment and senior management commitment had a greater influence on TQM performance (Samson and Terziovski, 1999).

Powell (1995) draws on the resource view of the firm (Barney, 1991; Schmidt and Finnigan, 1992) to examine TQM as a potential source of sustainable competitive advantage. Under the resource view, success derives from economically valuable resources that other firms cannot imitate, and for which no equivalent substitute exists. Powell concluded that these tacit resources, and not TQM tools and techniques, drive TQM success, and organizations that acquire them can outperform competitors with or without the accompanying TQM ideology.

Based on the above, it is reasonable to conclude that exploitation and exploration are two forces which can be seen as contradicting each other. However, Grant (1996) argues that both exploration and exploitation are integral to the knowledge work activity of any organization. In the following section we combine the two poles by illustrating how approaches of quality integrate both the need for standardization and conformity to permanent norms *and* the need to innovate.

In an in depth analysis regarding innovation and quality management strategies, Nowak (1997) emphasized the importance of both processes and their impact on competitive advantage. He states: “*Quality and innovation processes are interlinked and should not*

be treated separately.” Defilippi et al., (2006: 91) further reinforce the need for explicit and tacit knowledge. He stated that *“In practice, organizations need both explicit and tacit knowledge and they need to invest in both knowledge exploitation and exploration.”* Developing innovative capability requires embracing change. It requires measuring the level of innovative capability currently residing within the organization via an innovation audit.

However, even though knowledge has emerged as an important concept in the management literature in the past decade as explained earlier in Tables 1 and 2, knowledge is suffering from an identity crisis. During the 1990s the concept was often used to describe computer applications for information storage and retrieval. The information-perspective of knowledge management has been heavily criticized by authors who claim that knowledge management must be seen as a perspective of strategy, management and innovation (Nonaka and Takeuchi, 1995).

The focus of current strategic thinking considers the unique knowledge embedded in the firm as the key to outpacing rivals (Kim and Mauborgne, 1999). Strategy combines with innovation to provide growth opportunities by improving current processes or developing new products (Afuah, 1998). There are numerous works on the importance of being open to risk and a willing to attempt new things (Rothwell, 1994; Utterback, 1994; Ahmed, 1998). However, there is still much we do not know about how firms can innovate faster and better and what role should knowledge and quality management play in the quest for continuous change.

Garvin (1993), attempted to conceptualize exploitation and exploration by defining a learning organization as: *“an organization skilled at creating, acquiring and transferring knowledge, and modifying its behavior to reflect new knowledge and insight.”* The learning organization concept has been further portrayed by Nonaka (1991) as *“Knowledge-creating companies”* ... *“consistently create new knowledge, disseminate [the knowledge] widely throughout the organization, and quickly embody it in new technologies and products.”*

Terziovski et al. (2000) developed a theoretical framework based on Senge's (1990) learning organization and the Malcolm Baldrige National Quality Award (MBNQA) criteria. Qualitative data was gathered from five Australian companies that had established practices in the TQM field. Multiple cross-case content analysis was undertaken to evaluate the proposition that: "*TQM and the learning organization are mutually dependent*"

The multiple cross-case analysis revealed that systematic problem solving; experimentation with new approaches; learning from the experiences and best practices of others and from their own experiences and history; transferring knowledge quickly and efficiently throughout the organization, were the key management imperatives. Based on the qualitative analysis, Terziovski et al., (2000) concluded that the five companies analyzed are underpinned by a single principle: *the sustained commitment to "learning"*. Therefore, the proposition that: "*TQM and the learning organization are mutually dependent*" is supported and is consistent with Defilippi et al., (2006) that organizations need to invest in both knowledge exploitation and exploration.

Based on the latest book on Building Innovation Capability in Organizations (Terziovski, 2007), knowledge and learning were found to be the main ingredients for a quality management focus (main stream) and an innovation management focus (new stream). The study found significant and positive relationships between knowledge and innovation and knowledge and quality. However, the knowledge paradox needs further clarification by addressing the research question: "*...does tacitness, complexity, and specificity slow down learning and hinder knowledge transfer*"? Longitudinal research would be useful to solve this kind of question.

Despite the paradoxes that exist between knowledge, innovation and quality, these concepts can be logically and empirically integrated to produce high performance organizations in a constantly changing business environment.

Summary and conclusion

The point of departure of this paper was the development and analysis of a paradox. Most now agree that knowledge is the core element of the 21st century economic environment. But at the same time, as soon as the reason why firms exist and the limits of their growth is discussed, TCE seems to be the only widely used theory. Although that approach has many qualities, it also has some drawbacks. One drawback is that it focuses management on cost reduction rather than value creation.

We therefore have argued that there is a need for a complementary theory based on knowledge. This does not mean that TCE is not useful, but rather that it accounts for only part of the problem: firms create value not only by reducing costs but also through giving more value to consumers, thus justifying higher prices. The following statement by Teece (1998: 75) reinforces our conclusion: *“In high-technology industries, firms are not so much organizations designed to minimize transactions costs – although this they do – but organizational structures capable of shaping and reshaping clusters of assets in the distinct and unique combinations needed to serve ever-changing customer needs.”*

Total quality approaches have always encompassed both aspects as long as a learning culture is present that encourages both exploitation and exploration activities to flourish for the purpose of adding value to customers, the enterprise and stakeholders generally. The knowledge-based view of the firm seems to be the ideal complement to TCE. It states that knowledge is the core asset of a firm and is more focused on innovation than cost-cutting.

However, as we have shown, there are various approaches to KBV. Depending on the author, competitive advantage is based on production of new knowledge, exploitation of existing knowledge or protection of knowledge. To most authors, it lies at the organizational level although for others it lies more at the individual level. This is why we proposed an integrative approach based on the ago-antagonist properties of these different poles.

The management of knowledge in the firm is then formalized through ago-antagonist couples (resource allocation and management systems favoring exploitation *versus* resource allocation and management systems favoring exploitation, formalizing knowledge *versus* keeping it tacit, using IPRs to secure monopoly rents *versus* to access competitors' technologies). The main benefit of such an approach is that it helps us to think in terms of "both/and" rather than in terms of "either/or". This is important both for scholars and practitioners.

From an academic point of view it can help to reduce the distance between the different conceptions of KBV authors. The different elements authors focus on are simultaneously present in our model. From a practical point of view, the model can help managers to see the different dilemmas linked to the strategic management of knowledge from a different angle. The main point is that they have to manage an "equilibration" process where no pole of a couple can be deleted. There is therefore no stable equilibrium but rather a constant oscillation between the two extremes, depending on the position one holds along the innovation cycle.

This paper is a first step in taking an integrated approach to knowledge management. A lot remains to be done especially in terms of empirical studies aimed at refining the ago-antagonist couples presented here. With respect to our research question, we have shed some new light on the common principles on which the KBV is built. We have also identified impediments of the KBV that stops it from becoming a theory which is useful for researchers and practitioners. We conclude that managers can address the exploration/exploitation dilemma by combining the two poles by integrating the need for conformity *and* the need to innovate based on learning as a "continuous human process" which is coherent with total quality approaches.

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CHAPTER EIGHT

Process-Management and System-Thinking for Sustainable Development

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Introduction

Earth's resources are limited and the results of human activity could lead to dramatic change even in the short term. Development toward a sustainable earth needs to become more effective and efficient.

In this paper we argue that a more extensive and effective application of the principles, methodologies and tools of quality management can make a significant contribution to global sustainability. Classic quality management focuses on how to create sustainable customer satisfaction. However, we argue that this will not be good enough. A broader stakeholder perspective is necessary. "Society" as a whole should be seen as a crucial stakeholder. By adopting a broader, process-based description of quality management to measure and improve performance on a cross-functional, cross-organizational and cross-national basis this paper argues that quality management has a central role to play also regarding global sustainable development.

Although it is difficult, if not impossible, to get universal agreement on a definition of sustainable development, an application of the Pareto principle to identify what Joseph Juran referred to as “the vital few” issues leads to widespread agreement on the importance of global warming and carbon-emissions. Furthermore, although it would also be difficult to reach an agreement on how to share the burden of reducing CO₂ emissions, it appears relatively straightforward (as we will try to demonstrate) to assess what needs to be done based on the requirements at the global level. It may be argued that even in the absence of any binding agreement just knowing what is required can act as a driver for change. In spite of all the technical challenges we are facing, the challenge of *making change happen* appears the most demanding. As the *Stern Review* asserts: “*Policy to reduce emissions should be based on three essential elements: carbon pricing, technology policy, and removal of barriers to behavioral change.*”

Technically, carbon pricing is not very complicated. Many low carbon orientated technologies exist today. The real challenge seems to be how to create the sense of urgency needed and to get society to act.

The starting point for showing how quality management can contribute to global sustainability is an examination of their relationship in regard to the following six issues:

- *Defining sustainability and sustainable development* – In spite of difficulties in agreeing on what sustainable development really is, we create a working definition which enables us to focus on practical sustainability improvement.
- *Process-based system models*. Process models that are normally used at an organizational level for quality improvement are used to describe and improve performance in terms of sustainability on different levels, including supply chains and performance on the global level.
- *Measuring sustainable development and sustainability* – The concept of cost of poor quality is integrated into the notion of sustainability and proposed as a component of sustainability reporting.
- *Corporate Social Responsibility (CSR) and the supply chain* – CSR, however well intentioned and carried out within an organization, will be sub-optimal if it

does not include the entire supply chain from first suppliers to producer and from producers to last customers.

- *Knowledge management* – Concepts of the Learning Organization and Knowledge Management are reviewed to identify their relevance to sustainable development and CSR.
- *Change Management* – How to create the sense of urgency required on a broad level and how to make change happen?

Finally, those issues are re-examined in light of the experience with CO₂ emissions in the cement industry.

A working definition for sustainability and sustainable development

There is little agreement on what sustainable development really means in practical terms. It is not easy to create a strong, generally accepted definition of the concept (Jacobs, 1999). The most generally used, but also vague and often questioned, definition is that supported by the UN, where it is broadly stated that: *sustainable development is development that meets the needs of the present generation without compromising the ability of future generations their own needs* (WCED, 1987).

Sustainable development as an expression indicates a change process that leads towards a state of balance, which we could call sustainability. In a very simplistic way global sustainability might be seen as a state where all interested parties have their fair share. This could for instance mean that earth's resources on a sustainable level are split equally on all parties, including a part of nature that is remaining intact. Agreeing on target levels for sustainability (global system limits) is a monumental challenge. How much water can we use, what level of inequality can be accepted, how much fish can be caught, how should fossil fuels be burnt over generations, and how much of nature must be spared in order to qualify for sustainability? These limits would probably be set differently based on individual values and beliefs. However, not agreeing on detail should not stop us from doing something and there are areas where it should be easier to agree upon the objectives. We start with a definition, which seems good enough.

Newton (2003) labels True Sustainability of organizations as: “*when a social structure can be maintained profitably and indefinitely, without degrading the systems on which it depends*”. In practical terms this state might be derived from assessment of global system limits for critical elements. In most cases the current rate of effect on systems is not sustainable and often there is only limited time for taking action, with the risk of non-action being that systems are irreversibly damaged. The rate of performance that has to be improved to reach a level of True Sustainability could be called “True Sustainable Development”. Since sustainability has many components we still face the problem of adding up different elements of development. To simplify issues we might focus on a few critical elements and see what is required for “True Sustainable Development for element y”. Here we use global warming and CO₂ emissions as y. Estimates on limits of True Sustainability for carbon emission can be found for example in the *Stern Review* and in reports from the IPCC. Based on these we can set a sustainable target level for ppm CO₂ in the atmosphere. We can also calculate the rate of reductions required on a global level based on the time we have to reach a level of True Sustainability for CO₂ emissions. The speed of reduction will be different depending on the starting point. When critical elements of sustainability, such as CO₂ emissions, can be expressed in company or person related units, we might compare targets with the actual level of performance and quantify the improvement needed in terms of target level and time to reach it. The purpose of having targets, even if not 100% correct or fair, is to confront us with the magnitude of change needed. It is quite possible that this will act as a way of creating a sense of urgency that precedes all change (Kotter, 1996).

Process-based system models for Sustainable Development

Process models can be used to describe organizational systems at different levels. In earlier work (Isaksson and Garvare, 2003), we have tried to conceptualize a global process indicating main activities. The process based system model originates from work on an organizational level, see (Isaksson, 2006). The principal outline of the model might be used to describe systems on different levels, going from global to organizational, see Figure 1.

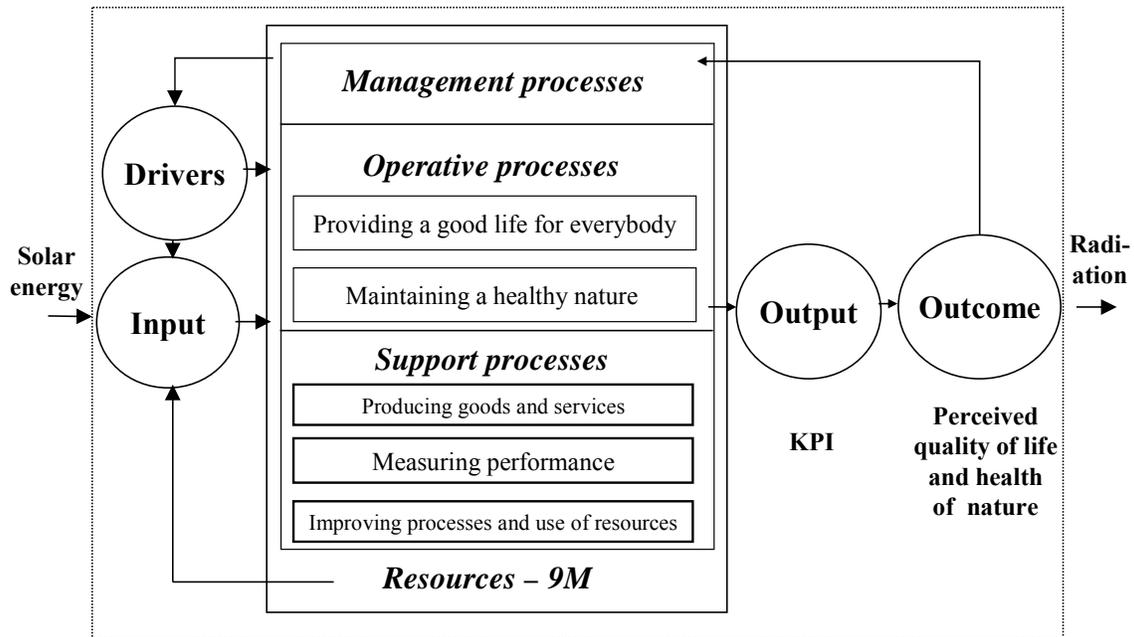


Figure 1. A global process model, based on Isaksson and Garvare (2003) and Isaksson (2006).

Earth might be seen as a closed system, except for the incoming solar energy and outgoing radiation. Practically speaking there are no other external resources. This is not the case when looking upon an organization or a country. In those cases there are external resources which could form parts of the system description. The elements of the model follow a common division of processes into management, operative and support processes. In Figure 1 the process “producing goods and services” is presented as a support process together with the processes of “measuring performance” and “improving processes and resources”. These support processes are intended to cover the five factors described in the report *Limits to Growth* (Meadows et al., 1972). That report examined five basic factors that limit global growth. These were population, agricultural production, natural resources, industrial production and pollution. Producing services and goods covers agriculture and industrial production. Improving processes and use of resources covers human resources (population), natural resources and pollution (resource earth). The output is measured with Key Performance Indicators (KPI) and the outcome as the effect of the output in reports such as “State of the World”. Since measurement is a precondition for improvement, the process of measurement has been included as one of

the three specifically mentioned support processes. “Improving processes and use of resources” should be seen as the generic process for a more sustainable performance. Based on the outcome there is a feedback loop that affects drivers for change which in turn affect inputs required. Inputs are partly drawn from both renewable and non-renewable resources. Here, resources are described with 9Ms. These have been developed from a version of the Fishbone diagram and represent common causes for effects on output (Bergman and Klefsjö, 2003). The approach has been used for describing organizational resources (Garvare et al., 2007). These are further clarified in Table 1.

Table 1 – The 9Ms at the global level. Some proposed examples for a check list.

<i>9M:s</i>	<i>Ms as resources – description in the form of examples</i>
<i>Management</i>	Policies, goals and strategies for improving Triple Bottom Line (TBL) performance on global level (e.g., the Kyoto agreement)
<i>Method</i>	Structure for carrying out strategies and achieving goals (e.g., UN , WTO, G7)
<i>Man</i>	Educational level (e.g., years of school, literacy, state of health)
<i>Measurement</i>	System of follow up (e.g., how TBL performance is measured and results communicated on a global level)
<i>Machine</i>	Natural and man made systems (e.g., weather systems, food production system and global communications)
<i>Material</i>	Natural resources and how these are managed (e.g., global strategy for the best use of oil resources)
<i>Milieu</i>	Natural climate and political climate (democracy, peace) effects on Machine, Man, Method etc. (e.g., food production, human rights, level of poverty)
<i>Market</i>	Demand and wants from different stakeholders (e.g., demand for cars and wants for saving nature)
<i>Means</i>	Funds for improvement (development aid, organizational improvement)

For each organization a similar model can be used and the focus can be on an organizational, or on a sub-organization level. The process template enables studies of how processes are managed at different levels, even if there is no formal ownership and no previously identified process. This idea has, for example, been used when looking at

how Swedish university level quality education is managed, seen from a process perspective (Isaksson et al., 2007).

The process model also serves as a base for measurements, as described in the following section.

Measuring sustainable development and sustainability I

Sustainable development on a corporate level might be equated to Corporate Social Responsibility (CSR). When the company is showing True Sustainable Development, or when the organization has achieved a level of True Sustainability as defined above, it is also socially responsible. CSR-strategies for corporations could be such as joining the Global Compact, respecting the OECD guidelines, creating company internal ethical codes and reporting their sustainability performance using the Triple Bottom Line (TBL). The TBL presents a possible option for measuring Corporate Social Responsibility.

The Global Reporting Initiative (GRI) guidelines are widely used for reporting according to the TBL. However, they have been criticized for missing important areas, such as the process view, customer focus and customer value, as well as issues related to the Cost of Poor Quality (Isaksson and Garvare, 2003; Isaksson, 2005; 2006; 2007). Organizational excellence also requires focus on stakeholders such as, owners, employees and society. The high number of relatively complex indicators carries a risk of making reporting the business of specialists. Current practices make it relatively easy for any company to present a picture of perceivable social responsibility. It would of course be of great value to have a limited number of relevant indicators that could present a simple overview. We believe that relating indicators to different types of measurements in a process model will help in this work.

In order to assess how well a current organizational measurement system is working we need to know which are the “vital few” measurements and how they are being addressed. One way of identifying key performance indicators is to focus on the main interested parties and their needs expressed in what is here called outcome measurements. Based on

a generic process model for organizations the TBL division might be extended to cover measurement types such as drivers, input and resources, see Figure 1. All types of measurements in Figure 1 could be further divided into the dimensions of the TBL, forming a matrix of types and dimensions (Isaksson and Garvare. 2003), see Table 2.

In our view most analysis should start with a focus on outcome and output to find important areas of improvement; if this can be condensed into a few generic indicators relating to the two operative processes in Figure 1. As humanity we are striving for a good life. For this we need value expressed in some suitable unit. Nature requires minimizing of harm. However, the problem is that we have difficulties in comparing value and harm, with an example being the problem of putting a price on natural values. Even if there are boundary limits for harm produced, an interesting thing is how much value for stakeholders can be produced per unit of harm. Concerning economic and ethical indicators we are proposing some principal additions. The reasoning is that since markets are never perfect, costs of poor quality normally drive prices up, meaning that internal inefficiencies are paid by others; often the customer, see (Isaksson, 2005, 2007). This indicates that profit and the distribution of it forms a necessary but not sufficient set of economic indicators for sustainability. We need to add minimizing the cost of poor quality.

Arguably, in a situation of scarcity it should be the obligation of every company to produce as much value for all stakeholders as possible, compared not only to environmental harm done but also compared to the ethical harm. One part of ethical harm could be seen as the price paid for products. Based on these arguments it could be claimed that a company with a significant cost of poor quality that is not being systematically reduced is not taking its ethical responsibility. Summarizing, we could, in a simplistic way, report the TBL output as value produced (economy), value per environmental harm and value per ethical harm (Isaksson, 2007).

Table 2 – A proposed measurement matrix for the global process, adapted from Isaksson and Garvare (2003).

	<i>Drivers</i>	<i>Input</i>	<i>Output</i>	<i>Outcome</i>	<i>Resources</i>
<i>Economy</i>	Human wants	Solar energy Natural resources	Value produced	Level of human happiness	Level of 9Ms
<i>Environment</i>	Global limits	Interpretation of global limits	Harm Value/harm	Level of nature	Milieu
<i>Ethics</i>	Human rights	View of human rights	Harm Value/harm	Living conditions of humans	Man

The proposed contents of table 2 are only tentative and should be subjected to more scrutiny. Focus at this stage is on the output measurements. The logic here is different from that of GRI, where a large number of indicators based on proposals from different stakeholders have been organized into a measurement system. Instead we have based our proposal on the assumption that the right thing is to make best use of resources. The important difference with the value we propose is that it includes customer value and not only the revenue for the producing company as in the GRI-system. In a world with limited resources the company that produces best value for its customers in comparison to harm caused could be the one that retains its “license to operate”. In this paper we focus on value for the customer.

Here, we do not go into the discussion of differentiating customer value, which could be done on a needs basis using, for example, the Maslow hierarchy of needs. Obviously there is a difference if the actual customer value is staple food or luxury cruises.

The process model in Figure 1 and the matrix for indicators in Table 2 are intended to be applied on all levels, from the global to the sub-organizational process level.

Managing CSR in the Supply Chain

How to manage CSR might be seen as a supplement to risk management. Companies and organizations generally have policies on how to manage their supply chains starting, from the first producer in the chain focusing on issues of ethics, environment and sustainable economic performance.

The concept of Fair Trade requires producers to take responsibility for ethical and environmental considerations, starting from the production of raw materials (Nicholls and Opal, 2005). This means that there is an ethical requirement of managing the supply chain from first line supplier to production. In “The Fortune at the Bottom of the Pyramid”, Prahalad (2006) argues that most companies have missed the opportunity of making good business while being perceived to be ethically correct. The driving force is presented as new markets and profits. On the other hand the thought of supply chain responsibility might be extended to the delivery side. It could be argued that if companies are to be held responsible for how they manage the supply chain from first supplier to user, then they should also be responsible for the supply chain from producer to end user. The good news is that this, in many cases, can be done profitably.

The proposed process model and indicators should also be applicable on supply chains.

System-based knowledge management for sustainable development

In the 1990s the most successful corporations were predicted to be learning organizations, corporations that discovered how to tap their people’s commitment and capacity to learn at every level in the company (Senge, 1990). It could be argued that learning quicker than the competition will lead to superior products and processes. In the ideal market this will be a competitive advantage that causes the learning organization survive where others fail.

Knowledge management could be seen as a management process that identifies the knowledge that needs to be managed, acquired, processed, stored, shared and used to create products (Isaksson and Trönndal, 2005). An organization that has perfect processes and perfect products has, based on the definition of Juran, zero costs of poor quality. An organization that over time maintains zero costs of poor quality requires a learning process which is perfect since changes to product and process requirements are continuous. Based on this reasoning it could be said that an organization that over time maintains zero costs of poor quality has a perfect process of knowledge management and therefore is a learning organization. This reasoning could be extended from products and

the customer to process effects and interested parties. The cost of poor quality definition could be applied on the Triple Bottom Line and could be called the Sustainability Cost of Poor Quality (Isaksson, 2005). The benchmark level of “the learning organization” should result in all processes being effective, efficient and flexible with minimal sustainability costs of poor quality. For the collective of all stakeholders and interested parties it is of interest that the organizations that apply True Sustainable Development are those that survive - the Learning Sustainable Organizations.

We have proposed the use of process based system models. If the models are to include all important elements they should also be compatible with the system thinking presented by Senge (1990), and to the five disciplines he uses. On a superficial level the five disciplines of Senge might be incorporated in the process based system model as part of resources using the 9Ms described in Table 1. Personal Mastery could be seen to form part of the resource Man, whereas Shared Visions should belong to the Management resource that embodies culture and values. Team Learning and Mental Models could be fitted into Method, which describes how the organization works with techniques such as group learning and scenario thinking. System Thinking is ensured by the model itself.

For the M-resources, virtual benchmarks can be created based on the ideal situation of zero sustainability costs for poor quality. The Ms could be seen as criteria from a simplified Business Excellence Model (Garvare, et al., 2007).

Change management for sustainable development

The five previous areas describe ideas of how work with sustainable development could be defined, categorized and managed. A part that is missing is the issue of “Barriers to behavioral change” mentioned in the *Stern Review*, i.e., how to create the sense of urgency that makes change happen. Change as a process might be divided into two parts: Creating interest for change and improving processes (Isaksson, 2006). The generic change process could be seen as “improving processes and use of resources” proposed in Figure 1.

We believe that Change Management for sustainable development needs to be addressed from three different perspectives; strategic, structural and human. The *strategic perspective* covers long and short term change objectives which need to be clearly defined and communicated. The *structural perspective* covers organizational and infrastructural change aspects. The *human perspective* deals with behavioral change aspects. A precondition for this is that management has the required understanding of the importance of the resources Management, Method and Man, i.e., there has to be an agreed principle of focus on the personnel and an understanding of how the chosen mode of management is intended to work.

The actual level of poor quality should be related to the organizational processes work- it is management who carries responsibility for poor quality. If management has been in place for some time it is likely they would defend the status quo in what could be labeled Organizational Defense Mechanisms (Argyris, 1990). Unfortunately, great opportunities often go hand-in-hand with strong defense mechanisms. We propose an axiomatic statement to describe this: “*The higher the potential for improvement is, the lower the interest for change*”. Theoretically, creating the sense of urgency, a first step in creating interest for change, might be achieved by greater transparency of performance. Organizations unable to live up to the requirements of True Sustainable Development would then in the long run lose their “license to operate”.

Benchmark level change could be defined as within Six Sigma improvement where a benchmark rate of improvement is given as realizing 50 per cent of the potential per year; see Magnusson et al., (2003). This methodology provides an alternative way of assessing True Sustainable Development. If it proves that the benchmark rate of improvement does not qualify as True Sustainable Development then system conditions must be changed. Benchmarks for best system performance can be based on different assumptions, ranging from making best use of existing system to total reengineering.

An important issue of debate is whether or not companies and organizations should be obliged to do what they can to improve Triple Bottom Line performance. If a company is

not making an effort to make best use of resources and continues to operate with a significant cost of poor quality, should it lose its “license to operate”?

Carbon emissions

We have made some calculations based on CO₂ emissions and discussed the extent to which this approach could be extended to other elements of sustainability. According to the *Stern Review*, further increase in CO₂ emissions based on “Business As Usual” scenarios will not only be very expensive, but could also lead to unforeseen disruptions in the world climate. These risks are now perceived to be at such a level that it might be possible to reach a broad agreement on the necessity of change. We would need to reduce current levels of carbon-emissions by roughly 70 per cent in the industrialized world, in order not to continue increasing the CO₂ content in the atmosphere. This should be done in a period of about 50 years. Using the current Swedish average of 7 metric tonnes of CO₂/year (as CO₂ equivalent) per person we could set the performance target at 2 tonnes CO₂/person and year (70% reduction) to be achieved in 50 years. A simple linear reduction results in taking off 0.1 tonnes of CO₂ per year. Based on “Sweden’s National Inventory Report 2007”, CO₂ emissions have been reduced by 7.3 % over the period 1990 to 2005. This results in a reduction of about 0.033 tonnes of CO₂ per year. While this is an improvement, which in an international comparison might be very good, it still does not qualify as True Sustainable Development (TSD), since the rate of reduction is only one third of what is required. The EU proposal of cutting emissions by 20% from the 1990-level until 2020, corresponds to about half the level of TSD.

In a similar way we could continue breaking down the actual emissions and targets into different areas such as transport, industry, food and heating, as well as to different regions. We can do this on an individual level and get figures of how much reduction is needed per year to achieve True Sustainable Development with regards to CO₂ emissions. Establishing goals should facilitate assessing what is required, and should also create a sense of urgency. However, there is a problem with focusing on one element and generally with looking at footprints only. What is missed here is the value produced for the harm done. Should we stop going to research conferences in order to reduce CO₂

emissions, or is the value produced enough to justify the harm done? We will have a look at this in connection with measurements.

The chosen approach of basing requirements for True Sustainability and True Sustainable Development on global system limits seems at least for the area of CO₂ emissions to be promising and to merit further research.

Process based system models for the global cement industry

The origin of the model is from the cement industry and most elements of it have been tested on cement industry applications successfully. The operative processes can by default be divided in marketing and producing. The process of producing cement normally splits into the sub-processes of quarrying, raw milling, clinker burning, cement milling, packing and distributing, see Figure 2. The process of clinker burning is the one that drives the total carbon emissions of the plant. The same model could be applied on clinker production with the purpose of studying the details. In Figure 2 a box for external resources has been added. For a branch, or for a company, there are always a number of resources that affect the performance. Examples are such as the country worked in, the level of corruption, possibilities to buy raw materials and services, competition etc. These external resources will affect how the information from different interested parties and stakeholders is interpreted. It could for example be assumed that in a monopoly situation customer complaints will receive little attention. Another example is that focus on environment will probably be reduced if authorities are corrupt.

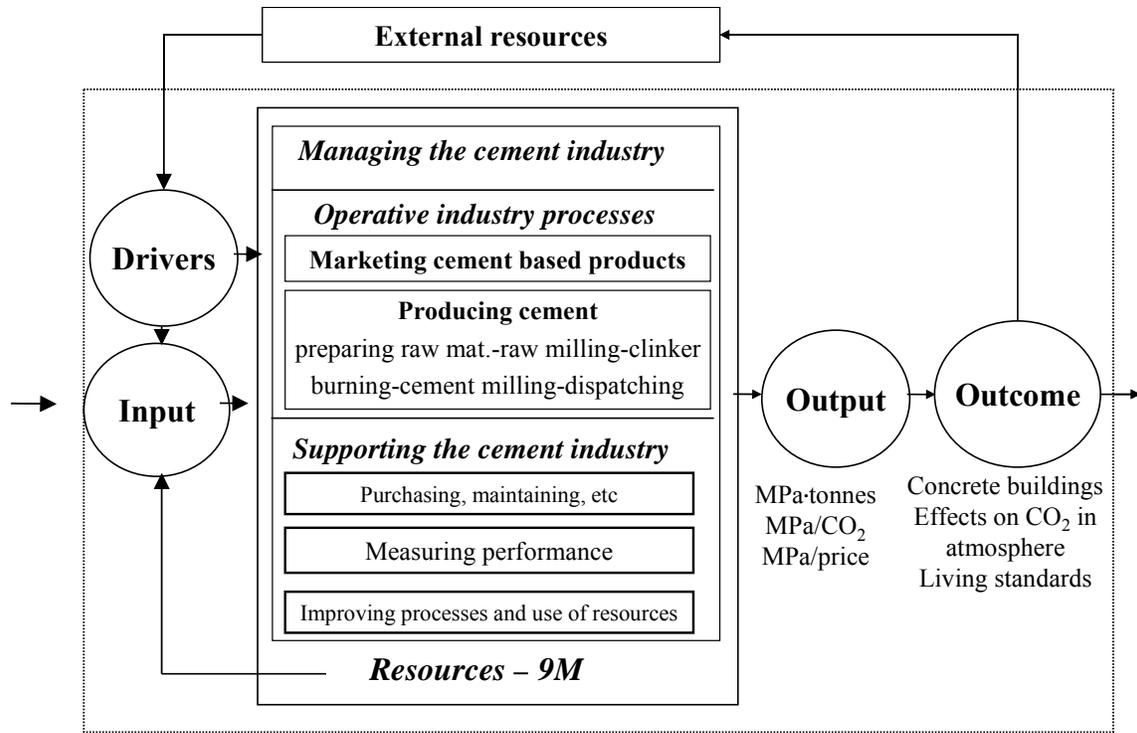


Figure 2. The process model from Figure 1 applied to the global cement industry.

The model, including the 9Ms, can be used to make a qualitative assessment of the situation. On the level of management it can be said that the 10 largest companies control about 50% of the world market outside of China. There have been several accusations on cartels, for example in Europe. It seems that competition between countries and companies in Europe is limited. Since competition is essential for development and making best use of resources it could be that the cost of poor quality in the cement branch is high.

The process model proposes an alternative to give a first overview of any system and its main elements. To what extent the model really clarifies the situation still requires further research.

Measuring sustainable development and sustainability II

We continue with our example of the cement industry to exemplify measurements. In Figure 2 some output and outcome indicators have been introduced. Starting with the outcome the cement industry has an important Triple Bottom Line impact. Concrete is the

most used material in the world after water with a global per capita use of about 3 tonnes/person and year. Out of this about 10% consists of cement. The user value is substantial, since in many of the cities of the world, especially in Third World countries, there are few alternatives to concrete. The cement industry is responsible for some 5%. Cement production grows with some 4% per year and is predicted to increase four or five fold by 2050. The building industry is a main source of employment and housing standards form an important part of quality of life.

The output measurements are proposed as:

- Economy – Customer value as building value produced measured as the product of cement quantity and quality with strength as the main quality parameter
- Environment – Customer value/carbon emissions
- Ethics – Customer value/price

One of the important resources is Measurement. What you cannot measure you cannot improve. Hence, checking how important measurements are carried out provides a first hint of the existing potential. An assessment of sustainability reports from the industry leaders show that the proposed performance indicators are not being measured, or at least not reported, (Isaksson, 2007). The environmental figure reported is carbon emissions per tonne of cement produced, which does not take into account that cement strength could vary with by a factor of 2 and thus becomes a very blunt measurement. On a plant basis, case studies have showed how lack of measurements can mask substantial potential that would have been reasonably easy to realize (Isaksson and Taylor, 2006). The indicators have also been applied on the global cement industry (Isaksson, 2007). Results are presented in Table 3. For this some clarifications are needed. Value added in cement terms can be roughly expressed as the strength of cement mortar measured at the plant, which correlates to the strength of concrete when using the same concrete mix. The compressive strength value at 28 days, normally presented as the final strength, is used. For cement it is important to have a low variability and the EN 197-1 standard requires that the L-value is used giving the lower confidence limit where 95% of the values are

higher. The customer value could then be expressed as tonnes produced times 28 day's strength as L-value.

The value per harm becomes L-value for a tonne of cement per tonnes of CO₂ emitted. The value per price is simply the L-value/price. For all these indicators benchmarks for quality, emissions and price can be set. In Table 3 an estimate of the global improvement potential for cement manufacturing based on the following benchmarks:

- Cement value as the L-value at 28 days = 60 MPa, which with a low variation would require an average of about 63 MPa. This is a relatively high value, but achievable.
- Emissions of 720 kg CO₂/tonne of cement, which is a quite moderate benchmark
- Cost of cement based on a survey of prices in different countries as 63 US\$/tonne (values from 2002)

These values have been compared to actual values collected from available data. The cement industry normally only reports emissions per tonnes produced and the ratio of quality to price is basically a taboo that is not discussed. All the leading cement manufacturers refer to the Global Reporting Initiative guidelines and many produce extensive sustainability reports. However, it is not possible to find information on value/harm or value/price. One explanation is that these indicators are not included in the GRI guidelines.

Table 3 – Improvement potential in global cement production. Actual and best case scenarios for a fixed level of building need, (Isaksson, 2007).

	<i>Cement Mt</i>	<i>Price BiO US\$</i>	<i>CO₂ Mt</i>	<i>Comments</i>
<i>Actual</i>	2000	164	1700	Assessed values
<i>Benchmark</i>	1500	95	1100	Based on equivalent MPa tonnes
<i>Difference</i>	-500	-70	-600	
<i>Difference in %</i>	-25%	-42%	-36%	

The estimated differences from Table 3 show the importance of taking into account the value of cement produced and relating it to CO₂ emissions. If we would produce at benchmark level we could produce the same “building” value with 25% less cement. At

benchmark levels we could also lower the prices and the harm done by some 40%. This would correspond to a reduction of the global carbon emissions by 2%! Everybody would gain except the producers who would lose volume. Therefore there is little incentive in improving performance as long as the competition does not force it. The figures in the survey are indicative only, but still serve to show that it is important to include quality into sustainability. Additionally 10 plants in different countries have been studied confirming the existing potential and relating about 50% of it to lack of optimization and excessive variation (Isaksson, 2007). This means that half of the potential could be realized with traditional quality work not requiring any major investments! One conclusion is that the main reason for not realizing existing potential is lack of drivers.

We argue that the value/price is a social indicator. Especially, we think this is the case with cement manufacturing. We have examples from leading companies delivering only one third of the value/price in poor countries (Isaksson, 2005). If possible, it is tempting for the producers to pass on the costs of poor quality to the customer. This is not making best use of resources and especially when it means that poor people cannot improve their living standards it is also ethically unacceptable.

We believe that better indicators are needed and that our proposals can be used as a starting point. More transparency is needed and it could be argued that simplifying indicators is a way to improve transparency.

We claim that this brief review clearly indicates that quality improvement forms an essential part of sustainable development. A high cost of poor quality means that the customer is getting less for both the environmental and ethical harm (price). The Triple Bottom Line should be viewed more from a customer perspective. Value produced is not only the value for the producer as proposed by the GRI-guidelines but should include all interested parties with a much greater focus on the customer. With scarce resources, focus needs to be on maximizing customer value in relation to harm.

Differentiating customer value by some objective principle of needs is an important area of future research.

Managing Corporate Social Responsibility in the Supply Chain

Cement is the most expensive component in concrete and in poor countries often the most expensive component of a building. It could be argued that a cement producer should manage the CSR in the entire supply chain from raw materials to end product. Since most cement plants start with a quarry the main raw material is part of the companies own processes. It could also be argued that purchase of fuels should be managed in such a way that social responsibility is assured.

On the down stream side there are the processes of producing concrete, producing concrete structures, building and using the building. An example of the importance of a CSR view can be described using a case study for a plant in Iran in 2005. The background was an initiative from the Iranian government to reduce energy consumption and especially to reduce the national consumption of oil, which already exceeded 30% of what was produced. Oil is practically the only export product and projections indicate that in a not so distant future all the oil could go for national consumption.

The cement industry in Iran is large with some 30 million tonnes produced per year. In order to save energy in the sector the government has been in co-operation with Sweden to arrange training on energy saving. Training courses have been organized in Sweden with a final presentation in Iran. One of the authors of this paper, Isaksson, took part of this project and participated in the final presentation in June 2005 in Iran and presented some ideas on what could be done. This experience is the base for an assessment of what functional focus and a lack of process view can do. The project participants were mainly managers within production, electrical maintenance and plant management. Everybody had their own rather limited agenda. During their visit to Sweden in 2004 the group was not very impressed with the kiln energy consumption, which was an important focus area. From the Swedish side we tried to argue that we should not only look at the tonnes produced, but what the clinker ground to cement could do. In effect we should compare

the total energy consumption to the strength performance value L in cement. At the final presentation in a plant in Iran the conclusion was that the plant had a factor of utilization, which was as good as in Sweden and a kiln energy consumption that was lower. However, when the cement performance was taken into consideration the value of the plant output as L-tonnes could have been increased by 20% to a market value of about 7 million Euro per year. This was not of interest since only tonnes counted and the government requirement was on lowering energy in the kiln production, which could be done by producing an inferior clinker (kiln product). Outside of the project the Swedish team discussed what good management of the supply chain could do and concluded:

- Technical improvements in the sub-processes of clinker burning and cement milling: about 5 to 10 per cent energy saving per user value produced
- Focusing on making the best cement with the actual standard : +20% saving
- Collaboration with builders to produce the right cement needed: for the concrete applications +20-30% saving
- Building houses to last (currently houses in Teheran are pulled down after some 20-30 years due to the rapid expansion, and building standards are thereafter) extending the life time with 100%: +50% saving
- Building houses to consume less energy – heating and cooling (80-90% of the energy of a building is from the use of it): +?
- City planning to require fewer transports: +?

Lack of process focus for the building supply chain in Iran could in the worst case mean that only half, or possibly even much less of the building potential of cement is used. The example above is based on one plant only, but since the drivers for change are the same in the entire country it could well be that the same situation applies for other plants. Only the saving mentioned above of making best use of the cement, if extended to the entire country, would mean that the same work could be done with 20% less cement or 6 million tonnes corresponding roughly to 5 million tonnes of carbon emissions. If the extra energy used is translated to oil this means a loss of about 0.4 MT of oil export or some 140 MUS\$ in revenues in 2007 prices.

In the case of somebody having the interest and authority to manage the entire process from raw materials to ready buildings in a planned city it could be foreseeable in the longer run to reduce the carbon-emissions per person, per year for housing by a factor 10!

The ideas were briefly discussed, but any future work fell on the problem of a high number of ministries even within the building sector and numerous persons that would have to be involved. Basically nobody owns the problem. Instead everybody owns a job and a function which requires a high level of turf fighting to be successful.

The example is presented here with the assumption that governments also should take social responsibility. The example is probably valid for any country. The question is if private companies should take responsibility for the entire supply chain. The example of Iran indicates problems with a low performance of value per environmental harm. The examples from the previous section, particularly results from Table 3, indicate low performance both for environmental harm and social harm. Iran on the other hand has had the cheapest cement in the world but maybe not the best value per price performance.

Extending our earlier reasoning it could be argued that companies need to make best use of resources not only within their organization but in the entire supply chain from suppliers through production to end users. Only when this is done at minimal costs of poor quality, or at least working with True Sustainable Development should companies be said to show Corporate Social Responsibility.

System based knowledge management for sustainable development

The applications on this level do not even qualify for anecdotal evidence, but are only introduced as a point of depart. The purpose is to visualize how knowledge management relates to sustainable development. The principal issue of knowledge management is to identify the knowledge to be managed. The rest of how it is acquired, processed, stored, shared and used for the products could be seen as secondary. Here, we only look at identifying knowledge and we do it in reference to the 9Ms. The method is based on a

review of a number of plant studies done by one of the authors. In retrospect the 9Ms are viewed in the light of focus on knowledge management. Results are presented in Table 4.

Table 4 – The 9Ms used to review focus on knowledge management in a group of cement plants. NIP = Not identified by plants.

<i>9M:s</i>	<i>Ms as resources – identified issues for knowledge management</i>
<i>Management</i>	<i>Policies, goals and strategies for TBL – Reactive and policies not taken seriously. No focus on understanding and improving company culture.</i>
<i>Method</i>	<i>Relevance of organizational structure compared to needs (by order, by rules, by objectives, by policies) – (NIP) System understanding of technical and social systems – NIP; Understanding the process view –NIP in spite of ISO 9001 certification.</i>
<i>Man</i>	<i>Personnel competence – Some focus on doing things but not clear what is important Management competence compared to chosen organizational structure – NIP</i>
<i>Measurement</i>	<i>System based measurement systems – Generally NIP. Focus on different often disparate systems for measurement – knowledge management related to keeping up specific sub-system competence.</i>
<i>Machine</i>	<i>Equipment competence – Identified as important.</i>
<i>Material</i>	<i>Control of incoming material and raw material deposits – Mostly identified.</i>
<i>Milieu</i>	<i>Effects of working climate on results – Some focus on working environment in first world plants.</i>
<i>Market</i>	<i>Understanding different stakeholders – Mostly identified and managed in the shorter time perspective.</i>
<i>Means</i>	<i>Understanding requirements for continuous upgrading and improvement – Limited focus</i>

The more concrete resources such as Machine, Man and Material are more frequently dealt with as are traditional areas like Market. The more abstract resources such as organizational structure and system understanding (Method) and culture (Management) are normally not identified. Logically, when system understanding is limited there will be lack of important indicators and control loops (Measurement). If this is correct, an analysis of the maturity of the measurement system will give some indication of how well important knowledge has been identified by management.

Lack of focus on managing the knowledge of important resources could be an artifact of limited competition. It is reasonable to believe that companies with limited system

understanding will have a large cost of poor quality. In a competitive market companies with high costs of poor quality cannot shift those costs to the customer.

The idea of using a scale for Measurement system maturity to indicate the level of focus on knowledge management could be an interesting area of research.

Change Management for Sustainable Development

A question is to what extent change is happening in the cement industry and if this change could classify as True Sustainable Development. Results of research presented in Table 3, and reasoning in the text above, indicate both an important improvement potential and a limited interest for change.

The global cement industry is growing and if the increase continues it will be five times as big as now in the year 2050. Assuming that the ratio of strength/carbon-emissions does not improve, the cement industry will be responsible for 25% of the global emissions in 2050 based on the same level of global emissions as in 2007. Requirements are that global emissions be reduced by 70% by 2050, if unknown risks with global climate are to be avoided. Since building needs still are huge in the Third World and concrete is a dominant building material, the solution cannot be to stop producing cement. Accepting the demand of reduced carbon emissions and that the building needs are real leads to the conclusion that cement performance in concrete should improve about 15 times! With some reduction in building activities in areas of over-consumption it could be that a factor 10 improvement would be enough. Looking at the entire supply chain, as in the example with Iran above, indicates that this might be possible.

A review of what the world leading cement companies refer to presents the following focus (Isaksson, 2007):

- replacing carbonated raw materials with already decarbonated materials;
- replacing fuels (using alternative fuels, notably biomass);
- improving energy efficiency by modernizing plants and processes;

- using clinker additives (slag, fly ash, limestone, pozzolans, etc).

These measures will have some limited effect. However, as discussed earlier when studying the improvement potential in Table 3, about 50% of the improvement could be related to non-optimized processes and large variability. The presented focus only looks at replacing equipment – “The toys for the boy’s solution”. Furthermore the strategy of alternative fuels comes with some problems. The Cement Sustainability Initiative of WBCSD does not mention how alternative fuels increase complexity and often increase process and product variability. In the worst-case specific energy consumption in production could increase by 20% with additional deteriorating effects on cement quality. There are obvious economic benefits in using alternative fuels, but for other than direct replacement of fossil fuels, it is difficult to find much information on how this has reduced the emissions of CO₂/tonne of product. The level of biomass substitution, which is the most effective replacement strategy, is reported by the three major companies to be quite low, at 1-3%. If this is correct then one of the major strategies of the international cement industry to reduce carbon-emissions, the use of alternative fuels, actually makes things worse!

Additionally there is work going on to reduce the cement component in concrete. However, the conclusion is that the rate of improvement and strategies chosen do not address the challenge set by global system limits. Also, there is no debate on providing good value cement for a reasonable price to poor customers. In less competitive markets such as Africa, companies belonging to the world leaders occasionally provide only 20-30% of the value for price. Putting it bluntly, the market situation permits companies to sell bad cement at high prices and to earn well with excessive costs of poor quality!

Important reasons for the current situation seem to be that objectives of True Sustainability have not been identified and that the measurement system does not include any indicators of value per harm. Without proper measurements and proper targets improvement becomes difficult. The most obvious reason for this condition is that the drivers for change are weak because of lack of interest from authorities, the general

public and other interest groups. As long as cement companies can transfer the costs of poor sustainability to other interested parties, this risks being the main course of action. With increased transparency the situation could be improved

Conclusions and discussion

The six areas examined are all related to three important principles; Focus on interested parties (including customers), focus on processes and striving for fact-based decisions. This is built on the view of a management system for Sustainable Development as a set of principles, methodologies, and tools, see Garvare, et al., (2007). Working definitions based on available facts create the required overall objectives. Using process models with measurements these can be deployed (as in the example of carbon emissions) in any organization or process.

The process view is commonly seen to have its greatest benefits when crossing functions and even more when crossing businesses. Logically, focusing on sustainable development and CSR on supply chains should prove to have an important improvement potential.

If creating interest is a precondition for change then having the understanding of what is important should be a precondition of interest. Knowledge management for SD and CSR should start with management recognition. A simple test is to see if and how important sustainability related knowledge in the organization is actually monitored. With knowledge there is a chance to create interest. A contribution from quality management to create an interest could be to provide methodologies and tools for describing and measuring processes. What cannot be measured cannot be improved. Increased transparency with relevant information should reinforce drivers for change. In the next stage of change management there are many methodologies and tools in the quality management portfolio that might be used for improved process sustainability.

The example of the international cement industry and its carbon emissions shows that there is a significant potential in applying principles from quality management to improve Triple Bottom Line performance. We realize that using carbon emissions and a

commodity industry with limited competition is a simplification compared to many other businesses. However, thinking of areas such as the global agro-business, steel and the oil industry, there could be similarities. Even in its own right the cement industry merits continued scrutiny.

The first and sometimes hardest part in change is creating necessary levels of interest (Isaksson, 2006). There is little in the traditional quality management tool box that really addresses this part. The closest is maybe using the cost of poor quality to demonstrate improvement potential. When we want to improve we mostly look for new solutions before seeing what can be done to improve the old ones. Often an analysis of actual performance will show that with optimization, based on reduced variation and the setting of correct targets, much could be gained. This requires system understanding, including an understanding of variation.

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CHAPTER NINE

Market structure, market strategy and customer satisfaction

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Introduction

The popularity of customer satisfaction measurements in general and the EPSI Rating Framework in particular has grown considerably over the last few years and more and more companies are using this sort of information in their strategic planning process.

The primary result of interest for businesses is the level of the seven indices in the EPSI Rating Framework and we know quite a lot about the behavior of the EPSI Rating Framework with respect to the index values (Eskildsen et al., 1999, Selivanova et al., 2002, Eskildsen et al., 2003, Juhl et al., 2002, Fornell, 1992, Fornell et al., 1996, Kristensen et al., 2001, Kristensen and Westlund, 2003) as well as the structure of the framework (Eskildsen et al., 2004). However, we know very little about the impact of the structure of the individual markets with respect to the transparency of products and services as well as consumer preferences.

The aim of this paper is therefore to analyze the effect of market strategy on customer satisfaction with respect to the transparency of goods and services as well as consumer preferences. The data for the analysis comes from the Danish Customer Satisfaction Index 2004-2005. Here a total of 14540 customers have evaluated their preferred supplier within the following industries:

- Banking (8 companies)
- Property insurance (8 companies)
- Supermarkets (8 companies)
- Mobile telecom (7 companies).

The analysis will reveal whether or not market structure has an effect on customer satisfaction measurements and whether or not these differences vary from industry to industry. The paper concludes with an evaluation of the implications of the findings in relation to the use of results from customer satisfaction studies.

The EPSI Rating Framework

In 1989, Sweden became the first country in the world to establish a uniform, cross-company and cross-industry methodology for measuring customer satisfaction and customer loyalty. This national measurement instrument for customer satisfaction and customer loyalty is called the Swedish Customer Satisfaction Barometer (SCSB).

SCSB was adopted and adapted for use in the American Customer Satisfaction Index (ACSI) in 1994 and the successful experiences of the Swedish and American customer satisfaction indices inspired moves towards establishing a uniform methodology for measuring customer satisfaction and customer loyalty in Europe. Based on the recommendations from a feasibility study and by the work provided by the ECSI Technical Committee the EPSI Rating Framework for measuring customer satisfaction and customer loyalty was designed (Eskildsen et al., 2004).

A pilot study was conducted in 1999 and measurements have so far been implemented in a small set of industries in a sample of European countries. EPSI rating is a trademark of, and managed by, the European Foundation for Quality Management (EFQM), the European Organization for Quality (EOQ), and the academic network International Foundation for Customer Focus (IFCF) (Kristensen and Westlund, 2003). The EPSI Rating Framework is shown in Figure 1.

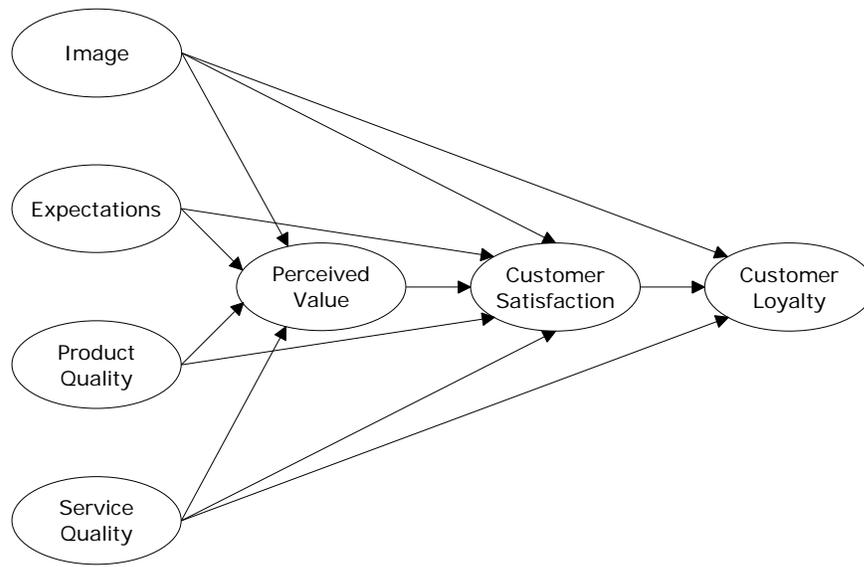


Figure 1: The EPSI Rating Framework

The EPSI Rating Framework is a structural equation model. The model stipulates that perceived value, customer satisfaction and customer loyalty are driven by company image, customer expectations, product quality and service quality. Each of these seven variables is seen as latent, i.e., non-observable, variables. The way in which the EPSI Rating Framework is estimated is described in the methodology section.

Experiences from the EPSI rating initiative

As previously mentioned the EPSI rating framework itself has been of the focus of numerous studies (Eskildsen et al., 1999, Johnson et al., 2001, Eskildsen et al., 2004, Selivanova et al., 2002, Eskildsen et al., 2003, Juhl et al., 2002, Fornell, 1992, Fornell et al., 1996, Kristensen et al., 2001, Kristensen and Westlund, 2003) and other studies has focused on the statistical technique used to estimate the framework (Jöreskog and Wold, 1982a, Cassel et al., 1999, Fornell and Cha, 1994, Kristensen and Eskildsen, 2005, Kristensen and Eskildsen, 2006).

Two of the present authors have previously conducted analyses that used the experiences gained from the EPSI rating initiative as input to simulation studies (Kristensen and Eskildsen, 2005, Kristensen and Eskildsen, 2006). The areas addressed were:

- Exogenous distribution
- Multicollinearity between latent exogenous variables
- Indicator validity
- Indicator reliability
- Structural model specification error
- Sample size
- Number of manifest indicators in each block
- Missing values

The analyses showed that the EPSI rating framework is quite robust against all these anomalies; which supported previous findings (Kristensen and Eskildsen, 2005, Kristensen and Eskildsen, 2006, Cassel et al., 1999).

The effect of transparency

As mentioned above the performance of the EPSI Rating Framework under different conditions has undergone considerable scrutiny. However, none of the mentioned studies have focused on one of the most intriguing experiences that the authors have gained from the EPSI rating initiative (Eskildsen and Kristensen, 2005). In most of the analyses conducted in relation to the EPSI rating initiative the measure behaves as expected. If a company for instance is able to improve the four exogenous variables they will experience an increase in perceived value as well as in customer satisfaction. In some instances, however, the authors have witnessed that the measures behave unexpectedly. Sometimes a company that for instance is able to improve the exogenous variables has not experienced an increase in perceived value or customer satisfaction (Eskildsen and Kristensen, 2005). What is causing this phenomenon? It is as if the perceived value variable in the EPSI Rating Framework has been affected by something from outside the framework and thus caused an unexpected result with respect to customer satisfaction.

The perceived value variable expresses the customer's perception of the value of the products and services that the company has provided seen in relation to the financial burden the that the customer has endured. This evaluation is dependent on the customer having sufficient information; so if a company is trying to obtain a higher margin by exploiting the information asymmetry between the customer and the provider the evaluation will be more or less hindered. If a customer experiences a situation where he suspects that information is being withheld this will probably lead to a lower evaluation of perceived value and thus lower customer satisfaction.

The authors therefore suggest that perceived transparency of products and services may influence the customers' perception of the value provided by the company as indicated in Figure 2 below.

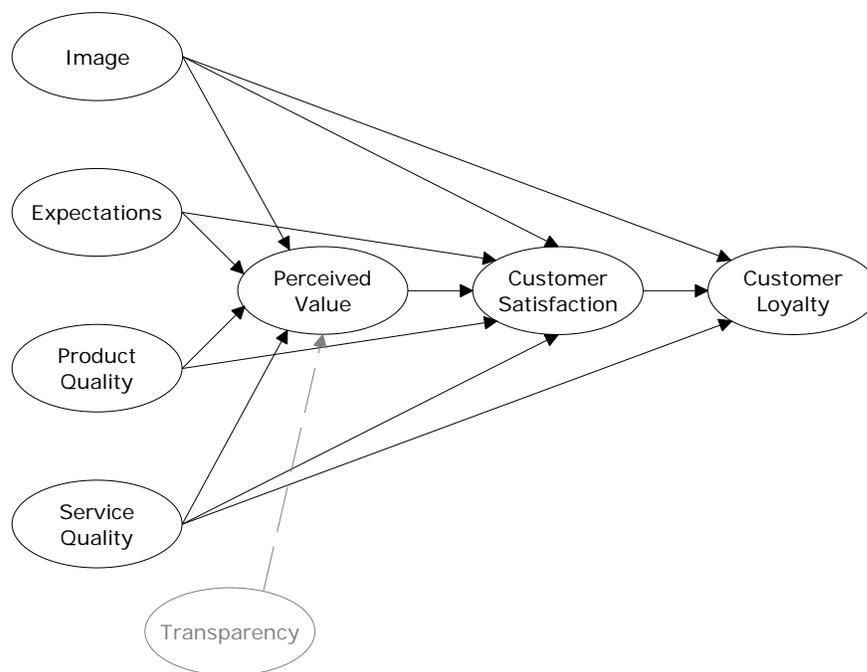


Figure 2: The effect of Transparency

Figure 2 shows a relationship where customer satisfaction is affected by perceived transparency through perceived value for each individual company. The strength of the relationship is probably dependent on the preference structure of the company's

customers, but what if the differences in customer preferences between companies are really due to an inherent structure in the marketplace? This is the topic of the following section.

The effect of preference structure

Many studies have reported findings related to company or industry differences with respect to indices for customer satisfaction and customer loyalty (Eskildsen et al., 1999, Selivanova et al., 2002, Eskildsen et al., 2003, Fornell, 1992, Fornell et al., 1996, Kristensen and Westlund, 2003). Similarly some work has been done with respect to differences in satisfaction between different demographic groups (Kristensen and Eskildsen, 2006).

Three recent studies have reported findings related to the drivers of customer satisfaction and customer loyalty and all three studies include findings from different industries (Johnson et al., 2001, Eskildsen et al., 2004, McDougall and Levesque, 2000). The conclusion from these studies is that the overall effects of the drivers of customer satisfaction and customer loyalty are different across industries. Furthermore, these findings indicate that it primarily is the overall effect of service quality on customer satisfaction and loyalty that is dependent on the type of industry. In situations where there is a large element of personal interaction between customer and provider, service quality is likely to be more important than in situations where there is almost no element of personal interaction between customer and provider (Eskildsen and Kristensen, 2006).

All in all we know quite a bit about the drivers of customer satisfaction and loyalty at the corporate level as well as the effect of demographics on the level of customer satisfaction. There have, however, not been many studies focusing on the market at large as a defining factor for customer preferences. It might be that the differences that we observe at the corporate level are really due to some inherent difference in the market structure. If this is the case it should be possible to identify different segments in the market with distinctively different preferences (Eskildsen and Kristensen, 2006).

In the next section the methodology of the EPSI Rating Framework is described.

Methodology

As mentioned the EPSI Rating Framework is a structural equation model with seven latent variables. Each of the latent variables is operationalized by a set of measurement variables. Research has shown that the use of multiple indicators for each latent variable increases the precision of the estimate, compared to an approach where a single indicator is used (Oshagbemi, 1999). A major advantage of the EPSI Rating Framework is the use of generic questions, which are sufficiently flexible to be applied across a wide variety of products, services, and public sector services, such as education, health care, etc.

The EPSI Rating Framework is estimated using Partial Least Squares (PLS) which is also the case for both the Swedish and the American customer satisfaction indices. PLS is the preferred technique since the focus of the EPSI Rating Framework is on predicting customer satisfaction and loyalty; a purpose for which PLS is superior to other structural equation modeling techniques (Jöreskog and Wold, 1982b). Furthermore PLS is a very robust technique since it is not sensitive to skewed distributions and multicollinearity as other structural equation modeling techniques tend to be (Cassel et al., 1999, Kristensen and Eskildsen, 2005). The PLS model consists of three parts: inner relations, outer relations, and weight relations (Fornell and Cha, 1994, Wold, 1980a). The inner relations depict the relations between the latent variables as shown in (1).

$$(1) \quad \eta = \mathbf{B}\eta + \mathbf{\Gamma}\xi + \zeta$$

In the inner relations η is a vector of the latent endogenous variables and \mathbf{B} the corresponding coefficient matrix (Fornell and Cha, 1994, Wold, 1980b). ξ is a vector of the latent exogenous variables, $\mathbf{\Gamma}$ the corresponding coefficient matrix and finally an error term, ζ , is included.

The second part of the model is the outer relations (Fornell and Cha, 1994). This part of the model defines the relationship between the latent variables and the manifest variables and in contrast to LISREL these can both be reflective and formative by nature (Jöreskog and Wold, 1982b). Since the analysis performed here is based on reflective outer relations only this situation is mentioned in the following. The general formula for reflective outer relations is shown in (2).

$$(2) \quad \begin{aligned} \mathbf{y} &= \Lambda_y \boldsymbol{\eta} + \boldsymbol{\varepsilon}_y \\ \mathbf{x} &= \Lambda_x \boldsymbol{\xi} + \boldsymbol{\varepsilon}_x \end{aligned}$$

Here \mathbf{y} is a vector of the observed indicators of $\boldsymbol{\eta}$ and \mathbf{x} is a vector of the observed indicators of $\boldsymbol{\xi}$. Λ_y and Λ_x are matrices that contain the λ_i coefficients which link the latent and the manifest variables together and δ and ε are the error of measurement for \mathbf{x} and \mathbf{y} , respectively (Fornell and Cha, 1994). The weight relations are the final part of the PLS model. In PLS each case value of the latent variables can be estimated through the weight relations shown in (3) as linear aggregates of their empirical indicators.

$$(3) \quad \begin{aligned} \hat{\boldsymbol{\eta}} &= \boldsymbol{\omega}_\eta \mathbf{y} \\ \hat{\boldsymbol{\xi}} &= \boldsymbol{\omega}_\xi \mathbf{x} \end{aligned}$$

Another reason why PLS has been preferred over LISREL is the ability to calculate case values for the latent variables. In LISREL case values cannot be calculated without factor indeterminacy, which means that they should be used with caution (Bollen, 1989). This is not a problem in PLS estimation.

For each of the companies in the study case values for all the latent variables has been estimated and subsequently used in a latent class regression/mixture regression. In this analysis it is assumed that the cases arise from a population which is a mixture of S unobserved classes with unknown proportions π_1, \dots, π_S and therefore the class membership of a given observation is not known in advance.

In latent class regression the means of the observations in each class are to be predicted from a set of explanatory variables since the samples in each class are expected to be heterogeneous with respect to the regression coefficients. The unconditional probability density function of the endogenous variable y is expressed in the finite mixture form as (4) (Wedel and Kamakura, 2000), where λ_k indicates the class.

$$(4) \quad y_i : \sum_{k=1}^K \lambda_k (2\pi\sigma_k^2)^{-1/2} \exp\left[\frac{-(y_i - X_i b_k)^2}{2\sigma_k^2}\right]$$

The idea is that all parameters of the model are simultaneously estimated and this is achieved by using the EM algorithm to maximize the likelihood. The EM algorithm is an iterative algorithm which sequentially improves upon the specified parameters (Wedel and Kamakura, 2000).

This estimation procedure also has its limitations since it is rather sensitive to local optima and is thus dependent on the starting values being used. One solution to this problem is to start the estimation with several sets of starting values and then selecting the "best" set of final estimates. When the parameters have been estimated the respondents can be assigned to segments on the basis of a-posteriori membership probabilities. These quantities express the probability that a particular respondent belongs to a certain segment. The segment membership probabilities are given as (5) (Wedel and Kamakura, 2000).

$$(5) \quad \hat{P}_{ik} = \frac{\hat{\lambda}_k \hat{f}_{ik}(y_i)}{\sum_{k=1}^K \hat{\lambda}_k \hat{f}_{ik}(y_i)}$$

In this context the estimated value for "Customer Satisfaction" has been modeled as depending on "Image", "Expectations", "Product Quality", "Service Quality" and "Value for Money".

The data used in the analysis is from the Danish Customer Satisfaction Index 2004 and 2005. The analysis focuses on banks, insurance companies, supermarkets and mobile phone operators with a total of 30 companies (including three “other” categories). A total of 14540 responses have been collected including an evaluation of how difficult it is for the customer to evaluate the quality of products and services as a proxy for perceived transparency. All questionnaire items have been evaluated by the customers on a 10 point rating scale that are subsequently rescaled to 0-100 to ease the interpretation of the results.

In the following section the empirical results of the analyses are presented.

Empirical results

The effect of transparency

The first thing to explore is the hypothesized relationship between perceived transparency and perceived value.

The data for the analysis comes from the Danish Customer Satisfaction Index 2004-2005. Here a total of 14540 customers have evaluated their preferred supplier within the following industries:

- Banking (8 companies)
- Property insurance (8 companies)
- Supermarkets (8 companies)
- Mobile telecom (7 companies).

In Figure 3 the relationship between perceived transparency and perceived value is shown for all 31 companies for the years 2004-2005.

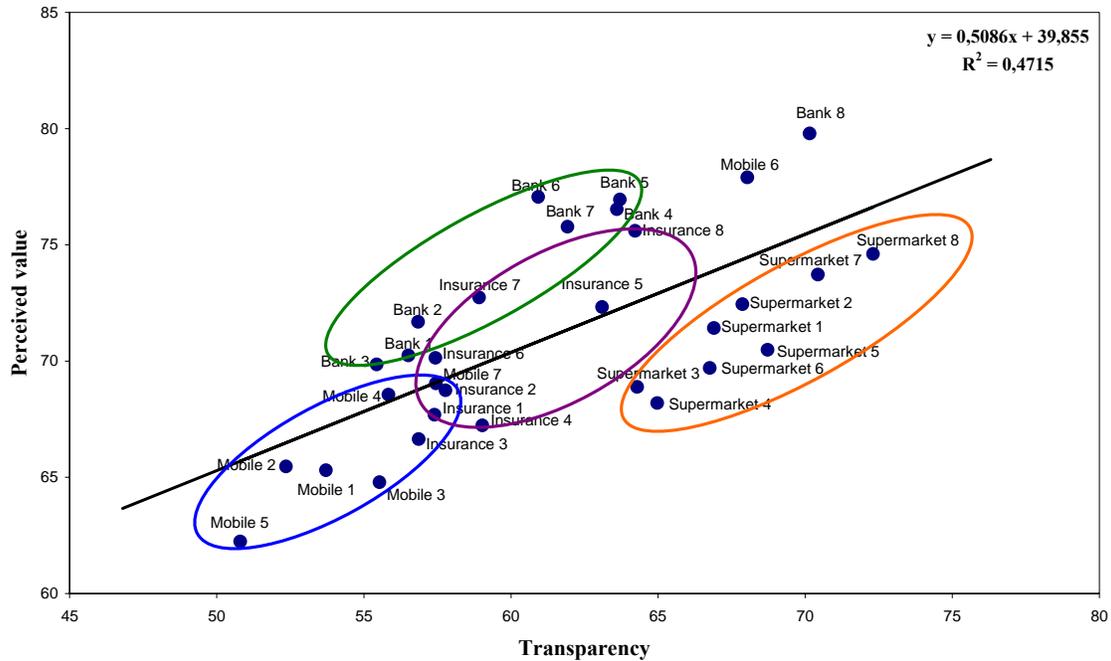


Figure 3: Perceived transparency vs. perceived value 2004-2005

As Figure 3 indicates there is a clear relationship between the perceived transparency and perceived value. Figure 3 also indicates that the relationship differs between industries since the companies from the three different industries form distinct clusters. To fully understand the relationship between perceived transparency and perceived value it is necessary to look at the individual industries.

In order to facilitate this exercise Table 1 shows the slopes and the R^2 's of a regression of perceived transparency on perceived value carried out for each individual industry in the study.

	Slope	R^2
Banking	0,705	0,888
Insurance	0,928	0,667
Supermarkets	0,783	0,840
Mobile telecom	0,874	0,945

Table 1: Results on industry level

It is evident that the relationship between perceived transparency and perceived value is very strong for banks and a decrease in perceived transparency by 1 index point will be followed by a decrease in perceived value by 0.705 index point and subsequently by a decrease in customer satisfaction. The relationship is even stronger for mobile phone operators as Table 1 shows. Here a decrease in perceived transparency by 1 index point will be followed by a decrease in perceived value by 0.874 index point. The reason for this almost 1:1 relationship may be that most of the mobile phone operators in Denmark have chosen a strategy where they try to make the market less transparent in order to obtain higher margins. Only the company Mobile 6 has chosen the complete opposite approach in the sense that it has done a lot to increase the transparency of its prices and products and customers have rewarded the company accordingly. The other operators must consider very carefully whether the higher margins obtained from decreasing transparency can outweigh the loss in revenue due to decreased customer loyalty.

The relationship between perceived transparency and perceived value for supermarkets is also very strong since a decrease in perceived transparency by 1 index point will be followed by a decrease in perceived value by 0.783 index point. The deviation between the companies within this industry is higher than in the other two industries leading to a lower R^2 . This is probably due to the fact that the analysis within this industry is more heterogeneous since the analysis included hypermarkets, discount stores as well as traditional supermarkets. The same is true for insurance companies where we find an almost 1:1 relationship but with a lower R^2 due to different approaches chosen by particularly two companies. In this industry companies 5 and 8 stand out as being different.

The effect of preference structure

The analysis revealed that there is a relationship between perceived transparency and perceived value and the next thing to investigate is whether or not there exist segments with different preference structures and to what degree these segments are industry specific. As mentioned this will be uncovered through a latent class regression within

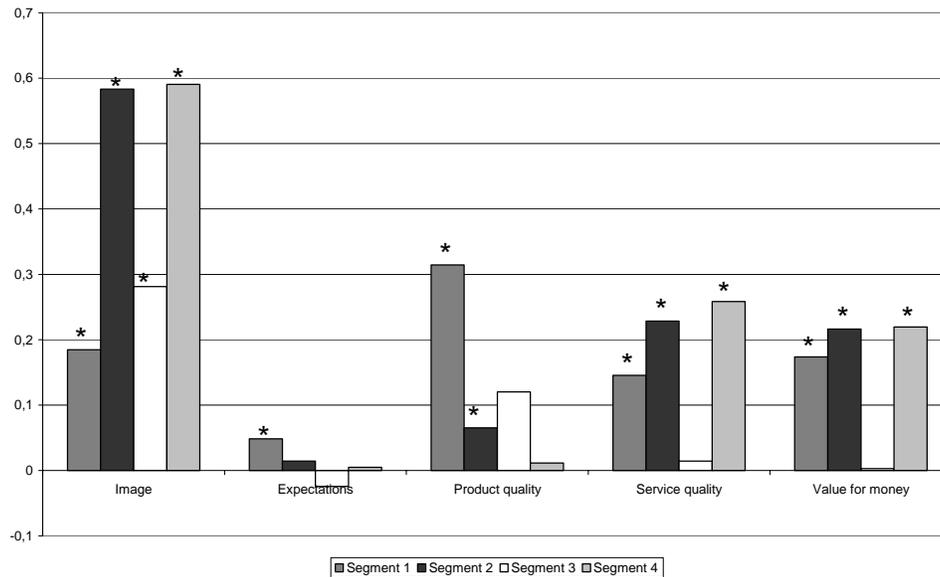


Table 2: Size of latent segments

each industry and these analyses all resulted in four distinct segments for the four Danish industries. The size of the different segments is shown in Table 2.

	Segment 1	Segment 2	Segment 3	Segment 4
Banks	39.6%	51.1%	4.2%	5.1%
Insurance companies	17.0%	23.5%	55.4%	4.1%
Supermarkets	31.0%	2.8%	53.6%	12.6%
Mobile phone operators	20.9%	24.3%	49.3%	5.5%

Figure 4: Preference segments in the Danish banking industry (* indicates a significant relationship)

Table 2 shows that all industries are dominated by one very large segment that accounts for between 49.3 % and 55.4% of the preference structures. If we turn to the importance of the five individual drivers of customer satisfaction the results from the banking industry are shown in Figure 4.

From Figure 4 it is evident that the segments are very different with respect to their preference structure and this is true for all four industries. Segment 1 in Figure 4 is

especially interesting. This segment is characterized by product quality being the most predominant driver of customer satisfaction with image being the second-most important. Actually, segments with this profile can be found in all four industries. The actual segments are:

- Banking – segment 1
- Insurance – segment 3+4
- Supermarkets – segment 3+4
- Mobile telecom – segment 3

All in all, segments with this structure account for between 39.6% and 66.2% of the preference structures across the four industries. Actually, these segments are the ones that are closest to the economist notion of the “rational man” – a being that bases his or her consumption decisions on a rational evaluation of the products and services he or she is being offered. The rest of the segments are industry specific to a smaller or larger extent.

That the “rational man” is most predominant within supermarkets is only logical since this industry is probably the one in which price plays the biggest role in consumption decisions.

Apart from the industry differences with respect to the generation of customer preferences there are also differences with respect to demographics. The areas in which there are significant differences with respect to demographics within each individual industry are shown in Table 3.

	Company	Gender	Age	Education
Banking	X		X	X
Insurance			X	X
Supermarkets	X	X		
Mobile telecom	X		X	

Table 3: Preference segments and demographics

As Table 3 indicates, the industries are quite different with respect to the relationship between the preference segments and demographics and there are no general trends across the four industries.

Some strategic implications

The analysis has shown that market structure in relation to transparency and preference structure has a clear effect on customer satisfaction measurements, and that these differences vary from industry to industry. What then are the implications of these findings for the market strategy in relation to conducting customer satisfaction studies and in relation to the use of results from customer satisfaction studies in order to optimize customer satisfaction and customer loyalty?

The presented results have shown that in the four industries studied customers' evaluation of the perceived transparency of a company's products and services is closely related to their value-for-money evaluation of the company's products and services. This correlation has been found cross-industry and is even stronger inside the four industries studied. These findings support the earlier suggestion in this paper; that customers' perception of value will be negatively affected by a feeling of not having sufficient information or knowledge to evaluate the value of products and services, and strongly indicates that in order to increase the precision of the EPSI Framework the level of perceived transparency of products and services should be included.

Also differences have been found between industries as regards how transparency is related to value-for-money evaluation. For example, in supermarkets or in mobile telecom low transparency seems to be related with lower perceived value than in banking, where customers react less strongly (on perceived value) to low transparency. This suggests that customers have different levels of acceptance in different industries with regard to the transparency of products/services. It may be that customers see certain types of products and services as more technically complex by nature than others, leading to a wider acceptance of low transparency with regard to these product and service types,

while in other cases customers perceive low transparency of a company's products and services as unnecessary—perhaps as an intentional business 'trick' meant to complicate comparison to other company's products and services.

The strategic implications for market strategy will be that lowering the transparency of products and services will be less financially attractive in 'low-acceptance' industries than in industries where customers tend to better accept low transparency, and the EPSI rating framework will improve its accuracy by also including this industry specific factor. Moreover, earlier consumer research has shown that when customers experience problems in estimating the quality of a product they tend to use substitute extrinsic indicators like 'brand image' or 'price' to estimate quality (Monroe and Krishnan, 1985, Zeithaml, 1988). The weighting of such indicators has been shown to depend on which and how many indicators are present (Olson, 1977) and to vary between product categories (Gardner, 1970, Peterson and Wilson, 1985). If this is the case, the effects of the seven indices in the EPSI framework may change significantly when transparency of products or services change between higher and lower levels, and in order to improve the accuracy of effects when changing exogenous variables the level of transparency of the particular type of products/services should be included.

While an earlier study has shown how customer segments with diverse demographic characteristics react differently to framework effects (Kristensen and Eskildsen, 2006) it has been found in this study that the size of customer segments, defined by different preference structures, vary between industries. This finding suggests that customers in different industries will react differently to changes in the five indices driving customer satisfaction in the EPSI Framework. It also suggests one possible explanation for the finding of earlier studies; that the effects of these drivers vary between industries (Johnson et al., 2001; Eskildsen et al., 2004; McDougall and Levesque, 2000).

This paper therefore suggests that in order to improve the applicability of the EPSI Framework for single companies' strategic market planning, or for single industry purposes we will need to identify the structural effects of varying customer preferences in

industries. Future development of the framework for single company purposes may also need to include the fact that companies in an industry most often target customer groups with quite different preference-structures. One important first step, however, will be to identify structural differences in preferences between industries.

In general, if we can identify and measure key industry or market structural characteristics, which significantly and constantly change the effects of the seven indices in the EPSI Framework, we will be able to improve the accuracy of model estimations in single company or single industry cases and, in this way, make the framework more helpful as a supporting tool for strategic market initiatives. Knowledge of which exogenous variables most efficiently affect customers' value-for-money perception in their particular industry is highly valuable to company managers. Also, industry specific structural factors like perceived transparency of products and services and customer preference structures may turn out to be the explanation why changes in exogenous variables for individual companies have not been associated with an increase in perceived value or customer satisfaction.

Concluding remarks

The aim of this paper was to analyze the effect of market structure on customer satisfaction. The data for the analysis came from the Danish Customer Satisfaction Index 2004-2005. Here a total of 14540 customers have evaluated their preferred supplier within banking, property insurance, supermarkets as well as mobile telecom. The analysis revealed that market structure has a profound effect on customer satisfaction measurements and that this effect differs from industry to industry.

With respect to the effect of transparency it is evident that companies must consider very carefully whether the possible higher margins obtained from decreasing transparency can outweigh the loss in revenue due to decreased customer loyalty. Furthermore companies must plan their marketing initiatives very carefully because a "one size fits all" simply will not do in light of the different preference segments identified in this paper. The existence of different preference structures also has a tremendous effect on the outcome

of corporate improvement activities initiated on the basis of customer satisfaction studies. The company trying to increase customer satisfaction has to initiate improvements targeted at each individual segment – again “one size fits all” improvements will not do.

The overall lesson is that we must stop thinking about customers in terms of segments split merely according to demographics. It is what goes on in their heads as they evaluate the products and services offered that counts if one wants to obtain a competitive advantage.

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CHAPTER TEN

Differentiation and commoditization in the global marketplace: Significance for the enterprise and for the individual

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A fact without a theory is like a ship without a sail; is like a boat without a rudder; is like a kite without a tail. A fact without a theory is as sad as sad can be, but if there's one thing worse in this universe, it's a theory – I said a theory, I mean a theory – without a fact.

George P. Schultz
Tribute to Milton Friedman, November 7, 2002

Introduction¹

While the media din primarily concentrates on superficial aspects of economic and trade globalization and overseas outsourcing of products and services, contemplating the purpose and outcomes of these activities becomes more important than ever for the enterprise and the individual. The roots of explaining purpose and outcomes lie in fundamental economic explanations supplemented by the effects of technological advances, political considerations, and basic marketplace realities.

This paper explores commoditization and differentiation in the global marketplace and the implications for the enterprise and for the individual. This exploration includes extensions of Brian Arthur's "Halls of Production" and "Casino of Technology", Paul Romer's gap analysis in emerging economies, and Kevin Foley's stakeholder analysis.

¹ This paper has benefited greatly from the comments of David Hatch.

Technology advances have created an unprecedented ability to disaggregate, or unbundle, products, services, and solutions. At a fundamental level, these advances have significantly reduced transactions costs, thereby affording broader application of the Coase theory: In the absence of transactions costs, resources flow to their most highly valued use. Paraphrased in the context of production, in the absence of transactions costs, the inputs of production will flow to their least costly location.

Political considerations rest in a no-man's-land of protecting jobs versus free trade, economic development and low cost goods and services. The resolution for the individual state is not clear and the short-term implications for the political class are contradictory to the long-term implications for the state. For example, the current debate regarding illegal aliens in the United States is characterized by pressures to secure the rule of law versus the pressures to secure a labor force to serve agriculture and service industries such as hotels and restaurants. Politicians find themselves simultaneously responding to hyperbolic arguments addressing the short term problem, get the illegal aliens out of the country, and a longer term problem of an adequate labor supply for jobs that many argue citizens will not do.

Basic marketplace realities indicate that the science of market economics is at odds with cultures. This creates stress in the global economic arena with the outcome yet to be seen. Perhaps it is as Margulis (1998) states, "When science and culture conflict, culture always wins," or perhaps global marketplace realities will alter culture in the long run. There will be casualties.

Ultimately, decisions for the enterprise and for the individual distill to decisions surrounding a core of value-added thinking. For the enterprise, developing a clear understanding, and acting on that understanding, of what can and what cannot be disaggregated, along with what parts of the enterprise are commodities or commodity-like and what parts are differentiated, becomes a value-adding activity itself. This activity is also a matter of the enterprise surviving and thriving. For the individual, an orientation to value-adding activities, activities that maintain differentiation in the market

for intellectual capital and in one's skill set, becomes a matter not just of advancement but in the long-run one of job survival.

The standing understanding in the United States of America is that it is a country of laws and, in spite of its youth, a country of traditions. Perhaps reflecting the character of arguably its most important founder, Thomas Jefferson, the United States is also a country of contradictions (Ellis, 1998).² On one hand, policy makers fret about lost jobs displaced to developing countries; on the other hand they fret about immigration of low economic level people who do the jobs that most Americans will not do. On one hand, Americans wring their hands about manufacturing jobs transported overseas; on the other hand Americans continue to emphasize college education and deemphasize skilled trades, abandoning apprenticeship programs and demeaning those who possess trade skills but not a college education.

What underlies these contradictions? What is transpiring in the global economy that has so much in flux that policy makers seem stuck in an abyss of indecision as well as frequent and rapid pendulum swings? What is it in the new market economy that has changed? What are the implications and significances for the enterprise and for the individual?

This paper addresses these questions framing them in the context of neo-classical microeconomics, Meta-Management (Foley 2005), technological advances, New Growth Economics, aggregation and disaggregation of activities, economic globalization, and differentiation and commoditization, along with the resulting implications for the firm and for an individual. In the context of the MAAOE VI theme, New Perspectives on the Theories and Practices of Organizational Excellence, this paper provides theoretical, largely economic, analyses for organizational excellence in the global economy.

² Some would argue that John Adams was the most important founder.

Influences and context

One can view this section as a limited literature review but the heading is “Influences and Context” to reflect two matters: that reading the extant literature influences one’s perceptions and analyses; and that as one advances in age one’s experiences, and therefore context, come into play more strongly. The trick is not to allow oneself to become a victim of one’s experiences, rather to apply those experiences carefully. A central tenet of good science is objective observation without undue interference of subjective experience-based mental models that obscure the view of objectivity.

Correspondingly, the context in which one observes, forms hypotheses, tests and learns from the test results not only determines the hypotheses and test methodology, it frames the question and ultimately the answer. This section addresses the influences and context for this analysis of commoditization and differentiation and its implications/significances exists.

Observations of Thomas Friedman

In a popular work of high significance, *The World Is Flat: A Brief History of the Twenty-First Century*, Thomas Friedman (2005) chronicles and in part explains the impact of economic globalization. Initially astounded, he describes the natural outcomes of technological and political change that include:

- Numerous corporate call centers for Western corporations operating in India, Mexico, the Philippines, and elsewhere.
- McDonald’s drive-through order-takers sitting at computers in India affecting regional accents for the store location.
- Non-complex tax returns completed by Indian accountants.
- X-Ray and CT Scan results interpreted by Indian doctors while the patient and doctor sleep at home awaiting the results the next day.

Friedman cites ten “flatteners that have created the flattened world and continues by citing the “triple convergence” that is rapidly transpiring to produce a new economic landscape.

It is this triple convergence—of new players, on a new playing field, developing new processes and habits for horizontal collaboration – that I believe is the most important force shaping global economics and politics in the early twenty-first century. Giving so many people access to all these tools of collaboration, along with the ability through search engines and the Web to access billions of pages of raw information, ensures that the next generation of innovations will come from all over Planet Flat. The scale of the global community that is soon going to be able to participate in all sorts of discovery and innovation is something the world has simply never seen before. (pp. 181-182)

The new players come from economies that, prior to the 1990s, were much more closed than today. That China has been opening its markets is not lost on very many people. Much more, China has immensely increased its orientation to international education, eschewing concerns about eroding the power-politic of the Party. In contrast, India has always possessed an orientation to international education, albeit not broadly applied across the demographics of the country. For decades India has sent young people to international settings, the Western countries and Russia, for higher education. Very many of these individuals were educated in Russia and as a result India subscribed to the centrally planned economic approach. With the fall of the Soviet Union in the late 1980s the centrally planned economy fell out of favor in India replaced by a free markets mentality. An ironic feature of this is that Friedman and Friedman (1980) had contrasted India’s closed economy with Hong Kong’s free markets economy in the 1970s.

Technological innovation continues to spawn a new playing field that is characterized by distributed computing, the Internet, satellite communication, MEMS/nanosystems, etc. These have made possible multiple and immediate connections between people, between systems, and between people and systems, a wide-ranging nexus of interactions. In addition, the ascension of mathematical developments that include neural networks, learning algorithms, fuzzy logic, etc., have meant that systems can “learn” from the progressive inputs of human beings, and vice versa. The latter case is often missed by humanbeings.

The new processes are and create different ways of viewing the enterprise and the individuals who work within or ancillary to the enterprise. No longer do we think in terms of vertical integration or horizontal integration. Instead we think in terms of networks and nexi, random and organized, much as Chaos Theory, sometimes deterministic in terms of initial conditions and often complex and path dependent, a New Growth Economics perspective.

As is seen below, these changes can be analyzed within the context of established theoretical paradigms, including structure and systems, neo-classical microeconomics, evolution, and the Coase Theorem (Coase 1960 and 1988).

Engineering and Systems

The roots of Engineering exist in the physical sciences and are therefore governed by the laws of nature. However, Engineering is about serving humankind and therefore it exists at the interface of the physical sciences and the social sciences. There is structure to Engineering and because of its structure and the interface with human beings the outcomes of Engineering can have profound effects on human behavior.

For example, engineers who design roadways consider everything from anticipated speeds irrespective of posted limits, varying states of mind across the 24-hour clock and in the week, the impact of weather conditions on not only visibility and traction but also human beings' reactions to visibility constraints. On a broader scale, product design now goes directly to the end user using techniques such as Quality Function Deployment to embed ergonomic and state-of-being characteristics in the design. An example of this is the degree to which Boeing has incorporated passenger input in the design of the 787 commercial aircraft.

Likewise, Systems Thinking is about viewing the world as an interlinked number of processes in which human beings exist. Systems and processes also possess structure and influence human behavior. Deming extends Systems Thinking, his Appreciation for a

System, with three other elements, Knowledge of Variation, the Theory of Knowledge, and Psychology (Deming, 1994).

Systems Thinking is also the fifth discipline in Senge's *The Fifth Discipline* (Senge, 1990). In one of the more profound statements of the book, Senge states, "Structure causes behavior." Just as physical structure can cause behavior, social systems structure can cause behavior. For example, performance evaluation criteria cause behavior by those being evaluated. In an engineering consulting firm if the only criterion is billable hours, engineers in the firm will quickly learn protect their billable hours backlog and not share knowledge with their peers.

As a matter of context, Engineering and Systems and the interface of each and both with humankind provide theoretical underpinnings for understanding the global economic and political environment, particularly the impact of technological change, but not to exclude organizational change.

Neo-Classical Microeconomics and Meta-Management

The two major components of neo-classical microeconomics, consumer theory and production theory, converge to form the macroeconomic demand-supply analysis in the context of long-run competitive equilibrium (Hirschleifer, 1983), an analysis suitable for commodities. Commodities are goods characterized by high levels of commonality across suppliers. For example, the plywood industry is self-regulated to meet specific physical standards and the source of the plywood is of little consequence to the performance of the product. Plywood from any manufacturer is a substitute with plywood from any other manufacturer. No single demand agent or supply agent in the market for plywood can affect the market price, all are price-takers.

Long-run competitive equilibrium is a suitable theory for commodities but it is quite limited in the knowledge-based economy. As Arthur (1996) addresses, in commodity industries, Arthur's "Halls of Production", margin improvement is limited to reducing the costs of production. While long-run competitive equilibrium does not describe the

knowledge economy, the construct is extremely important in the global economy, particularly when juxtaposed with the Coase Theorem, described later in this section.

The importance of Meta-Management (Foley, 2005) to this discussion is the relevance of the stakeholder definition. Relative to the enterprise, Foley addresses the existence of many interested, affected parties, not all of whom have power. These include employees, customers, suppliers, governments, non-profits, neighbors, etc. Foley very carefully extends the interested, affected party to stakeholder status on the criterion that the interested, affected party also has power.

When one considers that a stakeholder must be an interested, affected party who has power, in the context of long-run competitive equilibrium, commodity markets, the customer is *not* a stakeholder. This arises from the theoretical and practical outcome of long-run competitive equilibrium that the consumer is a price-taker. In other words, the customer has no power in a pure commodities market characterized by many suppliers and many demanders. In this market the customer is certainly an interested, affected party but powerless and therefore not a stakeholder. In these markets power can be gained if customers join to form a demand side cartel, but the costs on joining often exceed the benefits.

Serial Endo-Symbiosis Theory, Cooperation versus Competition

Microbiologist Lynn Margulis (1998) developed Serial Endo-Symbiosis Theory (SET) in the 1960s. Initially dismissed by the Darwinists, SET argues that evolution is driven more by cooperation than by competition. Now laboratory proven, SET regularly appears in high school text books. The importance of SET to the evolving world economy is that living organisms evolve mostly through the process of cooperation. Does it follow that life's organizations can also evolve primarily due to cooperation? The result, as nature demonstrates, is an almost unlimited array of differentiation as witnessed by natural evolution. This baits the question of whether or not cooperation, not competition, that is the primary driver of market differentiation. Perhaps the answer lies in co-opetition (Brandenburger and Nalebuff, 1997).

The Supply Chain

The traditional perspective of the supply chain is a vertical chain existing somewhat linearly from raw material inputs to finished products. With the very significant technological changes the supply chain has become much more. The modern supply chain now involves three principal elements: products and/or services, information, and finance. Because of the presence of the triad, in the current era the supply chain is better named the supply nexus. This is so because of the three elements and because of the ease of entry and exit from the nexus. The importance of technological change relative to the supply chain is discussed below.

Technological Advances

In the work on *BEST* Business Excellence the acronym *BEST*, coined by Edgeman (2000), stands for the Bio/Physical (environmental), the Economic, the Social, and the Technological. This represents an extension of the triple bottom line approach to business excellence by including the importance of technology (see Elkington, 1994). Hensler and Edgeman (2001) further develop this as a joint optimization problem of Bio/Physical, Economic, and Social goals through technological innovation. That is, in the context of joint optimization of the three bottom-line goals, *BES*, technology determines the opportunity set, a nonlinear, convex surface of the attainable. Technology determines the shape and location of the opportunity set, which is matched with a global indifference surface to determine the optimal choice. The problem is very complex and there is a great deal of work left to do with this approach.

Technological change is immensely important by virtue of facilitating the reduction of transactions costs in the flow of inputs and outputs. In the supply chain this means that a technological change can very quickly and nearly permanently change where goods, particularly knowledge goods, are produced. Friedman's (2005) many examples of knowledge goods that flow over the Internet provide more than adequate evidence of this.

New Growth Economics (Endogenous Growth Theory)

Arthur (1996, 1997, 1999), examines complexity in the economy. He also examines the myths and realities of the high-tech economy (Arthur, 2000). Arthur's work at the Santa Fe institute continues to explore how the new economy differs from the long-run competitive equilibrium solutions of discussed above. In the introduction to *The Economy as an Evolving Complex System II* Arthur (1997) notes that in the new knowledge economy outcomes are path dependent and that economic outcomes are characterized by:

- *Dispersed Interaction:* What happens in the economy is determined by the interaction of many dispersed, possibly heterogeneous, agents acting in parallel? The action of any given agent depends upon the anticipated actions of a limited number of other agents and on the aggregate state these agents co-create.
- *No Global Controller:* No global entity controls interactions. Instead, controls are provided by mechanisms of competition and coordination between agents. Economic actions are mediated by legal institutions, assigned roles, and shifting associations. Nor is there a universal competitor—a single agent that can exploit all opportunities in the economy.
- *Cross-cutting Hierarchical Organization:* The economy has many levels of organization and interaction. Units at any given level—behaviors, actions, strategies, products—typically serve as ‘building blocks’ for constructing units at the next higher level. The overall organization is more than hierarchical, with many sorts of tangling interactions (associations, channels of communication) across levels.
- *Continual Adaptation:* Behaviors, actions, strategies, and products are revised continually as the individual agents accumulate experience—the system constantly adapts.
- *Perpetual Novelty:* Niches are continually created by new markets, new technologies, new behaviors, and new institutions. The very act

of filling a niche may provide new niches. The result is ongoing, perpetual novelty.

- *Out-of-Equilibrium Dynamics:* Because new niches, new potentials, new possibilities, are continually created, the economy operates far from any optimum or global equilibrium. Improvements are always possible and indeed occur regularly.

Romer (1986, 1990, 1993), contributes to the analysis of the new economy. Romer (2007) provides a summary of an overview of the elements of Romer's analysis. Some of Romer's principal contributions include:

- In endogenous growth economies knowledge as an economic good does not possess the attributes of outputs, or inputs, in the long-run competitive equilibrium economy. That is, knowledge is not a rival good and as such is not excludable. The consequence of this is that pockets of increasing marginal returns will exist - once knowledge is produced it can be used repeatedly at very low marginal cost. This is profoundly contradictory to the decreasing marginal returns of long-run competitive equilibrium.
- In the production optimization problem, the technology of production is not given to the problem. In long-run competitive equilibrium, the technology of production is given to the problem and shared by all firms. With endogenous technological change, knowledge driven endogenous technology of production is present allowing firms, and individuals, to differentiate and benefit from economic rents that are above those attained in long-run competitive equilibrium.

The Coase Theorem

One version of the Coase Theorem is "In the absence of transactions costs, goods flow to their most highly valued use." An adaptation of this is "In the absence of transactions costs, inputs emanate from their lowest cost source." The Coase Theorem points to two important elements relative to the enterprise and to the individual in the context of

technological change and commoditization/differentiation. If the good, be it a product, service, solution, or knowledge, is a commodity good then in an environment of low transactions costs, that good will be produced from its lowest cost provider. In application we observe this in Friedman's aforementioned examples.

Third Generation Quality and Business Excellence (MAAOE)

This paper provides some of the theoretical underpinnings, some old some recent, for understanding current world economic changes and how the enterprise and individuals might perceive the world around them. The next section examines what enterprises and individuals can interpret and do to respond.

Significance

The significance of the preceding analysis can be viewed from the enterprise perspective and from the individual perspective. Each perspective provides a signal leading to increased value of and to the enterprise or the individual.

The Enterprise

For the enterprise, disaggregating the business into its various parts allows executives to determine which parts are commodities, or commodity-like, and which are differentiated in the market. Those that are commodities can be analyzed against the transactions costs environment to determine if there is a lower cost point of production. The enterprise can then perform a due diligence cost reduction/benefits effects analysis and act on the results.

A relevant context to this enterprise analysis is the discipline triad of Treacy and Wiersema (1997). The triad consists of Customer Intimacy, Operational Excellence and Product Innovation. Treacy and Wiersema posit that to dominate a market the enterprise must be superior in at least one of the disciplines and at least equal in the other(s).

McDonald's consideration of the elements of its supply chain, external and internal, the order taking for drive through customers can be viewed as a commodity input.

McDonald's first tested this with a "call center" in Colorado Springs, Colorado. When a customer pulled up to the order giving point the customer was not speaking with anyone inside the store, rather speaking with someone sitting at a computer in Colorado Springs. The customer's photograph was taken and entered into the ordering database with the order. The order was then filled in the store and delivered to the customer at the drive-up window. The photograph that had been taken was used to verify the correct order to the correct customer.

The experiment was very successful in that orders were delivered to customers more quickly and the orders were consistently more accurate. One can reason that this is because in-store order takers are distracted with many other duties. By parsing the order-taking into a single activity by an individual, quality improvements were attained. This led to the broad transfer of drive-through order taking to India. Why? Because the cost of the commodity input, order taking, is much lower in India and the transactions costs difference is nil.

The Individual

For the individual, one can analyze the nature of what one does to determine if it is a commodity input to some value-creating activity. If what one does is a commodity, or commodity-like, then one must be aware that a reduction in transactions costs in the interface of what they do and the other parts of the system can quickly leave them jobless.

In the case of simple tax returns submitted to a tax preparing agency, the activity is very commodity like, that is, many people can be trained easily to prepare the returns. Until the advent of the Internet, simple returns could not be moved with low transportation (transactions) costs to a lower preparation cost location. With the Internet came a very significant reduction of transactions costs and simple tax returns were easily transported to a point of lower cost preparation.

Similarly, X-ray's and CT Scans that are taken in western countries are transmitted via the Internet to physicians and technicians in India. The Indian physicians read and interpret the information during daytime in India while patients and physicians sleep over night in western countries and the results are available the next day in the western country site.

Future possibilities include Indian and Chinese professors and instructors executing basic core courses in university education from their home countries to western countries. For example, a fundamental accounting course, already taught online in the United States may be taught overseas using distance and online techniques.

These instances help answer the question above regarding the relative importance of cooperation and competition in the development of differentiation. Just as physicians cooperate today, academic institutions will likely further cooperate in the future to affect efficient and effective instruction. This specific matter, whether or not cooperation facilitates continued internationalization of knowledge inputs, is fodder for further research exploration.

Summary

For the enterprise the significance is to analyze and disaggregate the internal and external supply chain, including products/services, information and finance, looking for inputs that are commodities. For those that are commodities, look next at the transactions costs of moving those inputs to lower cost providers, with the caveat of analyzing the effect on the benefits side for the enterprise's customer.

For the individual, never let oneself become a commodity input lest one's job will suddenly move across a long distance. This means that one must continually update skills and continually learn. The oft-used phrase "life-long learning" is no longer a catch phrase to motivate people to continue learning. The phrase is now one of survival of one's living standard.

This paper indicates that there is a great deal of additional work required. Issues that need addressing include:

1. Analysis to determine if either cooperation or competition, dominate as the driver of differentiation in the marketplace.
2. Determination of the importance of cooperation in facilitating continued internationalization of knowledge inputs as opposed to the principal driver being competition.
3. Development of the *BEST* Business Excellence model wherein Technology provides the opportunity set describing the attainable in the joint optimization of Bio/Physical goals, Economic goals, and Social goals.

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CHAPTER ELEVEN

Leadership for Business Excellence: The Gender Perspective

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Introduction

The adoption of appropriate forms of leadership in response to modern organizational needs has become a major strand of management theory and underpins the pursuit of Total Quality/Business Excellence. With some notable exceptions, most of the leadership literature ignores the gender dimension of leadership. This gender blindness and the association of management and leadership with men is being challenged through feminist/gender studies drawing upon ideas about power, communication, empathy and equality from the women's movement. Changing gender roles have been evolving in parallel with the quest for Total Quality/Business Excellence.

This paper reviews traditional and emerging theories of leadership and management and examines them in the context of changing organizational needs demanded by the adoption of quality and excellence approaches. It explores the broader range of required leadership skills, from a gender perspective, including those previously not considered of value: "people" and interpersonal skills, the ability to build bridges, to be vision/mission-driven and able to react quickly to a constantly changing environment, maintaining competitive strength by holding onto highly trained and valued employees.

Drawing upon an international study of 1686 political and business leaders across 27 industrialized countries, the paper presents the views of leaders on gender differences in

management style. To validate, and elaborate on, these results, a small national sub sample of Irish political (three male, four female) and business leaders (two male, four female) were interviewed about differences in leadership style between men and women. The unanimous responses from women and men suggest that a difference exists, though there was considerable variation in how that difference was perceived by respondents. The interviewees were also asked about their own personal styles which gave rise to some interesting and gendered observations. The paper concludes by drawing upon the empirical evidence presented against the backdrop of changing leadership requirements within organizations that follow a Total Quality/Excellence path.

The adoption of appropriate forms of leadership and a preoccupation with new responses to modern organizational needs has become a major strand of management and organizational texts (Bradford and Cohen 1998); Thorne (1992); Zand (1997); Champy (1995). Some theorists have revisited and refined the works of earlier management theorists (Grint 1997; Wright 1996) while others stress the transformational and learning context for new forms of leadership (Lessem 1991; Tichy and Devanna 1990). With some notable exceptions, most of the leadership literature ignores the gender dimension of leadership and implicitly management and leadership are seen as male roles. This gender blindness came under challenge in the 1980s and 1990s. The source of this challenge to orthodox and 'new' management theories has come through feminist/gender studies which draw upon ideas about power, communication, empathy and equality from the women's movement. Changing gender roles have been evolving in parallel with the quest for Total Quality/Business Excellence.

Traditional Models of Leadership/Management

Classic notions of what constitutes successful management, combining aspects of leadership and management, have been 'gender blind' and oblivious to the emerging qualities of leadership which women offer. This section provides a brief overview of key concepts and theories pertaining to managers and leaders.

Weber (1947) was the first theorist to relate leadership to power, noting that most modern institutions relied on legal power as their basis of authority, though prisons and asylums might continue to use coercive power. The pervasiveness of the 'power over' form of influencing dominates early theoretical work and contrasts strikingly with the approaches formulated in both feminist and Total Quality literature. The main strands of traditional leadership research can be summarized as follows under: Trait/Personality, Behavioral/Style, and Situational/Contingency theories.

Early research sought to identify the traits most commonly associated with leaders and which distinguished them from followers. Though a cluster of personality traits did emerge (including responsibility and being task driven; exhibiting energy and persistence in pursuit of goals; displaying originality in problem solving; self-confidence and ability to influence other person's behavior), the results of these studies proved inconclusive (Stogdill 1974). Furthermore the review of findings indicated that the traits required for leadership varied in differing situations.

With the work of the human behaviorists the emphasis shifted away from innate traits to explain good leadership to the importance of style and how leaders behaved towards subordinates. Researchers used different taxonomies of style, usually varying between two (autocratic/democratic) and four styles (Likert 1961) and are categorized as follows: task-oriented versus people-oriented; directive versus participative (Wright 1996). None of this research established a consistent casual link between style and effectiveness or outcome in terms of subordinate's performance.

Blake and Mouton (1964) advocated a more complex model in the form of a grid, which integrated the two independent dimensions of concern for task and concern for people. The grid continues to be used in management training and development. Blake and Mouton's work, like previous theories, perpetuated the notion that there was a one best style (Team Management or 9,9). Subsequent research showed that the quest for a 'best way' style was just as elusive as that of identifying the traits held by leaders.

Situational or Contingency theories sought to take account of other variables involved in leadership in particular the task and/or work group and the position of the leader in that work group, charted along a continuum of possible leadership behaviors, ranging from the manager making the decision to subordinates doing so within prescribed limits. Based on leadership situations in a wide range of organizations, Fiedler's (1964) Contingency Model suggested that the most effective leadership style is contingent upon the degree to which the situation enables the leaders to exert influence over group members. This depends upon the leader's position power; the structure of the task; and interpersonal relations between the leader and members. Fiedler stated that situations are favorable for the leader to exert influence over the group when the position power is high, the task is highly structured and leader-member relations are good and unfavorable when position power is low, the task unstructured and leader-member relations are poor.

Without exception, these traditional theories of leadership ignored the issue of gender and diversity and stressed the manipulative ability, innate or learned, of managers to influence the behavior of subordinates. As Klenke (1996: 85) states "*Early leadership models have evolved from unidimensional individual-centered approaches (e.g. traits) to multidimensional conceptualization, which takes the individual, the group, the situation, and the larger environment into account*".

Emergent Leadership Models

The gender blindness inherent in the earlier research on leadership and management continues in the contributions of 'emergent' theorists in the 1990s. For example, Hickman and Silva (1984: 25) argue that "*Individuals, not organizations, create excellence. With their unique skills they lead others along the pathway to excellence, carefully cultivating those who will later assume the controls. To groom future leaders successfully, the mentor makes sure he passes on both his gift for strategy and his flair for building corporate culture*" (author's emphasis). This quotation neatly summarizes the importance of the individual and the notion (not necessarily deliberate) that the individual manager/leader is a man.

Along with other writers, Handy (1996: 4) is critical of current models of organizations, noting that the way they are used 'has hardly changed for a century'. In seeking a 'distributed leadership' based on trust, Handy also mentions the attributes for such leadership: belief in oneself; passion for the job; a love of people and a capacity for aloneness.

Champy's (1995) work revisits Weber's notions of power in the context of re-engineering management to meet the business and market challenges. In arguing the case for market freedom, Champy claims that "*It's the freedom at the center of the paradox of power: that the best way to get it is to **let go***" (1995: 204) and that "*Free markets need free men and women to invent the future*" (1995: 205).

Other authors advocate 'Transformational Leadership' (Tichy and Devanna 1995) and have returned to earlier notions of 'trait' theory in identifying the characteristics associated with transformational leaders. In summary they are self-professed change agents; courageous individuals; believe in people; are value driven; life long learners; have the ability to deal with complexity, ambiguity and uncertainty and are visionaries. In Tichy and Devanna's (1995: 266) self-renewing organizations 'control is primarily self-control' and in a climate of risk taking and innovation, intuition and creativity are valued, and less emphasis is placed on analytical approaches. Atkinson (1997) distinguishes between 'Transactional' and 'Transformational' leaders. Transactional leaders influence the behavior of their followers by exchanging one thing for another, while transformers seek to satisfy higher needs and to engage the full person such that the leaders and the led have a relationship not only of power but of mutual needs, aspirations and values (Wright 1996). Hence transformational and transactional leadership are seen as complementary alternatives.

Another strand of the leadership literature stresses the context in which leaders must operate in 'learning organizations'. For Senge (1996: 42) the belief that only top management can cause significant change is 'deeply disempowering'. He proposes three generic leadership roles: designer, teacher and steward, all of which challenge the

hierarchical authority implicit in organizations. In an organizational context of 'perpetual learning' and in which change is the only constant, Schein (1996) describes how leaders of the future will need extraordinary levels of perception, levels of motivation, emotional strength, new skills in analyzing cultural assumptions, an ability to involve and elicit the participation of others and to share power and control, according to people's knowledge and skills. He (1996: 69) concludes that a leader "*will be a person with the characteristics mentioned above who can lead and follow, be central and marginal, be hierarchically above and below, be individualistic and a team player and, above all, be a perpetual learner*". Lessem (1992: 267) takes Total Quality and the learning organization as the basis for reconstituting the functions and skills of business and management, which he categorizes into "*conventionally recognized managerial skills and leadership skills which encompass the more instinctive, survival-orientated influencing, learning, facilitating and creative skills*".

A not dissimilar message is evident from the work of Kouzes and Posner (1995) in seeking what they call 'exemplary leadership' to enable leaders to get extraordinary things done by: challenging the process; inspiring a shared vision; enabling others to act; modeling the way and encouraging the heart. Gilley (1997) uses this idea of leading from the heart to promote creativity, continuous improvement, and learning together, courage and eliminating fear.

Zand's research (1997: 23) places a new form of leadership under three dimensions: processing information, building trust and using power sensitively: "*Effective leadership...depends as much on knowledge and trust as it does on formal power*". He strongly advocates teamwork, which can integrate this triad. Bradford and Cohen (1998) develop the teambuilding theme in their quest for 'Post-Heroic Leadership'. Along with teams, Bradford and Cohen there are two further elements: creating a tangible vision and enhancing power through mutual influence.

The new millennium brought another wave of leadership in the form of 'corporate social responsibility' which has been used for addressing issues of ecological damage,

environmental sustainability and social justice (Holliday et al., 2002). This was in response to complex pressures related to issues such as climate change and global poverty. Like its predecessors, the field of corporate social responsibility is male dominated and ignores gender as an interwoven theme (Marshall 2007).

Overall, unlike the work of the traditional leadership theorists, the emergent schools reviewed in this section consciously advocate the holding or acquisition of key characteristics among leaders and/or alternative ways of leading. Some themes commonly mentioned are: the importance of vision, sharing of power, self-control, creativity, the importance of people, knowledge, working in teams and trust.

Feminist Perspectives on Leadership

Few of the authors listed in the previous section allude to the gender composition of leadership, nor to possible differences in the ways that women and men might choose to lead. The contribution of Mary Parker Follett represents a challenge to these orthodox views and paved the way for feminist critiques of leadership and management in the 1990s. Despite writing some decades ago, Follett was an early proponent of the role of the manager: not as head of the team but as an integral part; recognition of the whole person - including the supposedly irrational half; the dangers of over-conformity and the importance of 'connecting' (Graham 1991). Graham (1991:108) claims that Follett was the first "*to import the study of power into management teaching*" and to champion the notion of 'power with' as opposed to 'power over' in situations where both managers and workers could pool their respective powers.

Kanter (1977) introduced gender into the world of business and management. Drawing upon the experiences of both women and men she proposed a new form of managerial work (1989: 85) in which she advocates interdependency, as managers "*watch traditional sources of power erode and the old motivational tools lose their magic*". She believes that project teamwork would provide more centers of power and routes to act, as team members have access to both senior management and external contacts both previously privileged arenas. In changing organizations, stronger lateral communication would

replace vertical; the motivational levers of leadership are altered- a manager can often no longer promise promotion (in a flat organization), claim superior knowledge (over a specialist), nor even a monopoly on information (in a team-based organization). Instead a leader can offer rewards in the form of excitement about work (through inspiration based on the vision), a share in the glory of success (due to direct contribution), and security in the form of "employability" rather than promotion. As they are responsible for people over whom they have no direct authority, the new loyalty is to the project not the boss (Kanter 1989). More recently Kanter (1996:90) states that leaders must become cosmopolitans to operate across boundaries and to forge links between organizations, in response to greater "customer power".

Rosener (1990: 119) described the first wave of female executives as adhering to male rules of conduct, giving way to a second wave of women who were "*drawing upon the skills and attitudes they developed from their shared experiences as women*". Her empirical study examines the question of leadership style and its variation by gender. Results of her survey of high-level executives in the US indicate that women use a more "transformational" style while men are more "transactional". She found that men were more likely to use power based on organizational position or formal authority, while women ascribed power to personal characteristics like charisma, interpersonal skills, hard work or personal contacts. Women engaged a participative style in sharing power and information, encouraging participation, and self-inclusion in a group identity. Indeed, their descriptions went beyond that of a participative style to what Rosener calls an "interactive" style, a concentration on enhancing the self-worth of others due to a belief that to do so is a "win-win" situation for both manager and others.

Feminist concepts of power include: "power-to" and "power-with" in contrast to "power-over"; sharing power rather than hoarding it; and a belief that individuals who share power in a group can yield a result more valuable than the sum of the parts. To bring these new bases of power into management may be to witness how they can augment a woman's leadership thus using, in a positive and conscious way, the synergy between

personal sources of power and a woman's own position power (Ragins and Sundstrom 1989).

Loden (1985) and Helgesen (1990) also emphasize a feminine leadership as an added dimension to leadership, in line with Rosener's (1990) concept. For Loden (1985) the feminine style of leadership was not a replacement for the traditional style, rather both styles could have their own strengths and leaders needed to call upon a range of styles. Quoting one woman executive: *"I prefer participation...but there are situations where time is short and I have to take the bull by the horns"* (Rosener, 1990: 122).

Lipman-Blumen (1996) addresses the issue of women managers but in the context of 'Connective Leadership', based on a nine-style model mainly applicable to political leadership. According to this model there are three main leadership styles: Direct (masters own tasks); Instrumental (maximizes interactions) and Relational (contributes to others' tasks). In considering whether female leadership was distinguishable from men's, Lipman-Blumen (1996) found that the results of existing research were inconclusive. However, within a complex overall pattern she observed that *"we can take some hope from the next generation of female leaders. Research on their achieving styles suggests that these young female leaders seem to know how to combine entrusting strategies with intrinsic and power styles"* (1996: 323).

Research by Vinnicombe (1987) shows that more men tended to be 'traditionalists' (57 per cent compared with 26 per cent of the women sampled) and that, in general, women managers are significantly more likely to be 'visionaries' and 'catalysts'. Not all studies and literature reviews have established such clearly definable gender differences in the traits, style and effectiveness of female and male leaders. Powell (1993) presents the findings of a range of studies: one found that women managers had higher needs for both achievement and power than men managers. In another, women managers reported lower basic needs and higher needs for self-actualization; were more concerned with opportunities for growth, autonomy and challenge and less concerned with work

environment and pay. Other studies showed no gender differences in the task and interpersonal styles of fe/male leaders.

In a survey of members of the British Institute of Management in 1991, male and female managers were asked to rate themselves according to a common scale (Alban-Metcalf and West 1991:158). The results show that, in general, women perceived themselves as being more likely to show their feelings, and were more sociable and more intellectual than men. The study noted that: *"there is a tendency to discount and repress the expression of feelings at work, based on the pervasive model that work is more about achieving organizational objectives at the expense of, or ignoring the developments of, individual's needs"*.

Comparing the work preferences of the female and male managers in the private sector, there are significant differences in some key areas. The following were rated more highly by women than by men: a challenging job; opportunities for development, feedback, to make a contribution to society, to be creative in doing things "my own way"; working with friendly people; where accomplishment is appreciated; a job which fits in well with life outside work; location; and working for an organization that is highly regarded. The four items that the men rated significantly more important than the women are fringe benefits; high earnings; job security; and the opportunity to influence organizational policies.

The authors confirmed findings in previous US studies into women's career commitments and/or 'motivation to manage' by demonstrating that the *"women in this sample were as concerned as the men with opportunity for advancement and were in fact more concerned with challenge, development, and feedback than the men"* (Alban-Metcalf, West 1991:160). Yet despite these positive findings, O'Leary and Ryan (1994:75) argue that *"critical mass alone is not sufficient for substantive transformations of the workplace. As long as sex continues to be characteristic of workplace interactions, women's relationships at work will continue to be characterized negatively"*.

Marshall's work (1995:314) shows that some of her women manager studies had described their styles as "*open, collaborative, person-oriented, empowering, based on consensus and equality*". She also demonstrated that some women had adopted 'males' style early in their careers "*being more directive and assertive*" (1995:315), though some had deliberately shifted to more 'female styles' partly due to dissatisfaction and partly where the organization facilitated more flexibility in style.

Klenke's (1996:161) review of the "gender-differences-versus-no differences argument" supports the view that organizational culture and selection criteria "*decrease the probability that women and men, once they occupy leadership roles, differ substantially in their leadership styles, performance, and effectiveness as leaders and their interactions with their followers*".

Recent work by Bass and Avolio (1997) supports Rosener's (1990) findings "*women managers, on average, tend to be more transformational and more proactive in addressing problems...Unfortunately, the glass ceiling may keep organizations from the best use of their management potential, and perhaps it is time the glass ceiling was shattered*". They endorse the views expressed by Peters and Waterman (1982) that women should not seek success via learning men's games; rather that men now have to learn to play women's games. As Wajcman (1996 276) notes, to achieve genuine equality in which women do not accommodate to pre-existing norms "*will require more fundamental changes in the gender relations of management*".

In Fletcher's (2004: 657) critique of postheroic leadership, she claims that in order to capture its transformational promise it would "*require theoretical framings that acknowledge, recognize, and name the radical nature of its challenge and the gender and power dynamics inherent in it*". Without this recognition she suggests that the postheroic model cannot achieve its transformational potential.

Gender and Leadership Style: Empirical Results

In common with previous research on leadership reviewed above, evidence was sought on similarity or difference in the working styles of 1686 female and male leaders, in business and politics, across 27 industrialized countries (Moore and Vianello 2000). The 902 top business leaders were asked the extent to which the label 'democratic' was characteristic of their own personal leadership style. The results, from the 467 women and 435 men surveyed, showed that the female business leaders were significantly more likely to state that a democratic style was characteristic of their personal style than the male business leaders¹. Similar results were not evident among the sample of male and female international political leaders.

To further examine these results and allow more elaboration from respondents, a small national sub-sample of Irish political (three male, four female) and business leaders (two male, four female) were interviewed and asked "Do you think there is a difference in leadership style between men and women?" The unanimous response from women and men was that a difference exists, though there was considerable variation in how that difference was perceived by respondents.

Differences Male and Female Leadership Style

A woman in political life (aged 49, married with three children) expressed uncertainty about a gender difference: *"I'm not sure it's gender based really, it depends on the milieu you've worked in to some degree"* but went on to state that where there are lots of women represented, for example, on committees:

"you get a different style of discussion, it's more open, it's actually very honest...I think it's much better and the men love it actually...it frees them up as well...having more women there can free up the women who have to adapt more to the more...what I call, the more hierarchical style".

¹ Using Pearson's chi squared test the difference between male/female results were statistically significant at the 1% level, P-value .0004

However, having acknowledged difference she made a point that recurred in other interviews concerning survival "*within the system you obviously have to have adaptive behaviors around it because you won't survive in it if you don't*". A second woman politician (aged 48, married with two children) also began uncertainly "*I think there is [a difference]...then again I think its...perhaps changing*". Speaking from her personal experience in a party headed by a woman, she states: "*I don't know if women are any better at motivating than men are but I think they are much better about bringing people along with them and listening to them and valuing them*".

Another woman politician (aged 59, married with three children) was more adamant:

"Well, there is, I think the confrontation business...I think men enjoy that a lot of the time...I really think they do...and then they find it very difficult to back down and women are much more interested in consensus, much more and find give and take much easier, I mean they sit and discuss things and they don't have to talk so long!". She ascribed this female ability to get to the point and make decisions to the fact that:

"We're looking at our watches and thinking of doing the shopping. I think that women find it much easier to make decisions. I don't think women find being decisive difficult at all, women are making decisions from the time they get up in the morning, there're making decisions all the time, they're probably the one's who decide when everybody gets up! So they're...just in their own households, they are so used to making the decisions".

The fourth woman (aged 52, married with four children) in political life also believed that with exceptions (she named one Irish woman politician) "*I think the styles do blur and are blurred but there is a male style, a masculine style, and a female style*". She described the male style as:

"A bit limited...good at making decisions, not good at explaining or involving people in the decisions, try to be inflexible...Females would be far more likely to develop consensus, women are better at changing, dealing with change". Tracing this trait back to social conditioning she went on to state:

"The favorite word of little girls is 'let's....You know the famous story...You put two boys into a room with one chair and the boys spend all their time fighting with each other to get the chair and you put two girls in and they share the chair and they say the word 'let's' ...'let's do this and let's do that' far more than boys. So there is this idea that leadership is a shared leadership...it's far more acceptable I think in the women's movement...it allowed for that to develop".

Male politicians also recognized the deficiencies associated with the 'male style'. The first interviewee (aged 50, married with three children) acknowledged a difference:

"I think there is, I don't know how to articulate it...I mean I think almost in all men there is a certain macho kind of defensiveness and aggression and so on. Whereas I think most women in politics are probably better rounded human beings and you know I think their intuition and sensibilities, I mean I think intuition and sensibility are important in politics and I think that arguably women are better at that but adversarial politics demands stamina and can be very confrontational and I think that the domineering male usually wins out in that battle".

Not surprisingly the behavioral response of women facing into such battles was mentioned by another male politician (aged 52, married with four children):

"I have to say that in my experience that women who have achieved political power in all parties in this House [of parliament] are much harder. I think that they have a hard edge to them in that they believe that they have to try harder and consequently they lose some of their humanity. That's where I think there is a difference between men and women. Maybe it's because you expect men to be hard all the time anyway and maybe because I am a man it's like the mote in my eye, I can't see the inequalities or the inefficiencies in men's leadership style but I have to say that in a lot of cases it goes back to what I said earlier, I think that it hardens women, it takes the soft edge off them which I think is sad because in personal dealings they seem to revert to type, but in a political context, and I don't have to name any of the people involved but, they have a very hard edge, they seem to have been sharpened by their own experiences of political activity".

The third male politician (aged 54, married with two children) also believed there was a gender difference:

"I think men probably believe more in rational argument.....without paying attention to sensibilities than women. I think women are more intuitive and better at weighing what particular bits of an argument will influence the people they're talking to. I think the ideal would be to combine the rationality of the male with the intuition of the female and most of life and its difficulties revolve around that conflict I think".

In the world of Irish business, gender differences were noted by men and women leaders. The most jaundiced male view (aged 61, married with four children) being expressed as: *"Well I don't like to use the word...some women can be very bitchy, some women can be very jealous, some women can be very autocratic...males are more tolerant I think, from what I have observed".*

Another male executive (aged 48, married with five children) acknowledged that it was hard to generalize. His own response was self-contradictory:

"I really don't think there's a huge difference...we had one manager here who left here who used her femininity to a large extent in getting on in her own career, subtly of course. I've known one or two women who have been quite successful to become autocratic actually but I don't think I have enough of a database in my mind to make judgments.....when I'm hiring people the optimum criteria/scenario for me is a female manager with a high degree of competence because they are just so less inhibited and so less burdenedI can see [based on his own staff] there is a clear thinking bit that women can think clearer than men given that there is some basic level of competency.....they don't have as much baggage - period.....So I think women definitely have...they just accumulate more experience from leaving school to when forty time frame than the average male. I mean assuming they got married and had children and things go on, and I do think women do carry the greater responsibility for the household.....they're managing huge amounts of life outside of here like having children, like they're gaining a huge amount of managerial experience outside the business

environment and of course that sets into play immediately when they're in a business environment".

One woman business leader (aged 47, married with three children) expressed less certainty about difference:

"It is very difficult because you're always confined to making comments about particular people that you know and it could be just their style but...do they manage differently? I think that there are good and bad management practices in both to be honest and I think that even on the people side I still feel women work harder at everything...that would be my general observation".

Another woman leader in business (aged 54, formerly married, no children) reiterated earlier comments by men and women in political life:

"I do think it is changing. I think probably my comment relates more to my experiences in the past than how things develop in the future but I think in general men tend to have a far more directive and, at times, autocratic style of leadership whereas I think women tend to be more...encompassing of all who work with and for them and prepared to listen and adapt and amend their thoughts and processes with far more ease than sometimes men can".

The third woman business leader (aged 57, married with five children) noted that *"men tend to have a less...emotional is the wrong word...they tend to take ownership of a problem and say this is a way I want it done, they find it harder to do the coaching/mentoring bit and I have often noticed that men want to take the kudos for a solution whereas the women in our organization would say 'well this is the problem let's all find a solution'"*.

Leaders' Personal Style

Asked about their own leadership style, women leaders in business strongly supported some form of democratic style. The first (47, married with three children) said:

"Well I don't dictate to people what to do, as a group we decide what needs to be done.....I err on the side of giving them all the information I have about everything, we share a lot of information in this organization".

A second woman in business (aged 54, formerly married, no children) stated:

"I suppose my personal style would be one of giving people as much freedom to operate as possible, I would give guidelines in terms of how we may wish to proceed or the strategy but I leave room for people to interpret that".

Another woman (aged 57, married with five children) described her own style:

"Well I would have a very coaching/mentoring team approach in business and that I never try to impose and I would sit down with people that work with me and say 'this is what we want to achieve, how are we going to achieve it?' and I get them to give their ideas because I find that when you develop that approach they feel part of the solution and it's much easier then and they would be much closer to the customer than you are so they actually know what's going on at the coal face".

The fourth woman in business (39, married with three children) displayed a more traditional 'carrot and stick' approach to getting things done:

"I don't use a particular philosophy or approach! Well the main thing I try to do is to get people to take responsibility for there own goals and let them see the consequences of doing the job well or not well so that if they do it well they get the praise and benefits and if they don't they see the repercussions".

The two male business leaders gave somewhat contrasting responses to the women in business life. The first (aged 48, married with five children) referred to his former autocratic and confrontational style:

"Well there's no question about it, I have changed hugely. I mean I was quite autocratic, somewhat dictatorial kind of thing...fundamentally the step change was from an autocratic to a much more supportive scenario but I think also the other big change was trying to get rid of some of the negative personal traits out of my interaction with

people...I still do lose my temper at meetings, it's just not as bad as before but I still get annoyed".

The second male business leader (aged 61, married with four children) circumvented the question with a response about personal selection which echoed the trait theory literature reinforced by 'think manager - think male': *"Well let me give you an answer on a CV for instance. You've got two CVs here in front of me and I look as the photograph. One is head and shoulders - you can get that from anyone but the other is a guy walking through Trinity College [Dublin] with that 'I'm going somewhere' showing what he thought of himself, done in a fashion looks different from everyone else. That to me shows an entrepreneur and I think a lot of entrepreneurs are born, they are born with a nose, with an image, with a way of getting up and they come from all classes of society".*

There were also strong contrasts between how female and male political leaders who described their personal styles. One women political leader (aged 52, married with four children) acknowledged that a dictatorial approach is unlikely to work:

"Very rarely do I instruct people to do something knowing they are totally opposed to it, I would try and tease out a particular problem before...I would rely, for example, on the experience of civil servants before making a decision. So maybe too much of the engagement rather than simply hierarchical approach but I suspect that if you don't have that [hierarchical] approach, things don't get done, they find ways to subvert you!".

This view was reiterated by a second woman politician (aged 59, married with four children):

"I would probably make a determined effort to avoid being confrontational because...it's not very successful and intelligence is supposed to be the ability to apply experience to new situations".

In contrast, a third woman politician (aged 49, married with three children) believed that she moved between consensus-seeking and persuasion:

"Well I think I'm very much a consensus politician - you know the sort of person who bores X [names a confrontational male politician]! I hope in dealing with people I would be reasonable and would try to communicate the way I feel about something, listen to what anyone else has to say and hope that I would be able to communicate my ideas well. I am quite direct, if I want something to be done, I would be very direct about saying 'well I think perhaps this is the way we should do it', I mean direct without trampling all over people".

The fourth woman in politics (aged 49, married with three children) referred to team building and the payoffs from this in terms of better decision-making:

"I have a particular leadership style which is a team approach and it's a sort of a systems approach and it comes out of my background in [names her former profession] and systems thinking and I'm very keen on getting just a good team working with the different talents and experiences.....in a good thinking environment.....that means listening to what everybody has to say and working out a plan jointly and then making a decision.....I would be fairly goal driven and I would know what the end product was that I wanted.....I would do a lot of communicating and talking and linking.....where I am working [i.e., her political party].....the leadership system I'm experiencing is completely hierarchical".

Male politicians spoke about their leadership styles in more combative terms. One such man (male, aged 52, married with four children) stated with great honesty:

".....so I learned very quickly that the best way to achieve your political objectives was to cultivate a personal relationship with those who are in power or who might be in power, consequently my whole philosophy in terms of getting people to do what I would like them to do is based on cultivating a personal relationship with them across a wide variety of areas, that would be acknowledging their strengths, a great deal of psychology and also by the way a lot of genuine feeling.....I'm not giving the impression that this is totally manipulative but the underlying philosophy would be that if you want to achieve something from a Minister well there's not much point in me going into the House [of parliament] on Monday and berating him for his policy".

A second man (aged 50, married with three children) in political life stressed his role as a decision maker with no reference to consensus, persuasion or agreement:

"Well I mean I think I have a capacity to make decisions and I think that's important, I think people around you, people who can make decisions, and I think government is about making decisions even if you occasionally make wrong ones. I think that nothing affects morale nationally or in your intermediate entourage as much as paralysis decision making. I think after that you either inspire allegiance and motivation amongst people around you or you don't. I don't know what characteristics go to make that up but I think it is important".

The third male politician described his personal style as persuasive and borderline coercive:

"I'm not conscious of having a particular philosophy or approach. What I like to believe is that I can bring people with me by convincing them or bring people with me by finding how much we agree on and persuading them that it's worth doing that.....I have a much more deliberate approach to people I know are not going to agree with me - heavy doses of sarcasm".

These in-depth interviews illustrate how gender is perceived as affecting the leadership styles of women and men in political and business life in Ireland. It shows that the female discourse consciously seeks consensus, involvement, sharing of information and a 'power with' approach. In contrast, the men in politics and business spoke in terms of 'power over' and leading via mechanisms such as establishing personal contacts, inspiring allegiance and bringing people along. Among the business men the self description was of having moved from being autocratic and, at times, dictatorial to a more considered approach (while still getting annoyed). Another interviewee believed in using a unilateral choice in a selection process to illustrate his personal style.

Leadership for Total Quality/Business Excellence

The context for examining leadership in this paper is in terms of self assessment models all of which place leadership as the driving force. In the Baldrige Award criteria, leadership is number one of eleven core values and concepts. It is the leadership role to drive the system to meet the organizational goals, which relate to the customer and business results. The leadership criteria accounts for a weighting of 9 per cent of the available score (Porter and Tanner 1996). In the EFQM Model, leadership operates through policy and strategy, people management, resource deployment and processes, to achieving Total Quality/Excellence in business results. In this self-assessment model, leadership refers to how the executive team and all other managers inspire and drive Total Quality as the organization's fundamental process for continuous improvement by their visible involvement in creating and maintaining a consistent Total Quality culture; through timely recognition and appreciation of the efforts and successes of individuals and teams; and support of Total Quality by provision of appropriate resources and assistance (Porter and Tanner 1996). The weighting assigned to leadership in the EFQM Model is 10 per cent of the total score.

A Total Quality approach represents a challenge to traditional forms of leadership. It involves the application of quality management principles to all aspects of business, including customers and suppliers. The British Standards (BS.4778) Part 2 definition states that Total Quality Management is *“a management philosophy embracing all activities through which the needs and expectations of the customer and the community, and the objectives of the organization are satisfied in the most efficient and cost effective way by maximizing the potential of all employees in a continuing drive for improvement”*. Without total commitment of the Chief Executive, immediate executives and other senior managers, nothing can be achieved. The onus on the leader/manager to increase effort from everyone in the organization requires a fine balance between *“getting things done”* and allowing staff to make decisions. James (1996:144) argues that *“management must cultivate a culture of leadership from top management through all levels in the organization, where team-based leadership measures are emphasized”*.

From a feminist perspective, Antal and Izraeli (1993:63) state that “*probably the single most important hurdle for women in management in all industrialized countries is the persistent stereotype that associates management with being male*”, the “*myth that management responsibilities are best fulfilled by men*”. Martin (1993: 291) sets out the case for corporate support for feminist management and states that “*a feminist vision of management fosters ways of seeing and doing that are fair, inclusive, and affirming of women*” but she states that the “*means by which feminist management can be instituted remain unspecified*”. Collinson and Hearn (1996:23) express the need for “*explicit, critical, feminist/pro-feminist and self-reflexive studies on the enduring dominance and interrelations of men, masculinities and managements. How is it that the 'great' and 'classic' theories of management have consistently managed to avoid these obvious questions?*”

The empirical findings reported on in this paper are supported by Eagly and Carli's (2003: 825) work which showed that, given the constraints of operating in male-dominated organizations, transformational leadership may be especially advantageous for women “*because it encompasses some behaviors that are consistent with the female gender roles's demand for supportive, considerate behaviors*”. This is reinforced in Eagly and Johannesen-Schmidt's Meta-analysis (2003: 587) of 45 studies showing that “*female leaders are somewhat more likely than their male counterparts to have a repertoire of the leadership behaviors that are particularly effective under contemporary conditions - specifically, transformational and contingent reward behaviors*” that would foster organizations' long-term success.

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CHAPTER TWELVE

The power implications of quality management: Some first thoughts

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Introduction

Today there would be few, if any, countries in the world where organizations have not made use of one or another form of quality management. The first formalization of quality management (it was then really quality control) occurred in Japan in 1951 and took the form of an excellence model – the Deming Prize. Ironically, and contrary to popular belief, it was not until a quarter of a century later that quality control became quality management and took the form of a management methodology – in fact it took several forms as its principal promoters (Crosby, Deming and Juran) each marketed a different version. A decade further on (1987), the International Organization for Standardization (ISO) produced the first international quality (assurance) standard and the US government created the Malcolm Baldrige National Quality Award. In 1991 the European Foundation for Quality Management created the EFQM Excellence Model. Although there are many differences between quality management (TQM as it is more

commonly described), ISO 9000 and the Excellence models, they share the same heritage and are based on the same set of principles. What they also have in common, although to varying degrees, is that their application demands behavioral change, which invariably requires changes in responsibility, authority, *and power*. Surprisingly, the power consequences of quality management, ISO 9000 and the excellence models have thus far received little attention. Indeed, shifts in authority and responsibility, which are a *sine qua non* of quality management, are invariably described in a way that suggests there are either no power implications, or the power gained by one element of an organization (workers on the assembly line) does not diminish the power of others. In this paper we look at the ways in which quality management, the excellence models and ISO 9000 influence power relationships in organizations and ask: Does this defining, and hitherto largely unexplored, feature of those management aids hold any particular clues to the difficulties many organizations have experienced with their implementation?

Any innovation can disrupt established circuits of power in organizations or consolidate those that exist. Quality management is no exception. Foucault (1977) teaches us that, rather than being a resource that can be held or exercised (a capacity inanimate but potential), power is inseparable from its effects. In this paper we intend to focus on the effects of quality management. The focus for analysis is quality management as a play of techniques, of mundane practices that shape everyday organizational life, structuring particular forms of conduct and more especially structuring the ways in which people choose to fashion their own sense of self, their dispositions and those devices with which, through which, by which, they are shaped and framed. As Foucault writes of power, it is:

[A] thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions—in short, the said as much as the unsaid. Such are the elements of the apparatus [*dispositif*]. The apparatus itself is the system of relations that can be established between these elements. Secondly, what I am trying to identify in this apparatus is precisely the nature of the connection that can exist between these heterogeneous elements. Thus, a particular discourse can figure at one time as the programme of an institution, and at another it can function as a means of justifying or masking a practice which itself remains silent, or as a secondary re-interpretation of this practice, opening out for it a new field of rationality. In short, between these elements, whether discursive or non-discursive, there is a sort of interplay of shifts of position and modifications of function which can also vary very widely. Thirdly, I understand by the term 'apparatus' a sort of –shall we say– formation which has as its major function at a given historical moment that of responding to an *urgent need*. The apparatus thus has a dominant strategic function (Foucault 1977: 194-195, italics in original. Also, see Deleuze 1989: 157-158).

Techniques of power work insofar as they induce appropriate forms of conduct in those others whom they target. Hence, power is only visible in its effects. However, these effects are not at all mechanistically related to some initiating prime mover. Instead, technologies of the self work initially by inducing people to regulate their own behavior and actions in accord with idealized representations that are institutionalized in specific contexts, such as the worker who strives for excellence; the manager who strives to be enterprising, or the service worker who aims to leave every client delighted. In the first unfolding the targeted subject is constituted as a particular agent in relation to others such as an actual or ideal enterprising worker, for instance; second, the subject is constituted in relation to those social bodies or populations defined in relation to authoritative categorization, such as the official employee of the month, for instance; in the third unfolding the subject constitutes knowledge of itself, in relation to itself and in relation to others; the employee as coach and mentor (Ibarra-Colado 2001: 20-27; 29). These are rarely pure forms but usually occur as a complex mixture of articulations that locally constitute power in specific organization settings.

Power produces truth

Power is not premised on a model of possession or access to resources with which to leverage others. Power produces its own truths, which is why, occasionally, epochal and seismic shifts occur, some more perceptible than others, in what is taken to be true. As power shifts, so do those truths held to be self-evident.¹ In short, one should take an immanent view of power, in which, as Allen (2003: 65) says, “Power does not show itself because it is implicated in all that we are and all that we inhabit”.

¹ Foucault (1980) distinguishes repressive and positive power: the distinction is much the same as that which we find in Follett and Parsons, or in the work of Mayo, where we can see the transformation of modes of surveillance. The Human Relations School designed a new strategy of government of the body/soul in the factory based on the construction of a sentiment of freedom [and responsibility] without, apparently, any kind of surveillance. As Mayo reported the observations at Hawthorne, the history sheets and records showed that in the opinion of the group all supervision had been removed, when, as Mayo insisted, they were getting closer supervision than ever before, but of a different type and quality (Mayo 1933: 75). Foucault’s notion that one of the characteristics of positive power is a link to the production of truth is something that we can certainly see at work in Mayo’s (1933) classic construction of the ‘truth’ of Hawthorne.

The usual counterpoint to an immanent perspective of power is one that is mechanical, where power is located in the visible effects of some external agency's explicable and observable intervention into an existing state of affairs: an A getting a B to do something that the B would not otherwise have done. The mechanical view, it is now generally conceded, is limited in what it can encompass. Opinion is divided as to the positive and negative effects of these limits, with the balance of contemporary opinion being that the limits restrict analytic capabilities unduly (Clegg, 1989; Lukes, 2005).

The immanent idea of power is not dependent on an analytical claim to omnipotence, to a pure form of knowledge that stands apart from and outside of power, and which legislates on what power is and is not. There is no privileged and transcendent position from which the truth of power is visible. Such positions can only ever be constituted within specific discursive practices. The contenders for such a transcendent position are legion; often they come addressed as 'isms': Marxisms, Feminisms, Whiggisms, etc

Within some less transcendent, but still institutionalized forms of discourse some specific representations often achieve local and situated dominance in specific practices. Some representations of the world, which of necessity have a historical specificity (ways of seeing the world are always diachronically shifting and contested language games) become fixed in usage, are normalized, become the common currency of thought and conceptualization. Specific discursive practices become institutionalized and thus have common currency, even as they are resisted. Discourses are always in dispute; there is no *meta*-discourse of/for everyday life. The tactical polyvalence of discourses indicates their unstable, contingent articulation between knowledge and power, marking possible displacements and re-utilizations (Ibarra-Colado, 2001: 20; Foucault, 1982: 98-102).

Some discourses become temporally and temporarily ontologized; that is taken for granted as a necessary aspect of (thinking about) being. For example, in the relatively recent past it was a fact widely assumed that women did not make good managers; if they were married, it was assumed that they would be having babies and that it was their business to have husbands whose job it was to support them; thus they were obliged by

law to exit from the workplace. Women's being was ontologized as secondary to men; as producers of babies, not managers of others. Hence, part of the task of analysis is to provide an understanding of how the ways of thinking and conceptualizing the world that have become normalized are possible. What are the grounds of (or what passes for) reason in any given discourse, or epoch? And what concordance and dissonance do these grounds prepare? These are some of the concerns raised by Foucault's work.

Different social facts are sustained by different practices. The facticity of the factory, the total institution, the panopticon and other organized suites of power are maintained by techniques of power that organize the spaces within which social relations are constituted. Allen (2003: 70) refers to these as the zoning, partitioning, enclosing, and serialization of activities, in which matters of spacing and timing are institutionalized, as we have seen graphically in the case of the total institutions.

The arrangements of space, the particular assemblages of space which make up institutional complexes, are understood as integral to the ways in which particular forms of conduct are secured. In this line of argument, different spatial arrangements reflect the possible ways of acting inscribed in different schemas and serve to regulate, as well as enable, movement through them

But it is not just a matter of spatial arrangements; as in Jeremy Bentham's Panopticon, these are designed to generate a certain sort of subjectivity. There are those who know indubitably that they are under power, who have power and surveillance exercised over them, and there are those who stand in hybrid relations to power; partly constituted by it and partly enacting its constitutions. Moreover, there are those who move effortlessly through the elite portals of power, switching effortlessly from boardroom to executive suite, from the Cabinet Office to the corporate headquarters, traversing spaces that are just as designed as the Panopticon but designed to produce *legitimate* asymmetries of authority; asymmetries that others will want to *desire*, by which they will seek to be *seduced* (Rosen, Orlikowski and Schmahmann, 1990). Still others may be *forced* to accept such relations through *coercion*, while others may be *deceived* as to the intent that resides in these relations and are thus *manipulated*. Different actors may generate power effects through these different modalities. It is in these ways that the mechanisms of power are expressed in getting B's to do things that they would not otherwise do: through shaping desire, exerting force, practicing deceit, and exercising manipulation

Quality management

One modality that has been enormously influential in terms of practice in recent years has been the discourse of quality management. As an organization practice the discourse of quality has become ubiquitous; and while, as an object of organization theory it has been discussed in its own right, rarely has it been analyzed as an organization practice with powerful effects (although see Kerfoot and Knights, 1995).²

Quality, as we understand it today, emerged from inauspicious origins in nineteenth century engineering approaches to management and appears to have gone through two quite distinct phases and is now entering a third.³ From the nineteenth century onwards, the engineering profession in the US spearheaded a project of professional development in which standards were foremost. From the last part of the century onwards the program crossed over to the design of work itself, notably through the contributions of Frederick Winslow Taylor (Shenhav, 1999). Total quality management (TQM) first came to prominence in the 1980s as a statement of management principles and in the main was developed by American management entrepreneurs Crosby, Deming and Juran; all of whom worked outside the social sciences, business schools, and a traditional research environment.

While the antecedents of quality management can be found in Taylor, its foundations clearly rest on *three* sets of documents written and promoted in the late 1980s and early 1990s – each constructed at about the same time on different continents, by three

² See Ackoff, 1993; Anderson et al., 1994; Beer, 2003; Benson et al., 1991; Boje, et al., 1993; Cole, 1999; Dean and Bowen, 1994; Flynn et al., 1995; Garvin, 1984; 1987; 1991; Giroux and Landry, 1998; Grant et al., 1994; Grint, 1997; Hackman and Wageman, 1995; Hauser and Clausing, 1988; Hermel, 1998; Klimoski, 1994; Krishnan, et al., 1993; Lemak, et al., 2002; Lengnick-Hall, 2002; Longenecker and Scazzero, 1993; Macdonald, 1993; McCabe, et al., 1998; Morrow, 1997; Reed, et al., 1996; Reeves and Bednar, 1994; Reger, et al., 1994; Rura-Polley and Clegg, 1999; Sitkin, et al., 1994; Spencer, 1994; Steingard and Fitzgibbons, 1993; Waddock and Graves, 1997; Wilkinson and Willmott, 1995; Wilson and Durant, 1994.

³ For a discussion of the various phases of quality management see Bergquist, Garvare and Klefsjö, 2007. For a more detailed discussion of what is now widely referred to as Third Generation Quality Management see Bergquist, et al., Chapter Twenty this book.

different groups, using different approaches (and language) to describe and promote the same management methodology. As Foley, Hensler and Jonker, (2007) observed:

In addition to being written by three different groups each quality management standard [or set of standards] was directed to a different audience. The management book-writing entrepreneurs directed their works to the middle and upper levels of US business. The Quality/Excellence standards were written specifically for top management, while ISO 9000 was directed at mid-level management ISO 9000 was directed at mid-level management ISO 9000 was directed at mid-level management.⁴ One consequence of the widespread adoption of ISO 9000, and its focus on quality managers (indeed, the creation of the standard fuelled the growth in titles of managers occupying that position), was that quality management became institutionalized as a function of mid-level management.⁵ In addition to directing their “standards” to different audiences, each group of promoters described quality management differently. For the entrepreneurs it was first quality control then quality management and finally TQM, while the quality language of ISO and the Quality/Excellence organizations was that of quality assurance and business excellence respectively.

What is most arresting about the relationship between quality management and power is that not only are its power implications different in each of the quality control and TQM phases it has passed through on the way to what is being referred to as third generation quality management (TGQM), but also there is the related issue (hitherto dealt with only obliquely, if at all) of the power exerted by the quality management gurus, Crosby, Deming and Juran on quality management *per se*.

Although it is moot as to how many phases quality management has passed through it seems clear that its power implications have changed in a consequential way on several occasions. The power implications of quality management, when it is essentially quality control and focused on the manufacturing shop floor, are likely to be very different from those that result when the form shifts to TQM and quality assurance (in the form of ISO 9000) where the focus is on the customer, the quality sub-system *and* whole of organization management. Those implications are likely to be very different again (and perhaps profoundly so) as the focus of TGQM shifts to stakeholders, and a distinction is drawn between the methodologies and tools of quality management and quality as a whole-of-organization strategy.

⁴ Many of the early quality management works and presentations dealt with the production processes of manufacturing organizations. For example, ISO 9000 was first developed for manufacturing enterprise and was not published as a *generic* standard until 1994; even that change was minor and largely cosmetic. It was not until the 2000 revision that ISO 9000 could be said to be generic.

⁵ Though it is difficult accurately to measure the impact of ISO 9000 it appears to have been used for certification, self assessment or as a guide by as many as five million organizations of all sizes and forms in all parts of the world (Foley, Hensler and Jonker, 2007 and Foley, Karapetrovic and Wraight, Chapter Fifteen this book).

Power and quality management

One crucial difference between quality management and its precursor scientific management was that while the subjects of the latter were intended to be fully formed through management design, the subjects of the former were to be, essentially, incomplete; indeed, their incompleteness as self-regarding subjects was to fuel an underlying neurosis for continual improvement that drove the most influential versions of quality management. Essentially, the subject of quality management was constructed as a person for whom the possibility of doing simple things better was deeply rooted in a neurotic condition the only cure for which was an impulse to continuously improve. Additionally, whereas in scientific management it was the responsibility of management to plan and study and of workers to do and act, in quality management each individual was to be empowered to plan, do, study, and act (Shewhart, 1939) or, as Deming (1993) had it, plan, do, check, and act. Quality management replaced the docile and dependent subject of scientific management, with an active responsible, entrepreneurial and liberal subject, albeit one with a neurosis that was healthy for the organization

In an era of neo-liberal micro-economic reform the role of quality management expertise was to become vital to enterprises: using its powers the rigidities of the past could be overcome and new enterprising subjects created that could steer themselves rather than be steered. The key mechanism in this vitality was to be the use of ISO 9000 and the quality audit. Audit utilizes 'a rather mundane set of routines that purport to enable judgments to be made' as Rose (1999:154) suggests. Power (1997) points out that from being a relatively marginal instrument of control audit has become a central mechanism in what, after Foucault (1979), he refers to as new regimes of governmentality. Audit, Power (1997) suggests, is the control of control, a capacity to act at a distance upon systems of control. In enterprises, this meant that the introduction of quality audits could spread capillaries of power at the micro-level without the necessity of any centralized control at all: this is the institutional beauty of standards. For instance, not only can the quality manager stop the production line but the production workers can do so also if they diagnose a quality issue.

To some extent, as has been acknowledged, the capacity to be able to stop the line represents a degree of empowerment (Kerfoot and Knights, 1995). However, it is a one-dimensional empowerment: one is only empowered to act in relation to quality issues insofar as they affect the quality of the product. If there are issues with occupational health and safety, ecological or other forms of pollution, these are not defined as falling within the ambit of quality. It is very much a concern with quality that is focused only on the use-value of the thing itself, not the quality of the impact it has on those who make it, or the sustainability of the ecology within which it is made, for instance. As Rose (1999: 154) suggests, '[r]endering something auditable shapes the process that is to be audited: setting objectives, proliferating standardized forms, generating new systems of record-keeping and accounting, governing paper trails'. Accountability is created to a set of norms of transparency and observability that make accountability and inspection in its name a new norm. That those who are subject to the new norms are increasingly shaped as autonomous agents, free to choose how they do what they do in the name of improvement, and responsible for being to be improving, means simply that the power that quality management dispenses is a very specific form of positivity. A restless, almost neurotic and one-dimensional subjectivity is the aim: one constantly seeking to transform its ways of being and expressing itself in work but only in so far as this is oriented to the one dimension of quality as it is embedded in things of potential use-value as marketable goods or services.

Quality, in the modern sense, emerges as quality control in the 1930s. Statistics, which significantly pre-dates quality control (which was essentially the application of statistics to manufacturing processes), has sought to make moral life knowable and calculable by delineating regularities and deviations in conduct that would enable this conduct to be understood as if it were a phenomenon in the natural world. In the United States statistics were used, as Rose (1999: 203-204) suggests, and as Paul Starr and William Alonso's (1987: 40) standard account of their growth and use demonstrates, to achieve 'the reduction of complexity'. The application of statistics in continuous improvement rendered this slightly differently – for complexity we should substitute variation:

simplicity was to be arrived at by reducing the variability of manufacturing processes. The know-how that would produce this statistic was, and here was the real innovation, to be found in the ordinary worker. It was their creativity that would unlock the secrets of consistency and continuous improvement. Statistics have a number of remarkable properties that make their use as a management tool simple: enumeration creates a ‘bond of uniformity’ around that which is calculated; numbers enable the unlike to be agglomerated into relation with each other; the combined effects of several components can be represented thus stabilizing process, representationally, and finally, statistics render everyday events into probabilities (Cline Cohen, 1982: 43-44).

When combined with standardization the link with statistics is very productive and extremely powerful. Standards, combined with statistics, ensure translation and comparability. Quantification standardizes both its object and its subject. Not only does the object – variation – that is being measured get objectified; so do the subjectivities of those who are producing the variation. As Taylor (1911) realized, as long as the operative could fall back on craft knowledge that the overseers lacked, they could more easily confuse their superordinates. Quantification produces a certain kind of objectivity, superimposing a network of the apparently precise, specific and quantitative on the contentious and uncertain (Rose, 199: 207).

There are additional features of statistics that enabled it to play the leading role in creating quality management. Statistics, as Foucault [1979] has argued, is one of the key modalities of government – whether of organizations or nations. The more that enterprises were stripped back and made lean the more imperative it became that cost and other forms of numeric control should be lodged as close to the bottom of the remaining hierarchies as possible: this both made more legitimate the resulting structures of authority, which ‘empowered’ employees who previously had only done as instructed, while making those empowered more responsible. In Rose’s (1999: 211) terms we might also say that the extension of statistical process control through quality management enabled events to be inscribed in standardized forms for this knowledge to be rapidly centralized and made the subject of central calculations. Management became essentially

management of the numbers as representations of actions enacted elsewhere. Moreover, quality management and its statistical techniques constituted new realities.

Quality management not only produced improved quality in products, processes and services; it may be said to have talked ‘quality’ into being by developing ways of representing it as ‘calculable spaces’ – ‘abstract spaces ... to be known and regulated in terms of their performance and to be brought into relation with other abstract spaces’ (Rose, 1999: 213). Thus, it makes employees calculable persons – both to themselves and others – turning ‘the individual into a calculating self endowed with a range of ways of thinking about, calculating about, predicting and judging ...’ (Rose, 1999: 214). What was intended was spelt out clearly in *Made in America*:

[w]orkers, managers, and engineers will be continually and broadly trained, masters of their technology, in control of their work environment, and involved in shaping their firm’s objectives. No longer will an employee be treated like a cog in a big impersonal machine. From the company’s point of view, the work force will be transformed from a cost factor to be minimized into a precious asset to be conserved and cultivated [Dertouzos, Lester, and Solow, 1989: 135].

Analysis and extension

Quality management, in each of its forms, is an object lesson in the techniques of power working to induce appropriate forms of conduct in those others whom they target. These effects were, in the main, achieved discursively and in two distinct ways: By not only producing new truths of everyday life but also through the production of restrictive forms of discourse. Let us deal with the first one first, with how the governance of everyday life and mentalities can shape the willing subject.

Foucault used the notion ‘government’ in a very broad sense. For him, government was not a noun nor even a verb restricted in its meaning to what it was that governments did when they governed. Government, for Foucault, incorporated the arts of governing, and governing was not merely the specialist business of the government. Schools govern conduct; Police govern order; and Churches govern the soul. In so doing, each government works on ‘mentality’, seeking to produce disciplined and self-regarding subjects who are exemplary students, model citizens, and religiously obedient, subjects whose mentalities are governed. Foucault had a neologism for such a subject – one who was the target of *governmentality*, the fusion of new *technologies* of government with a

new political *rationality*, aimed at subject mentalities. ‘Governmentality’ refers to the institutions of governance and their effects.

Foucault introduced the term governmentality in a series of lectures he gave at the College de France on the ‘Birth of Biopolitics’ in 1979 (Marks, 2000:128). These lectures engaged with the changing face of liberalism as a political project in the Reagan and Thatcher administrations. For Foucault governmentality meant both strategies of organizational governance, in a broad sense, as well as self-governance by those who are made subjects of organizational governance. The concept of governmentality sought to capture new liberal approaches to political management. The focus was on ‘the totality of practices, by which one can constitute, define, organize, instrumentalize the strategies which individuals in their liberty can have in regard to each other’ (Foucault 1988: 20). As du Gay (2000:168) suggests, governmentality ‘create[s] a distance between the decisions of formal political institutions and other social actors, conceive[s] of these actors as subjects of responsibility, autonomy and choice, and seek[s] to act upon them through shaping and utilizing their freedom.’ What is novel about liberal forms of governance is that the personal projects and ambitions of individual actors become enmeshed with, and form alliances with, those of organization authorities and dominant organizations.

A number of writers have written about the later aspects of Foucault (see especially Szokolczai, 1998: 58; Clegg, 2000; Clegg, Pitsis, Marosszeky and Rura-Polley, 2002; Ibarra-Colado, 2001:34-37; Hunter, 1993; Miller, 1992; Burchell, Gordon, and Miller, 1991). Jackson and Carter (1998), du Gay (2000), and van Krieken (1996), explicitly address organizational issues. Foucault’s governmental concept is surprisingly not used as frequently as one might have anticipated from someone written into the adolescence of institutional theory (Scott, 1987). From an organizations perspective, the practice of governmentality *aspires* to create a common sensemaking frame (Peters and Waterman, 1982; Weick, 1995; Colville, Waterman, and Weick, 1999) or, as a political theorist posits, a common ‘practical consciousness’ (Haugaard, 2000). In Jackson and Carter’s (1998) terms, governmentality means that ‘people should voluntarily and willingly,

delegate their moral autonomy and moral responsibility to obedience to the rules, to being governed in their conduct by a ‘moral’ force ... which is external to the ‘self’.” As they go on to note, the requirement for obedience ‘usually is rationalized and justified in terms of a greater collective interest’ (Jackson and Carter, 1998: 51). Or, as Townley (1998: 193) suggests, ‘before a domain can be governed or managed it must first be rendered knowable in a particular way.’

While Foucault’s later work on governmentality brings power outside of confinement and into more nuanced arena’s, as Hannah (1997:344) notes, Foucault ‘never precisely spelled out the ways in which the panoptic logic of visibility had to change to operate effectively in an environment where its subjects did not suffer continuous confinement’. What he did spell out was a concern with government as a specific combination of techniques and rationalities, typical of the modern, neo-liberal period. Organizations, rather than regulating conduct now enable individuals to act freely through markets to get things done, in normatively institutionalized ways governed increasingly by standards, charters, and other codes, and for public administrators to recreate themselves as entrepreneurial actors, chasing after and trailing ‘excellence’ in the private sector (Peters and Waterman 1982).

When we talk about ‘mentality’ we can distinguish different sets of knowledge that are dominant in different moments. For example, Keynesian economics was an expression of the dominant mentality from the 1930s to 1960s, while neo liberalism begins to dominate from the 1970s onward (see Foucault, 2003). As the designs of government change, so do the mentalities of those who administer and are subject to them. If the Weberian bureaucrat valued ethos, character and vocation, the contemporary neo liberal bureaucrat is expected to be enterprising. Quality management in its various stages has, since the 1980s, been addressed to creating more enterprising employees. It does so by situating the subject in a specific relation to the routines that constitute their work. Rather than being oriented to simply ensuring that these subjects achieve mastery of existing routines it seeks to implant a potential neurosis in them. Anything that is routinized is such that it

can stand as a desired stimulus to the effect of improvement; thus is the neurosis planted in employees to improve these routines continuously.

As Allen (2003: 80-81) suggests: 'A degree of freedom is implicit in the art of governing, in the liberal sense that the promotion of freedom, rather than its denial, is the most efficient way of achieving governmental ambitions.' The neuroses associated with quality management produce these degrees of freedom most precisely. Thus, governmental power operates largely through facilitative rather than prohibitory mechanisms, using forms of institutionalized regulation to achieve their effects, through 'the continuous and relatively stable presence of a series of ideals, expectations, received 'truths', standards and frameworks which provoke individuals to govern their lives in quite particular ways' (Allen, 2003: 82).

Even in its earliest form the major trope of quality management has been the customer. The customer has been elevated to a panoptical and mythical status in its discourse. The customer is to be delighted, and customer expectations are to be exceeded. The customer is to enjoy seamless quality; the customer shall know no defects, and so on. The customer of quality management's discourse is an abstract authority sitting in judgment on the performativity of the organization, its employees, and their capacity to anticipate what will please their judge. Like Weber's (1976) bearers of the protestant ethic organizations live in dread of their fate – will they be elect; have they achieved quality? Desperately searching for signs of their election to the ranks of those blessed with quality by checking the results of statistical sampling and process control (much as protestant believers calculated and balanced their every move and action for signs of God's grace moving through them as an earthly vessel), devotees of quality management seek excellence in customer satisfaction/delight and an absence of defects.

A key tool in the pursuit of excellence is the production of 'a code of generalized symbols' to which Luhmann (1995: 111) attended. Indeed, it is largely through these generalized media of communication that power achieves its reach, such as the increasing governance of organizations, everywhere, by codified standards [Brunsson, et al., 2000].

The case of standards makes it clear that the modalities of power that can operate are many and varied and should not be reduced to any essential category, such as domination (see Rose, 1991). Standards can dominate us; but they can also produce many other experiences, some delightful, some expensive, some safe, and so on. Nonetheless, power effects are embedded in the text of the standard. There is a difference between the form of the files or the information system and the content of that which they convey. It is both the reach of the form and the regulatory potential of the content that matter.

The sounds of silence

The power of quality management works not just through governmental mechanisms. There are also certain silences at work. Sometimes that which is left unsaid is more important than that which is carefully articulated. The silences of power speak from the words it doesn't pronounce as much as those it does. Texts speak to us by the words they tell but also by the words they do not use. In *A Theory of Literary Production* Pierre Macherey (1978) argued for the significance of what is not said and of what is placed in the margins, noting that what needs to be explained is not the apparent unity of meaning but the presence of an opposition, between elements, disparities which point to a conflict of meaning.⁶ This conflict is not the sign of an imperfection; it reveals the inscription of an *otherness* in the work through which it maintains a relationship with that which it is not, that which happens at its margins. Thus, it is the silences and gaps in a discourse that are significant to an understanding of its ideological milieu. These indicate the unconscious of the discourse, insofar as it possesses one, an unconscious in which the play of history beyond its edges may be seen.

In an influential critique published in 1970, two American political scientists, Morton Bachrach and Peter Baratz (1970), argued that power has two faces. One face concerns the outcomes of decisive battles between different actors over specific issues. The other face is much more subtle and concerns the 'mobilization of bias' (Schattschneider, 1960: 71) that can result in 'non-decision-making'. Some things never make the political

⁶ A similar point is also made by Ernesto Laclau (1981) in 'Politics as the construction of the unthinkable', a paper which is, unfortunately, unpublished in English but which has been translated from the French by David Silverman, and discussed in his book *Interpreting qualitative data* (Silverman 1993: 78).

agenda; they are, either implicitly or explicitly ruled out of bounds, hence they are not raised. To adapt Haugaard's (2003: 94) terms, the existing elites do not collaborate in the reproduction of these new issues as phenomena to be taken seriously rather than ignored, disdained or dismissed. Only those issues that conform to the dominant myths, rituals and institutions of politics (quality) will be admitted. Hence, important issues that challenge these dominant ideas will not be heard. Their exclusion from consideration signals a neglected face of power. If analysis is restricted merely to those issues which elites (the quality management gurus) sanction we miss the power shaping and restricting agendas, we miss the way in which, anticipating the likely reaction to what are perceived to be contentious issues, these issues are never raised (Friedrich, 1937).

It can be argued that quality management has functioned with two faces of power. On the one hand it has introduced new issues and interests on to the organization management agenda, especially the use of statistics and focus on the customer and latterly the stakeholder. On the other hand, it initially restricted discussions of quality to the material sphere of value embedded in manufactured *products*. It was not a radical discourse that addressed issues of the value and quality of jobs, working life, or impact on the local and physical environment – though TGQM does address those issues.

Power of another kind: The gurus and their sounds of silence

Because quality management was developed and promoted by a small group of American management entrepreneurs who acquired the status of management gurus, it was possible to restrict discussion (for as long as a decade) to only those issues acceptable to those so-called gurus. Cole, (1998:58) has identified the 80s as "... an era of competing gurus (Juran, versus Crosby, versus Deming, versus Feigenbaum, versus Ishikawa)" and Collins (2000:22) describes TQM and other "guru works" as *acontextual*. Clarke and Clegg, (1998:258) speak of "sects" while Tuckman (1994:733) refers to "the TQM priesthood." The comments of Macdonald (1998:325) on this issue are of particular significance because he was a contemporary and colleague of Crosby, Deming and Juran, and was at one time employed by Crosby. He remarks:

Gurus are soon surrounded by cohorts who turn each of their half-considered thoughts into ex-cathedra statements that must be deemed infallible. I was one such early acolyte, and I well remember issues

resolved by “quoting from page 187,” etc., similarly to the way religious issues are always answered by biblical quotations. At the same time, the guru of choice must be extolled in competition with the others. This is how the myths are propagated: the myth that it was Crosby who invented zero defects, and the myth that Deming changed Japan. One can never be sure, but one reasonably expects that the gurus themselves also came to believe the myths Macdonald [1993: 5] sees these three as encouraging ‘a religious fervor in which many of the brethren become religious zealots blind to any doubt ... Crosby, Deming and Juran [previously respected as thought provoking authors or academics] became gurus. And then the myths began’.

The quality management gurus (particularly Deming) were able to use their gurdum to present quality management in a way that restricted discussion on aspects such as empirical support, theory and history and write about in a way that distorted events and embellished their own position. As Bergquist, Foley, Garvare and Johansson (Chapter Twenty this book) point out the power of the gurus to obfuscate, avoid questioning and criticism was diminished only by advancing age and death - Crosby died at the age of 85 in 1989, Deming at 93 in 1993 and Juran at 103 in February 2008.

The works of the quality gurus are characterized by unsupported assertion, silence on issues such as implementation, a distortion of the facts (especially in relation to the contributions of others) and a failure to acknowledge the body of management thought, management principles, strategies and techniques upon which quality management is so clearly built and depends. While Fukuda (1983:163) contributes to the myth that Deming and Juran were almost single-handedly responsible for the Japanese economic miracle he goes on to make a most interesting and hitherto unreported (to the authors’ knowledge) observation on the way in which Deming and Juran were first interpreted:

In the 1950s, when Drs. Deming and Juran first brought QC to Japan, we were shocked by the differences between Japan and the United States. Since then, we have been working quite hard to catch up, and now, thanks to our efforts, and blessed with favorable conditions, our quality levels have greatly improved. Strangely enough, our efforts were stimulated by a misunderstanding. We thought that the concepts being taught to us by Drs. Deming and Juran were actually practiced by American firms. Without realizing the differences between research and practice, and between top-level companies and average companies, we made every effort to catch up with what was, in fact, an illusion. Theory Y, for example, is not so well known or applied in the U.S. as in Japan.

Neglect of (or failure to reference) that vast body of thought can be variously viewed as disingenuous, or ignorant. Whatever the reason, the end result is the same – TQM appears as narrow and isolated, and lacking in the historical context, coherence and the strength that would inevitably attach to a theory or model of management, *explicitly*

embedded in the long and rich tradition of management and economic thought. Examination of what most western readers would regard as perhaps the seminal work on quality, Deming (1982/1986) will find no reference to economics, management or behavioral science literature – nor, one should point out, is there mention of the classic and voluminous work of Joseph Juran published in 1951 (though Juran is referred to several times) or the immensely popular *Quality is free*, published in 1979 by Philip Crosby, who himself did not refer in his texts to Shewhart, Deming or Juran.⁷ Readers of Deming will also find little help in understanding the history of the quality management movement – on the contrary they will be misled. To illustrate the power of the gurus to obfuscate, distort and shape the quality debate to suit their own commercial ends we draw attention to the roles of Shewhart, the Union of Japanese Scientists and Engineers (JUSE), Sarasohn and the Industry Branch of the Civil Communication Section of the Supreme Command Allied Powers (SCAP), and the Ishikawa's, father (Ichiro) and son (Kauro).⁸

The true story of what happened in Japan in the decade after the end of World War II and the role of Deming and Juran is much closer to that described by Tsutsui, (1996:325) than that promoted by Deming. Tsutsui saw Deming as:

...a facilitator, not a creator, a prodigy of public relations rather than a genius of management strategy, an ornament rather than an oracle. To claim for him a more profound legacy – in either America or Japan – is to fall victim to a seductive but ill founded legendary, to become lost in the dehistoricized haze of heroic fame. Only by surmounting the increasingly ornate and monolithic accretions of myth can the actual – and relatively modest – accomplishments of W. Edwards Deming be finally illuminated.

What Tsutsui (ibid: 315-317) had to say about Juran is even more revealing of the extent to which Deming was able to distort and manipulate the history of the quality movement

⁷ Cole (1998:52) has suggested that Crosby's, *Quality is free*, is "...the first and probably the only book on quality that American top management had ever read up till 1985"

⁸ The profoundly important JUSE was formed in May 1946 with Ichiro Ishikawa as its first President. Ichiro Ishikawa (the father of Kaoru who became the "the intellectual rudder of the [Japanese] quality movement in post-war Japan" (Tsutsui, 1996:317)) was also the foundation President of the Japanese Standards Association, which had been formed on December 6, 1945.

in Japan by both what he said, and even more effectively by his silence on the role of SCAP, JUSE and Juran⁹:

Through the early 1950s, the leadership of JUSE groped for a way out of the apparent dead end they had reached with Deming's model of statistical quality control. Although Japanese practitioners were moving uncertainly toward solutions, it was the intervention of yet another American expert, Joseph Juran, that would spark the reconceptualization of the Japanese quality movement. Juran, like Deming, was a prominent QC consultant yet, unlike his predecessor in Japan, he was not a professional statistician and took a considerably less technical view of quality control. Invited to Japan in 1954 by JUSE, Juran inspected factories, conducted training courses, and evaluated the QC movement. Based on his observations, Juran pronounced that Japanese experts (like most American corporations) had made the mistake of defining quality control in too narrowly mathematical a fashion. Criticizing the "mania" for statistics on both sides of the Pacific, Juran decried the construction of QC as an arcane code for engineers divorced from normal managerial functions, the fabric of the workshop, and the organization as a whole. Effective QC, Juran stressed, depended more on pragmatism than theoretical competence, on the appreciation of economics as well as science, and on the mobilization of the entire company. Juran advised the Japanese to reframe their vision of quality control, to consider QC an integral part of the production process, a "tool of management" rather than a statistical veneer.

Juran's critiques accorded closely with the perceptions of the JUSE vanguard, and his suggestions for reconceptualization of QC were almost immediately hailed as the movement's salvation. Indeed, the general thinking of Japanese quality experts had been moving gradually toward the idea of a broadened QC since the early 1950s, and Juran's intervention finally provided the impetus and direction for a major reevaluation. Juran's central message - the quality control had to go beyond statistics and diffuse outward from the specialist staff - seemed a comprehensive prescription for the ills afflicting the Japanese movement. "QC's sphere of activities must be extremely broad," one convinced listener reported. "The measures QC addresses should include everything." For some, Juran's wisdom was a virtual epiphany: "QC by all employees, by the whole firm, is the true QC," one Japanese convert affirmed. Above all, though, Juran preached pragmatism, shifting the movement's focus from the perfection of mathematical techniques to the attainment of the actual objectives of management reform. Here, it seemed, lay the blueprint for cracking the deadlock in Japanese quality control. As Nishibori Eizaburō remarked at the time, Juran's inspiration was like "welcome rain" to JUSE's parched and wilting quality crusade.

Quality has many unacknowledged progenitors. There is the Moravian shoemaker, Tomas Bat'a, who developed a comprehensive model of management in the first decades of the twentieth century. Less likely a forebear was a physicist turned statistician, Walter Shewhart, who provided the basis for a major development in management theory and practice. Even less likely was a former US Army paratrooper and radio engineer (who like Shewhart had his initial training in physics), who developed an approach to management that saw quality as *the* primary corporate objective and profit as a short term

⁹ The reader should be aware that in the Japanese language there is no distinction between "control" and "management". When the Japanese management literature refers to "quality control" it should most often be read as "quality management"

constraint. That former US Army paratrooper and radio engineer was Homer Sarasohn.¹⁰ As Chief of the Industry Branch of SCAP, Sarasohn was asked by General Douglas MacArthur to help reconstruct the Japanese communications industry. Sarasohn and his colleagues, Charles W. Protzman, Wilbur Magil, Gilbert Weeks and Frank Polkinghorn, predated the work of Deming, Juran and Feigenbaum in Japan by several years. Indeed, it was Sarasohn who proposed that Deming should be invited to replace Shewhart, who was the first choice of Ichiro Ishikawa (president of JUSE) but was unable to accept an invitation from SCAP, on behalf of JUSE, due to ill health.¹¹

In June 1949, in Tokyo, Sarasohn and Protzman began a series of seminars entitled *The Fundamentals of Industrial Management*. Butman (1997:97 and 113], one of the few writers to acknowledge and document the historic role played by Sarasohn and his colleagues (albeit to show the pre-1950 influence of Joseph Juran on Japanese industrial development – Juran didn't visit Japan until 1954), provides the following description of their work.

¹⁰ Homer Sarasohn stayed in Japan for five years, and alone among the American quality management experts (which he never claimed to be), immersed himself in Japanese culture. Sarasohn became fluent in the language, and wrote a textbook in Japanese entitled *The Industrial Application of Statistical Quality Control* (Dobyns and Crawford-Mason, 1991:13). In 1950 Sarasohn established Japan's Electrical Testing Laboratory and the certification of electrical products against a product performance standard. Sarasohn's farewell address on leaving Japan, which was delivered in Japanese, is reproduced in Kevin Foley (2004), *KEVIN FOLEY: Five Essays on Quality Management [Essays in Honour of Homer M. Sarasohn]*, Sydney: Consensus Books.

¹¹ The invitation to Shewhart and later extended to Deming was made by SCAP *at the request of JUSE*. To the author's knowledge Deming made no reference in his writing to SCAP and did not mention that the first choice of JUSE was Shewhart and that the call to him from SCAP requesting he visit Japan was placed by Homer Sarasohn. Nor, it appears, did Deming ever mention SCAP and Homer Sarasohn and that his services were paid for by SCAP. Furthermore, Deming's silence seems unlikely to be the result of memory loss:

Since learning of Homer's work I was interested to discover whether Sarasohn and Deming had ever met. Deming's visits to Tokyo did not overlap with Sarasohn's time there so any such meeting would had to have been in America after 1950. My first opportunity to enquire came at Ashridge Management College when working with Dr Deming in a research group. I raised the subject, and Homer's name, during a coffee break. I got short shrift . . . Who?, he queried, sharply. It was as if the question were an impertinence! I was surprised, to say the least, but let the matter drop and events moved on (www.firstmetre.com.co.uk/library/documents/493/).

They hastily developed a 357-page text in English and also had it translated into a 488-page Japanese version. They then invited – perhaps “commanded” would be a more accurate word – the managers of the important communications companies to attend. With little enthusiasm, nineteen company presidents and executive directors attended the conference held in Tokyo [at Washeda University, starting September 26], and twenty-five more attended a session in the city of Osaka. They were the senior managers of the now-familiar names in the Japanese electronics industry: Masaharu Matsushita from Matsushita, Takeo Kato of Mitsubishi, Bunzaemon Inouye of Sumitomo, as well as representatives from NEC, Fujitsu, Toshiba, Hitachi, Sharp [then Hayakawa], Furukawa, Sumitomo Electric and Oki. Six academics also attended, including Kaoru Ishikawa, who would become Japan’s leading exponent of quality control. Both seminars ran eight weeks, four afternoons a week from 1pm to 5pm. Sarasohn conducted his segments of the course in Japanese.

The superior organization of power has less to do with the mechanical and intermittent subordination or domination of people by specific interventions of an A getting a B to do things they would not otherwise do and has more to do with the ability of power to transpose the means of subordination into legitimate currency, into authority. Quality management has been remarkably successful in practice in achieving such transpositions. It was largely through the discourse of quality management that a key stakeholder whose absence marked the process of production was developed as a baleful, ever-present subjectivity in spirit – the customer. The customer comes discursively dressed up as an interested party whom the enterprise cannot ignore, whose interests are manifestly present even in their absence.

The changing face of quality management and new forms of power

The obsessive concentration on the customer in the foundation literature on quality management, as the focus of attention for the organization seeking sustainable success, brought with it a new and largely unreported (and perhaps unrecognized by the early promoters of quality management) notion – although the *raison d’être* of the for-profit manufacturing organization remained as the satisfaction of the owner/shareholder by maximizing profit, focus on the customer identified it as a second stakeholder, that is, as an entity whose needs and expectations must be met to avoid either unacceptable cost or failure.

Although not made as explicit as it might have been, quality management in the 1980s and 1990s argued that the way to sustainable success (profit maximization) was through quality of product and customer satisfaction/delight. Consequent on that assertion there

were now *two* entities (or what later came to be described as stakeholders) whose wants and expectations must be attended to as a strategic imperative. It was the movement (albeit implicit) from one (owner/shareholder) to two (owner/shareholder and customer) stakeholders (and perhaps the observation by some that customers were not regarded as a stakeholder by all organizations) that stimulated and accelerated identification of the *business* organization as having a number of stakeholders. Explicitly, this stakeholder model of the organization had been foreshadowed by Mary Parker Follett in 1918, enhanced by Edith Tilton Penrose in 1959, and brought to mainstream management attention by Edward Freeman in 1984.

Somewhere during the course of the emergence of a stakeholder conception a number of promoters of quality management shifted their attention from the shop floor and machine operations of manufacturing industry and the need for top management to lead and encourage quality of product, to the system level of the organization, i.e., the quality management system¹². With those changes the effect of quality management on the power structure of the organization also changed – essentially it widened to include the quality manager who, in many cases gained power by intermediating themselves into a key relation between top management, remote from the actual processes of production, and the workforce, whose process work accomplished more or less quality.

Still later in the evolution of quality management a greatly increased number of promoters of quality management (and a slowly growing number of management scholars) began to free themselves from the shackles of the quality gurus (particularly Deming) and to question such notions as continuous improvement, management by facts, and the slavish commitment to customer satisfaction/delight. There were also concerns with the lack of an explicit theory, as well as the paucity of empirical support for simple nostrums. Increasingly, both promoters of quality management and management scholars were seeking to establish its relevance in a rapidly changing

¹² If this emphasis on top management leadership and concentration on quality at the system level occurred before 1987 and the publication of ISO 9000 that international standard certainly gave impetus to the shift. As we have mentioned, ISO 9000 was instrumental in institutionalizing quality management, creating the position of Quality Manager and establishing quality auditing as a multi-billion dollar industry.

world. Service industries were beginning to dominate, organizations of all sizes and forms had to deal with several stakeholders, and there was incontrovertible evidence of movement from the manufacturing society in which quality management was conceived to a knowledge society.

The new form of quality management that has emerged out of those concerns brings with it a further change in the way in which quality management influences the power structure of organizations. While the issues relating to power shifts at the workplace and system level in organizations remains largely unchanged (although the role and power of quality managers has been diminishing for some time, with many organizations having abolished the position), those implementing the new stakeholder oriented quality management find that it brings new power relationships into being. The essential power difference between the earlier forms of quality management and TGQM are the relationship between the organization and its often large and diverse group of stakeholders, i.e., *interested/affected parties with the power to influence the organization*. Stakeholders make different contributions to organization wealth, make different and often conflicting demands on the organization, and while each exercise the same form of power they may exercise that power in very different ways.

By 2000 the position had been reached where most (but not all) of those who ignored the failures of TQM (or rather blamed the failures on their clients) and continued to promote the quality management of the gurus had either been exposed as charlatans or had left quality management behind to promote another management fad, which very often was a variant or part of TQM with another name. Though it was probably the contributors to the Spring Issue of the 1994 *The Academy of Management Review* that provided the spark for a revision of TQM, it was not until 2000 that it became clear that rather than disappearing, as it seemed it would (and many argued it should) TQM was evolving (among scholars not consultants) into a discernable new form – a form that has been created by either rejecting, modifying or combining many of what were previously the defining features of TQM. By 2000 there was a growing agreement that TQM would continue its all too obvious decline and disappear from the management lexicon unless

there was an explicit recognition that it was *intrinsically* flawed and that the world in which it was first developed had fundamentally changed.

As Foley, Hensler and Jonker (2007) have pointed out TGQM begins with the assumption that the contemporary organization has a number of stakeholders and each stakeholder has wants and expectations that must be satisfied if the organization aim is to be achieved. TGQM has an *explicit* theory (organizations that adopt quality of product as their guiding strategy will achieve sustainable success if the stakeholder imperatives encompassed by that strategy are optimized; while all other stakeholder imperatives are satisfied at least cost) and differs from TQM in several significant respects. It derives from a stakeholder *not* a customer perspective and is based on and drawn from a widely accepted theory of business behavior. Stakeholders are distinguished from interested/affected parties and the approach is coherent in the sense that it has a starting point and each step can be logically related to each other; thus it presents an explicit theory rather than a set of principles, points, steps, etc. Stakeholders are explicitly power players; they seek to drive strategies and make a difference in doing so, and the relations between them will be dynamic and potentially unstable.

Quality is identified as an explicitly constrained optimum that may be treated as an end (as is very often suggested – e.g., zero defects, *continual* improvement) only to the point where the pursuit of that objective encounters diminishing returns or threatens to impede the ability to satisfy other stakeholder imperatives. Thus, power relations are integral to the new approach. As stakeholders seek to fix their interests and agenda as the circuits of power through which relations flow, they will have to do so in ways that accept the facts of quality's stabilization as an obligatory passage point in the new stakeholder politics. Whatever other interests get to be positioned, they will have to be constituted, rhetorically, in ways that flow through and do not prejudice quality where that has already been stabilized as an obligatory passage point for organizational politics. It should be evident that old-style quality managers, low in status and professional skills, in very few cases were in a position to make this situation occur. Thus, when they lost support, as the rhetoric outpaced the reality, they were cast adrift. Positioning quality as a

strategic stakeholder imperative puts it in the arena where top management team power relations are shaped: the boardroom and its directives. Of course, there can be no guarantees – as we have been at pains to express power is always highly contingent and indeterminate. Players may be inept; new issues that trump quality might arise. However, the new approach positions the issue powerfully; whether the promissory note is cashed is another matter.

In the new approach quality and customer satisfaction are unambiguously, and explicitly, identified as relative rather than absolute values. Theoretically, the new approach draws from a wide range of management, economics, and quality management literature (rather than the ideas of one writer, e.g., Deming) and a significant body of thought in economics (particularly the theory of the firm), management, sociology, psychology, and marketing literature addressed to the theory of organizations. A distinction between the organization aim and the strategies necessary to bring into being and perpetuate (sustain) an organization is made. Thus, managing for quality is a *strategic* process with general management theory being designed to follow strategy. Three of the central tenets of TQM are disavowed – the notions of continuous improvement, management by facts, and the notion that the quality strategy is appropriate to all organizations at all stages in their development. The TQM mantra of management by facts should not be rejected; rather TGQM sees that it must be tempered by the reality that as decisions relate to higher levels of the organization they rely less on objective information and more on highly bounded rationality, cognitive limitations, and uncertain information. Organizations are part of society – they impact and influence society by their actions (and sometimes their very existence) and are themselves influenced and impacted by society.

As we remarked earlier, the TQM that was accepted in the 1980s and 1990s had no explicit theory, little empirical support, and assumed customer satisfaction to be a strategic imperative for all organizations – in many cases customer satisfaction was promoted as the organization aim (Reed and Lemak, 1998). While the failure to understand the importance of theory and empirical research and a misinterpretation of organization reality would be reason enough to either reject the prevailing version of

TQM, or conduct a major overhaul, the most obvious and compelling reason for leaving the quality management of the 80s and 90s behind has been the shift that had occurred in that period from a manufacturing based to a knowledge based global economy. As Søren Bisgaard (2006a) recently observed:

In 1970 roughly 25% of the workforce in the United States was employed in manufacturing. Today, fewer than 10% of American workers are employed in manufacturing. Indeed, manufacturing output as a percent of GDP [measured in current prices] has declined from 26% in 1970 to 13% in 2005. Moreover, manufacturing in 1970 was largely physical and manual in nature, whereas today about 50% of the current 10% “manufacturing” employment could just as well be classified as service or “knowledge work” as the late Peter Drucker called it. Those trends are mirrored in all the major economies of Europe and Japan. Yet the quality profession is still primarily focused on manufacturing!

Bisgaard’s comment echoes that of the recent ASQ study (*ASQ 2005 Futures Study*) and is a reminder that the world has so changed in the last several decades that it is no longer feasible to discuss the management of organizations without recognizing that the economy has shifted to a situation where organizations operate in a world of process and pattern change, in which dynamics are predominant rather than a static equilibrium, where evolution prevails and chance events can have a heightened and unanticipated saliency – features that are nowhere more in evidence than in high technology industries. As this shift has taken place the mechanisms that determine economic behavior have increasingly shifted from diminishing to *increasing* returns. Unlike the relatively well-defined diminishing returns markets that characterized the first and much of the second generation of TQM, increasing returns markets are not so well defined and organizations are unable to optimize in the traditional sense. In such an environment, where success is cumulative and self-reinforcing, the ability to adapt shifts from being an important feature of sustainable organization to that of a strategic imperative – perhaps the imperative that is given greatest primacy.

Conclusion

From its scientific management roots and inauspicious formal beginning with Walter Shewhart’s “one page memo” in 1924, to rejection as a management fad by 2000, the quality management story reads as a tale of abuse and misuse of power by the quality gurus; greed, mis-description, and missed opportunity that begs two questions: First, is TGQM yet another in a long line of interpretations and re-interpretations of a

management ideology that is, and always has been, inherently flawed and should finally be given the last rites? Second, are the power implications of TGQM different from those of TQM, and if they are, as we have suggested them to be, what does that mean for those organizations that choose to adopt “quality first” as a guiding strategy and use the theory of quality management proposed by Foley, Hensler and Jonker (2007) to effect that strategy? We answer that question in the negative and argue that the third generation form of quality management simply draws on contemporary *management* thought (in a way the early promoters did not) to place the ideas (*sans* hyperbole, *plus* power implications – power is explicit in the stakeholder notion) of Walter Shewhart and Homer Sarasohn into a multi-stakeholder, knowledge based world. Quality can become a decisive discourse in the transition to a more dynamic organizational world of multiple stakeholders from whom multiple and positive power opportunities flow.

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CHAPTER THIRTEEN

Developing Supply Chain Excellence through Strategic Quality Management

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Introduction

This paper explores the role of strategic quality management in developing supply chain excellence. A case study-based research methodology was used to gather qualitative data from IBM seen as an international best practice organization in supply chain management. A case study protocol was developed based on the European Business Excellence Model (EBEM) and was used to conduct face-to-face interviews with senior executives. Content analysis revealed that there is a set of strategic quality practices that is critical to successful management of an integrated supply chain. The paper concludes that top leadership commitment provides the momentum for strategic quality in the supply chain as long as the supply chain is seen as a strategic imperative rather than a cost-cutting exercise. This commitment drives other systems including human resource management, culture, technical systems, information and analysis systems, and social responsibility. Based on the qualitative research we conclude that strategic quality provides a significant contribution to the development of an integrated supply chain and its effectiveness. However, supply chain models without detailed knowledge about the whole seamless system would not lead to an effective supply chain.

The choice of a supply chain model would typically depend on how the company as a whole is organized, which would take into consideration the suppliers and the customers' organizations. The systems and organic model are the dominant theoretical models to emulate an integrated supply chain. Managers should adopt a long-term orientation and view of supply chain management as a strategic imperative rather than a cost-cutting exercise. We further conclude that the role of the supply chain manager should be a senior role, which would provide the strategic direction and provide unity of purpose to help break down barriers between individuals and departments. The IBM case study has shown that a model, underpinned by strategic quality management concepts and principles, can respond with flexibility and speed to any customer demand, market opportunity or external threat emerging from the external environment.

Based on our qualitative analysis we articulate several implications for senior managers: Supply chain management should be seen strategically rather than tactically. Managers should develop an understanding of supply chain concepts and the role of strategic quality in the supply chain. A second implication is that taking a global approach to supply chain management requires the simultaneous application of strategy, structures, culture, and behavior, which are underpinned by a global perspective of strategic quality management. The main implication for managers from this study is that an integrated supply chain could provide a link between internal barriers with external suppliers, to work jointly in developing procurement systems and skills with a greater outreach within the entire supply chain.

There are many definitions provided in the literature on Supply Chain Management (SCM), for example, (Krause, Handfield, and Scannell, 1998). However, many of the definitions on SCM do not focus on quality management. Those definitions that do focus on quality, such as, Kuei and Madu (2001), who have called it Supply Chain Quality Management (SCQM), do not focus on the strategic aspects of quality in developing supply chain excellence. Kuei and Madu define SCQM as *“a market sensitive, quality-driven, policy aligned, process coordinated, and technology-based philosophy.”* As supply chains integrate their activities, a more strategic approach to supply chain

management needs to be taken. Lee et al., (2003) states, “*A successful supply chain strategy requires distinct capabilities to meet these challenges.*” Therefore, the challenge for managers is to understand supply chain management from a strategic perspective as a means of adding value and developing supply chain excellence.

Garvin (1988), Hermel (1989, 1997) introduced the concept of strategic quality management (SQM), emphasizing that quality must be defined from the customer's point of view and understood and supported from the ‘top floor.’ Garvin used the terms "total" and "strategic" quality interchangeably, as we have done in this paper. Tummala, and Tang (1996) have defined strategic quality management as: “*a comprehensive and strategic framework linking profitability, business objectives and competitiveness to quality improvement efforts with the aim of harnessing the human, material and information resources organization-wide in continuously improving products or services that will allow the delivery of customer satisfaction.*”

Based on Tummala and Tang’s definition of SQM we can see that the strategic approach to quality is more comprehensive and firmly tied to continuous improvement. It is closely linked to profitability and basic business objectives, and more sensitive to competitive needs and customer needs. Taken together SQM and SCQM increase the breadth and depth of supply chain management in terms of effectiveness ‘*doing the right things*’ and efficiency ‘*doing things right.*’ Therefore, the key objective of the organization is to maximize the performance of the supply chain as a whole to deliver value for all stakeholders in the supply chain, and not just the customers.

An in-depth case study based on IBM’s integrated supply chain was developed. A protocol was developed based on the European Business Excellence Model (EBEM). The following research questions are articulated and qualitatively investigated in this paper:

1. *Is there a single or multiple model of TQM that could be used to characterize an integrated supply chain?*
2. *What are the Critical Success Factors (CSFs) in developing Supply Chain Excellence?*

In addressing the two questions, the main contribution of this paper is the development of an integrated supply chain model within the context of strategic quality management. Our key findings contribute to a deeper understanding of the CSFs that are imperative for supply chain excellence. Our paper provides benefits to supply chain managers for making decision in allocating scarce resources to factors that are critical for success, and to researchers who may wish to continue the research stream using cross-sectional surveys.

Literature review

An extensive literature review was conducted to identify important concepts and to document research findings from earlier research that serve as a basis for the development of a theoretical base. The following section reviews the literature on quality in the supply chain within the framework of Deming's Profound Knowledge Framework.

Quality in the Supply Chain

Forker, et al., (1997) examined quality management practices upstream in manufacturing firms to determine which quality practices helped to improve supply chain performance. The study identified five quality management practices that were influential in developing supply chain excellence: impact of supplier quality management; role of quality department; training; quality data and reporting and efficient implementation of quality management practices upstream (supplier end) in the supply chain which is one of the most significant contributors explaining supplier quality performance.

These findings underline the importance of managing strategic quality throughout the supply chain. Forker et al., (1999) also examine supplier improvement efforts from both the customer and supplier end. Results indicate that customers and suppliers are largely in agreement regarding the extent of the suppliers' TQM implementation. However, little agreement was noted regarding the customers' execution of supplier development activities.

Deming's System of Profound Knowledge

The preparation of a case study requires clearly stated goals and a theoretical base, a protocol for information gathering, a selected research site, and the trust and cooperation of those companies that are being studied (Yin, 1989). In order to address the research questions, we establish a theoretical base from Deming's theory of profound knowledge in conjunction with the EBEM, which serves as a basis for the development of the case study protocol.

Deming stressed that top management has the overriding responsibility for quality improvement. Deming's philosophy underwent many changes over four decades. For example, in his early work in the US, he developed Deming's "14 points" The 4th point related directly to selection of suppliers and states to "*End the practice of awarding business on price tag alone.*" When awarding business based solely on the price tag, other deliverables such as quality and delivery are ignored According to Deming's 4th principle, organizations must use a procurement process that systematically rejects bad products, yet encourages suppliers to stay as close as possible to their customers and to continually improve their processes. Deming synthesized the underlying foundations of the 14 points in what he called "*A System of Profound Knowledge*" which consists of four interrelated parts; (Evans and Lindsay, 2005) as briefly explained below:

System

Managers cannot manage the system, in this case the supply chain, by simply managing the parts or the various nodes in the supply chain. Rumler and Brache (1990) view organizations as 'Adaptive Systems' with an ability to adapt to changing demands imposed from the external environment both task environment and societal (Wheelen and Hunger, 1998). Therefore, adaptive systems-thinking is required for an effective integrated supply chain.

Variation

The second part of Profound Knowledge is a basic understanding of statistical theory and variation. Management of variation in processes has continued to evolve beyond TQM and into Six Sigma Quality (SSQ). Pande et al., (2000) defines Six Sigma as: "*..a way of*

measuring processes, a goal of near-perfection, represented by 3.4 Defects per Million Opportunities (DPMO); an approach to changing the culture of an organization". However, Pyzdek (2003) argues that it is not possible to reach Six Sigma quality levels with three or four sigma suppliers.

Psychology

Much of Deming's philosophy is based on understanding human behavior and treating people fairly. Psychology helps us to nurture and preserve these positive innate attributes of people; otherwise, we resort to carrots and sticks that have no long-term values. Goldratt (1990) summed it up very well by stating *"Tell me how you measure me, and I will tell you how I am going to behave. If you measure me in an illogical way...do not complain about illogical behavior."*

Theory of Knowledge

Deming emphasized that knowledge is not possible without theory, and experience alone does not establish a theory. Spencer (1994) examined TQM in relation to the mechanistic, organizational, cultural, and systemic theoretical models of the organization in an effort to bridge the gap between TQM practice and management theory. In the following section we provide a brief overview of the four models of TQM within the context of SCM.

The Mechanistic Model

Supply chains that are typically characterized by this model predominantly focus on cost reduction and efficiency gains in the supply chain. The primary goal is to improve quality, and increase the productivity and efficiency of the organization. Clemmer (1992) explicitly compared TQM with what he called the "traditional paradigm" of management. He noted that in the old paradigm, managers think; employees do. Clemmer's traditional paradigm corresponds closely to the mechanistic model of organizations described by classical management theorists.

The Organizational Model

From this perspective, TQM too serves to ensure the survival of the system, in this case the supply chain. The organizational model assumes that what is best for the long-term survival of the organization is best for its members.

The Cultural Model

From this view, culture should be treated as "*what the organization is*" as opposed to "*something that the organization has*" (Smircich, 1983). When viewed as a philosophy or cultural change, therefore, TQM has much in common with the cultural models. Therefore, TQM may be viewed as a choice that may be made by organization members who wish to cooperate with suppliers to improve the quality of both their products and the supply chain as a whole.

The Systems Model

This model is compatible with the definition of TQM from the customer's point of view, its organizational boundaries, its emphasis on horizontal work flows (Rumler and Brache, 1990), its elimination of barriers and cross-functional teams, its use of vision as a motivator, and its commitment to empowering workers (Kanter, 1987; Garvin, 1988; Saraph et al., 1991). Throughout his work Deming explicitly described organizations as systems. Indeed, understanding organizations as systems is one of the four principles of his "System of Profound Knowledge" (Deming, 1986; Imai, 1986; Hunt, 1993). This careful integration of organizational and mechanistic ideas is supported by systems thinkers (Kasi and Rosenzweig, 1972) and is imperative in developing supply chain excellence.

Synthesis

The TQM models discussed above advocate a humanistic, systems approach to TQM while espousing the need for fundamental cultural changes at all levels of the organization within the supply chain (Deming, 1986; Schmidt and Finnigan, 1992). Therefore, TQM can be seen as a management practice specifying methods reflecting both mechanistic and organizational thought. However, the question that arises is not whether all components are required for a successful integrated supply chain, but whether there is some necessary pairing among elements.

The European Business Excellence Model (EBEM)

According to Shergold and Reed (1996), the EBEM is a model which integrates customer satisfaction, employee satisfaction and impact on society through leadership driving policy and strategy, people management, resources and processes. These lead ultimately to excellence in business results (Shergold and Reed, 1996). The model is split

on an equal basis between the enabler criteria, concerned with how an organization approaches its “business” in each of the areas described by the criteria and sub-criteria; and results criteria, concerned with what an organization has achieved and is achieving (Shergold and Reed, 1996).

Research design

A case study protocol is designed based on the EBEM discussed in the next section. The case study provides a longitudinal analysis of the process of change in the supply chain at IBM over a three-year time frame. In particular, the role of strategic quality is examined at various stages of the supply chain. An analysis of events during the three year period are documented in terms of what happened, why it happened, how it happened, who was involved and the main lessons learnt.

Respondent

Correspondence was sent by Professor Hermel, (co-investigator) Dean of the Faculty of Business and Humanities at the University of Versailles to an IBM executive seeking participation in the project. The letter explained the purpose of the research and explained the methodology and addressed the ethical undertakings by the researchers. The researchers collected relevant documentation from the interviewees and IBM’s Internet site. Additional material was sought from the organization during the field interviews such as organizational charts, annual reports, and business and operating performance outcomes, survey results, power point presentations etc. An in-depth case study is presented in the following section on IBM as a ‘best practice’ in Integrated Supply Chain Management (ISCM).

IBM case study – On-demand supply chain management

IBM is the world's largest information technology company. IBM is aligned around a focused business model: of strategic quality and innovation. IBM invents and applies technology (computer systems, software, storage systems and microelectronics) to help solve customer’s business and competitive problems. IBM measures its performance by how well the organization helps clients to solve their biggest and most pressing problems. Measured by revenue, IBM is the biggest provider of IT services (\$46B), hardware

(\$31B) and financing (\$2.6B), and second in software (\$15B). Revenues in 2004 were \$96.2B.

Transformation to an Integrated Supply Chain

IBM considers the effective and efficient operation of its Supply Chain as a key factor in improving their competitiveness. Therefore, based on the extent of implementation of ISC practice developed by Sohal et al., (2002), IBM has approached ISC implementation from a strategic perspective. “...*Supply Chain Management is definitely the key element of competitiveness at IBM. Competition is no longer between single organizations but rather between integrated supply chains. We must not forget the other functions in the organization such as quality being achieved at every stage of the supply chain; marketing, finance and accounting are also a key element in our strategy. We started the transformation of logistics in 1999 with the aim of integrating the different pieces of the puzzle*”. (Supply Chain Manager).

The Company began the transformation effort toward an integrated supply chain in 1999. The most crucial factor prior to the launch of the change program was the articulation and communication of the IBM’s values. The key values that IBM employees espouse are: dedication to every client's success, innovation that matters and, trust and personal responsibility in all relationships. Having a shared set of values helps IBM to make fast decisions that directly impact supplier performance and customer satisfaction.

The influence of values occurs when values are applied to personal work and in interactions with one another and the wider world. When viewed as a philosophy or cultural change, therefore, SQM has much in common with the cultural models.

The Supply Chain Manager made the point that it is critical for a particular leadership style to align with IBM’s culture. “*I have been at IBM for more than 20 years. I met people with fantastic personalities, with a lot of charisma but who could not fit into the IBM culture. I think that it is not because they were not good leaders; it is because their*

style of leadership did not align with the IBM culture. I think there should be an alignment between the style of the leader and the culture of the organization.”

Integrated Supply Chain at IBM – International best practice

IBM established the Integrated Supply Chain Management System (ISCMS) in January 2002 and expanded the mission in January 2003. The ISC is organized in four distinctive but strongly related areas: Customer Fulfillment – Global Logistics – Manufacturing – and Procurement. These functions are all underpinned by ISC business transformation and operations strategy, which provide depth. On the other hand, IBM has established core teams that are responsible for the proactive implementation of the various activities in the ISC. The three teams are: the operations team, strategy team, and talent team which provide the breadth for the ISC organization.

The principal objectives of the ISC are underpinned by the strategic quality principle of managing variation, hence cutting costs in the various activities of the supply chain, and to engage in continuous reinvention. These principles have led to specific objectives for IBM’s ‘On-Demand Supply Chain’ which are to: deliver competitive cost advantage and improve the variability of cost and expense structure; Improve sales productivity by decreasing the time sales representatives spend on order fulfillment by 25 per cent per year; accelerate the cash conversion cycle by 33 per cent over two years by continuing to drive improved inventory, accounts receivable and supplier payment terms execution; improve inventory turns by one per year, increase payables by at least one day per year and improve receivables by one-two days per year; deliver marked improvement in supply chain capability to contribute to IBM achieving number one in customer satisfaction.

Much of the IBM’ success with the ISCM system has been due to the on-demand business model and seeing ISC as a competitive weapon. The core to the ‘On-Demand Supply Chain system is best described by IBM’s definition of ‘on-demand business model. *“An enterprise whose business processes are integrated end-to-end across the company and with key partners, suppliers and customers–can respond with flexibility and*

speed to any customer demand, market opportunity or external threat” (IBM definition of an on-demand business model).

The ISC redesign at IBM was guided by several principles which form the fundamental pillars for the effective and efficient operation of the integrated supply chain: Measure success on customer satisfaction and the ability to create shareholder value; Provide competitive advantage to IBM in the areas of productivity, efficiency, cost, quality, responsiveness, and cash management; deliver a superior end-to-end customer experience; execute with speed and a sense of urgency through simplified processes; transform the supply chain to demonstrate IBM’s e-business on demand leadership and be recognized as the supply chain leader; and develop and leverage the skills of people globally as an integrated team.

Based on the above principles, the core strategic imperatives of the IBM’s ISC are to drive focus, flexibility, quality and cost competitiveness; complete the rollout of core strategic IT platforms; extend supply chain principles to IBM’s services businesses; and provide industry-leading solutions integration and delivery capability. These core strategies are underpinned by information, process and people, having attributes that are responsive; variable; focused; and resilient. *“Leaders at IBM have developed the capacity to lead groups and teams in order to achieve their targets. It is the leadership capacity that motivates people to work together. Human qualities, communication qualities, motivation, the energy and the capacity to add the energies of the people around you to achieve a target are the key success factors for an effective supply chain at IBM.”* (Supply Chain Manager, IBM France).

Global Procurement System (GPS)

As part of the IBM’s ISC, IBM reengineered their procurement system to a high performing global organization which is influential to the business and is staffed with capable people in the specialized area of procurement. The goal was to create a strategic organization with sustained competitive advantage. However, prior to reengineering their procurement function, IBM had serious gaps in performance which were typically

characterized by decentralized units which perpetuated maverick buying; end-user dissatisfaction; generalists purchasing staff who lacked sourcing expertise; a tactical rather than a strategic approach which was inconsistent; paper intensive; lacking leverage; patchwork of legacy systems. IBM embarked upon a transformation of key enterprise processes so that 'silos' could be broken down and an integrated approach to procurement could be achieved. Silos are formed when organizations are managed vertically and functionally (Rumler and Brache, 1990).

The global procurement system can be characterized by a global strategy, contracts, supplier relationship management, multinational, cross-functional, cross-division teams, supplier integration with internal development and client teams which foster design and specification for on-demand supply. IBM's mission and value proposition for its Global Procurement System is: *"To be the leader in providing logistics value as viewed by our clients and the industry"; "Delivering innovative and competitive logistics solutions that exceed client expectations in terms of reliability and responsiveness."*

Reengineering of IBM's procurement system was a multi-year effort that has evolved across key areas of the IBM operation. The transformation process has been supported along the way with enabling IT tools and applications coupled with supporting technology that has allowed creativity in driving further efficiencies globally. For example, the General Procurement Operations Centers (GPOC) and Commodity Sourcing Councils (CSC) were established at the core of IBM's business design to support the global strategy. Procurement was recognized as a key part of the overall IBM corporate transformation and was sponsored by the Chief Executive Officer and the Chief Financial Officer. CSC roles and responsibilities included cost, quality, supply assurance, and client influence. According to the Supply Chain Manager: *"We learned that there's not a single roadmap to successful procurement but, there are some fundamental building blocks that must be included such as strategy and governance; organizational skills; common processes; integration and enabling technology."* IBM's current objectives are to transform supplier relationships to be on demand extensions of IBM and with premier suppliers (On-Demand "Partnerships")

Global logistics

The IBM Global Logistics organization prior to the reengineering effort can be characterized as having a heavy asset based logistics infrastructure where logistics activities were managed by various IBM entities where a reactive rather than strategic approach was adopted. There was no integrated logistics strategy, services, or roadmap. The skill set was tactical rather than strategic. Prior to the transformation, IBM's Global Logistics had country/region platforms with 400 plus logistics suppliers; 1700 plus team members; 12 plus days delivery cycle-time; indirect delivery model; and the focus was purely on cost reduction.

The structure of Global Logistics after the transformation process consists of Inbound Component Parts Logistics; Outbound Hardware Logistics; Service Parts Logistics; Reverse Logistics; Original Equipment Manufacturers Logistics; Software Logistics, and Services Logistics. In contrast to the heavy asset based logistics described above, the reengineered IBM Global Logistics Network's attributes include reliability; responsiveness; variable; and competitive with a global logistics profile. This includes logistics for both IBM and non-IBM produced goods/services. The Business Unit is \$1.5 billion cost center positioned as a global line organization with 1500 team members and has operations in 56 countries (74 locations). The operating responsibilities are divided into 3 regions: Americas; Asia Pacific; Europe, Middle East, Africa. Support services include procurement, HR, network optimization, information technology, packaging, and finance.

IBM's Lead Logistics Provider (LLP) stays focused on the changing business requirements. The Supply Chain Manager stated that her best decision was "*to use the project management methods and tools for logistics projects, to make sure that what we decided is really implemented in an organized way. What I like in management projects is the mixture of different people and cultures.*" After the transformation, the Global Logistics system performance can be characterized as follows: global optimization; 2 logistics suppliers; Less than 300 team members; Delivery cycle-time is less than 3 days;

70 per cent plus direct deliveries; supply chain value and customer satisfaction. It is quite evident from the above discussion that an “on demand” logistics network has strengthened IBM’s competitive advantage.

IBM’s ISC Performance Excellence

The ISC system at IBM has the capacity to handle more than 78,000 products with 3 million possible configurations, 33,000 suppliers worldwide, and 13 factories in 10 countries. The ISC is accountable for half of IBM’s total cost and expense of \$39B. The ISC has 19,000 employees in 100 locations in 59 countries. More than 2 billion kilograms of machines and parts are moved through the IBM logistics network annually. In 2003 the ISC generated over \$700M cash for IBM and reduced costs by \$7B in 2003. This is equivalent to \$19M per day. These results have elevated the ISC to the top 10 supply chains in the world.

Synthesis

What is interesting to note in the IBM case study is the role that strategic quality management concepts and principles have played in the conceptualization and implementation of the ISC. The critical success factors, which are the core principles of TQM, of the IBM ISC are: Integrated organization; Management system for governance and change management; Partnerships inside and outside the company; People, Process and Tools. *“At IBM we are a large team; there are people to think and other people to execute. I participate to the elaboration of the strategy but, in my position, I’m more involved in the execution. But I could not execute if the job is not clearly defined and understood by myself and by people around me. I study the strategy and understand it before I embark on implementation”* (Supply Chain Manager).

There are several lessons that we can learn from this case study. The main lesson is that transformation is hard work and requires a strategic and integrated approach where the CSFs above are implemented simultaneously. The logistics function has to have a broader cross-enterprise approach. This has been demonstrated to achieve both ongoing cost and service improvements. Everything starts and finishes with the customer by

establishing customer driven metrics that reflect business value and communicate horizontally and vertically within the integrated supply chain. The performance of the ISC is not simply technology driven. It is about integration of process, skill and leadership that articulates a vision to generate excitement and to develop a team and to continuously seek out the best talent with tomorrow's skills. Following from the above, supply chain management is not just about traditional areas such as transport; warehousing and inventory control, but extends to marketing and product development. It involves seeing other players in the supply chain not just companies with a contractual link but also as collaborators.

Based on the IBM case study the main implication for managers is to understand the need to improve and understand the current situation, including markets and trends. Coming to grips with these issues is crucial in developing a strategic view of supply chain management. Secondly, strong supply chain relationships are founded on solid working relationships and trust; and finally on free flow of information within the supply chain.

Discussion of results

This section discusses the qualitative results with respect to the two research questions. With respect to the first research question, managers could gain a better understanding of the nature of the demand for their products and design the supply chain to best satisfy that demand by taking a long term orientation and viewing supply chain management as a strategic imperative rather than a cost-cutting exercise; limiting the number of suppliers and establishing trust and inter-firm communication; recognizing the role of information technology as a lever which can increase the communication process through the exchange of supply chain information. However, there is no single organizational model based on strategic quality for supply chain management. The choice of a model will typically depend on how the company as a whole is organized. The systems and organic model are the dominant theoretical models to emulate an integrated supply chain. A research study by A.T Kearney (2004) also confirms the recent trend toward center-led organizational models.

Strategic quality management provides a significant contribution to Supply Chain excellence. Managing a complex, integrated supply chain is highly dependent on activities in the supply chain being strategic rather than tactical. Cross-enterprise coordination and continuous improvement through reengineering of core processes in the supply chain was seen by IBM as a critical success factor.

The role of Supply Chain Management was elevated to an Executive position which was responsible for planning and control of all activities related to materials that move from suppliers, through the production process and to customers. The senior role provided unity of purpose and helped to break down barriers between individuals and departments. Cross-functional teams helped to avoid situations in which everyone blamed everyone else when difficulties related to materials developed. Suppliers were selected and developed with a long-term view toward improving product quality, fast deliveries and responsiveness to customer's needs.

Long-term contracts were used to guarantee suppliers security and to provide incentives for developing trust and cooperation. Partnerships with suppliers were common practice to quickly produce products of near-perfect quality (Six Sigma) precisely when needed and with minimum inventory. IBM provides suppliers with information on customer orders and their due date, and provided some training to their suppliers in quality management and quality control. E-Business helped IBM to drive down costs, shorter procurement lead times, and improve communication throughout the supply chain. The use of computers was used to reduce costs and enables management to trace orders within the supply chain and to determine when a product is expected to arrive at its destination. Our findings are consistent with the literature findings that lack of strategic thinking is the most common cause of organizational failure. With respect to the second research question, we found that there is a set of CSFs that collectively characterize an integrated supply chain and are common to the four organizations investigated, as synthesized below:

1. Support from top management is necessary for the successful development and implementation of an integrated supply chain.

2. Design of supply chain processes as organic units, matched to business strategy and set across functional areas, which basically involve the flow of information and materials.
3. Process mapping to find opportunities to reduce waste and adopt standardization to improve quality performance through cross-functional teams.
4. Reengineering of various nodes of the supply chain by understanding of the external environment (political, cultural etc.).
5. Cooperation between supply chain partners where sharing of knowledge is profound.
6. Strategic and systemic thinking on how to best serve the ultimate consumer
7. Reduction of the number of suppliers without significant risk or increased costs and selecting suppliers on quality and price.
8. A focus on supply chain performance rather than firm performance would lead to the final customer achieving a better product at lower cost (i.e., value).

Conclusions

Based on the qualitative research we conclude that strategic quality provides a significant contribution to the development of an integrated supply chain and its effectiveness. However, supply chain models without detailed knowledge about the whole seamless system would not lead to an effective supply chain. The choice of a supply chain model would typically depend on how the company as a whole is organized, which would take into consideration the suppliers and the customers' organizations. The systems and organic model are the dominant theoretical models to emulate an integrated supply chain. Managers should adopt a long-term orientation and view of supply chain management as a strategic imperative rather than a cost-cutting exercise. We further conclude that the role of the supply chain manager should be a senior role, which would provide the strategic direction and provide unity of purpose to help break down barriers between individuals and departments.

There is a set of CSFs, which collectively characterize an integrated supply chain. These factors are critical due to their strategic, tactical and integrative capability which

addresses the four dimensions of Deming's profound knowledge: system, variation, theory of knowledge, and psychology (Deming, 1986).

Based on the qualitative results we conclude that the 'on-demand' business model has emerged from the IBM case study as the future model for the development of an integrated supply chain where business processes are integrated end-to-end across the company with key partners, suppliers and customers. The IBM case study has shown that a model, underpinned by strategic quality management concepts and principles, can respond with flexibility and speed to any customer demand, market opportunity or external threat emerging from the external environment.

Implications for managers

Based on our qualitative analysis we articulate several implications for senior managers: Supply chain management should be seen strategically rather than tactically. Managers should develop an understanding of supply chain concepts and the role of strategic quality in the supply chain. A second implication is that taking a global approach to supply chain management requires the simultaneous application of strategy, structures, culture, and behavior, which are underpinned by a global perspective of strategic quality management. The main implication for managers from this study is that an integrated supply chain could provide the bridge between internal boundaries with external suppliers, to work jointly with suppliers and to develop sophisticated procurement skills with greater outreach to other functions and partners.

Limitations and recommendations for future research

A single case study limits generalizability of the qualitative findings. Therefore, we propose a cross-sectional study involving several industry sectors to test hypotheses. This should be a structured study using a statistically credible sample and multivariate data analysis methods. In addition to cross-sectional surveys, further in-depth case studies should be considered. These studies would provide detail on the impact of the Integrated Supply Chain Management constructs and variables identified in this study to determine the rich fabric of how these initiatives lead to organizational excellence.

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CHAPTER FOURTEEN

Comparative Analysis of Nine Performance Measurement Systems

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Introduction

The objective of developing models or frameworks of performance measurement systems is to help organizations to define a set of measurements that reflects their goals and objectives and help them evaluate performance and implement strategies. The main aim of this paper is the comparative analysis of nine performance measurement systems. After describing each of the systems, they are compared using fifteen requirements. The fifteen requirements used are the result of previous empirical research: A survey was designed in order to study the actual and ideal characteristics of performance measurement systems. From a large sample of Spanish companies, we obtained a total of 144 responses. As a result of this analysis, sets of correlated questions were identified and a common explanation was constructed for each group. These constructs, which can be interpreted as requirements, or prerequisites for implementing performance measurement systems, are used for assessing soundness and comparing the different performance measurement systems.

The nine performance measurement system frameworks under consideration are: The '*Tableau de Bord*', 'The Technique for Analyzing and Reporting on Strategic Measurement', 'The Performance Measurement Questionnaire', 'The Malcolm Baldrige

Model', 'The Balanced Scorecard', 'The EFQM Excellence Model', 'The Model of Reference for an Integrated Measurement and Performance System', 'The Performance Prism' and the 'Management Systems Engineering Model'.

This study allows the main strengths and weaknesses of each of the performance measurement systems to be pointed out. Furthermore, we can draw interesting relationships among the different performance measurement systems.

The need for measurement is associated with the human instinct not only to understand one's own activities but also to find out what activities other people are engaged in. 2500 years ago, the Chinese strategist, Sun Tzu, stated: "If you know the enemy and you know yourself, you won't need to fear the result even of a hundred battles" (Carrascosa, 1999). Measurements endow vague concepts with clarity. Niven (2002: 23) attributes the following quotation to Lord Kelvin, circa 1850: "When measurements can be taken of the subject under discussion and expressed in numbers, something is known about the subject; but when it cannot be measured, when it cannot be expressed in numbers, such knowledge is of a poor and unsatisfactory variety". Kaydos (1999: 20) refers to advice given by Galileo Galilei (1564-1642) regarding measurement: "Count what can be counted, measure what can be measured, and if it is not measurable, then make it measurable".

References to the activities or tasks of organizations are constant and growing in academic and business circles. Nevertheless, it is not easy to find definitions for such actions. For Otley (1999) action is defined with respect to budget as profit. Kaplan and Norton (1992) echo the criticism leveled at the emphasis on financial benchmarks as measurements of company action, asserting that financial measurements do not improve customer satisfaction, quality, the length of the cycle, and the motivation of the workers. Financial activity is the result of operational activities and financial success will be the outcome of a good performance in the fundamentals. According to Bourguignon (1995) performance or achievement refers simultaneously to the action, to the outcome of the action and to the success of the outcome when compared with a specific referent. For

Otley (1999) an organization that is performing well is one that is establishing its strategy effectively – and one might add efficiently, too. The difficulty of the concept lies in defining what measures or benchmarks reflect a company's performance on a global scale and are the most suitable for assessing such performance.

Simons and Dávila (1998) consider that the fact that strategy is often difficult to establish is not usually a source of surprise for most executives. This is the reason why so many companies are linking their strategy to their performance benchmarks. In the definition of performance or achievement, two very different elements can be observed: current performance and future outcomes. This follows Lebas and Euske (2002) with the need for a causal model that will link current actions with such outcomes. Olve, *et al.*, (2003) suggest that the great challenge in measuring performance is to find some clear cause/effect relations and strike a balance between the different benchmarks. These measurements should support the global view and the general strategy.

Kaplan and Norton (1992) define the Balanced Scorecard, in what was to be their first article on this framework, as a set of measurements that provide senior executives with a quick overall view of the company's situation. Bititci *et al.*, (1997) distinguish between the Management Process of company performance and the Measurement System for such performance. The first of these involves a process by means of which the company manages its performance in keeping with its corporate and operational strategies and objectives. The Business Performance Measurement System is an information system that will include all relevant information and should be of an integrated nature, which in this context means that it should enable tactical and strategic objectives to be used correctly. Brown (1996: 3) sets out the following characteristics for what he calls a new focus for measuring organizations:

- Concentrating on measuring the few key values that are vital instead of many trivial ones. Using a smaller number of measures is better.
- The indicators should be linked to factors that are essential for business success: key managers in the business.

- The measurements should be a mixture of past, present and future to ensure that the company concerns itself with all three perspectives.
- The indicators should be based on the needs of the customers, share-holders and any others that are affected by their results.
- The measurements should begin at the highest level of the organization and flow down reaching all levels of workers.
- To gain an overall idea of business performance, multiple measures can be conflated into a single indicator.
- The indicators should be changed, or at least adjusted to suit the changes instituted with respect to the setting and strategy.
- The measurements need to have objectives based on research, not on arbitrary numbers.

For Meyer (1994) the design of a system of indicators for performance should reflect the basic operative assumptions of the organization supporting it. Olve *et al.*, (2003) consider that a good indicator system should have a mixture of measures focused on the future and the past. For Epstein and Manzoni (1997) the measurement system for performance should be divided into local measurement groups for the units at the lowest level, so that the company objectives can be implemented in more manageable subgroups. Bititci *et al.*, (1997) identify two basic characteristics of the indicator systems: integrity and implementation. Integrity refers to the ability of the performance measurement system to foster integration amongst the various different areas of the business. For Niven (2002) cascading means developing a scorecard for each and every one of the levels of organization. Finally, Vitale and Mavrinac (1995) consider that well-designed strategic indicator systems include a dynamic capacity that encourages constant change and evolution in the group of measures.

Performance Measurement Systems Models

The ‘Tableau de Bord’ Scorecard

For Lebas (1994) the *Tableau de Bord* scorecard is composed of a coherent set of selective data in ascending and descending order, which feeds the three levels of

management: strategy, management and operations. It is focused on controlling physical¹ and financial benchmarks to assess and anticipate performance. According to Epstein and Manzoni (1997), the idea of having a kind of complete picture of business performance is not really anything new. Many companies have monitored and presented multiple benchmarks for years, and countries like France have a tradition in this respect. Hence, the indicator system known as the *Tableau de Bord* Scorecard appeared in France at the beginning of the 20th century. In keeping with Epstein and Manzoni (1997), the *Tableau de Bord* Scorecard is developed – Figure 1 – on the basis of the mission and vision of the company. Taking these as a starting point, the strategic objectives will be defined, followed by the critical factors for success and the key performance indicators.

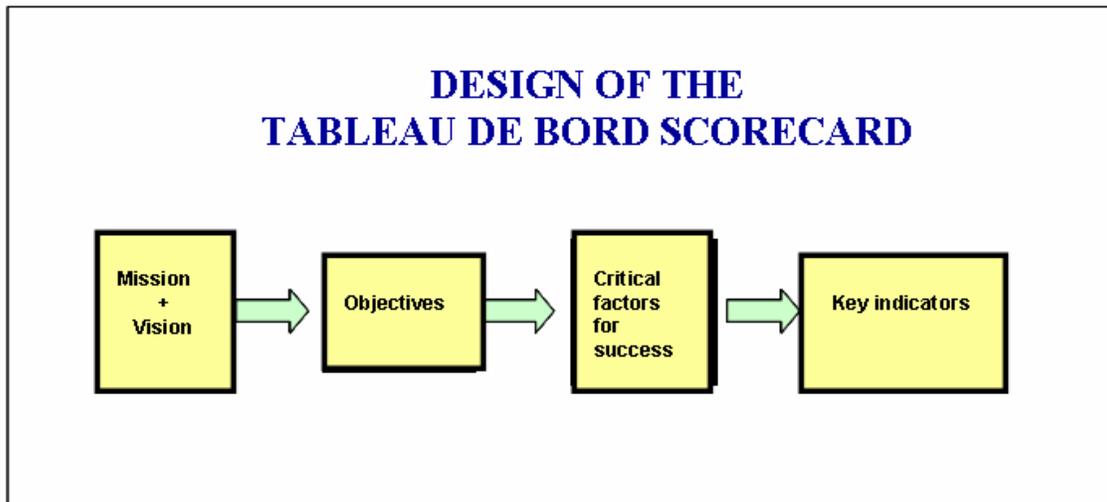


Figure 1. Development of the Tableau de Bord Scorecard. Source: Adapted from Epstein and Manzoni, 1997

The *Tableau de Bord* Scorecard is more than a simple document, being considered by the French authors to be a general management focus. Apart from the fact that it has a set of benchmarks for each unit, which will support the decisions made at that level, the greatest value will be derived from its own development process, which forces each unit, function or division to review its own objectives, critical factors for success and the areas of

¹ The author refers to benchmarks for the production process such as the cycle length, breakdowns, productivity, etc.

interdependence with other units. Standing out as weak points of the *Tableau de Bord* Scorecard, according to Epstein and Manzoni (1997), are the predominance of financial measurements in French companies and their use for internal comparison over several financial years, while completely overlooking external comparisons, along with their use by senior executives as a tool to support distance management and exceptional management, leading to the loss of the *Tableau de Bord* Scorecard's potential and usefulness as a result.

The technique for analyzing and reporting on Cross and Lynch's Strategic Measurement.

This indicator system, known by its English acronym SMART,² was developed by Wang Laboratories, (Cross and Lynch, 1989) as the result of the dissatisfaction in that company with the traditional measurement system, such as use of the equipment, efficiency, productivity, etc. The objective was to set up a management control system with performance benchmarks designed to define and sustain the success of the organizations. Figure 2 illustrates the SMART system by means of a 4-tier pyramid of objectives and measurements.

One important merit of this approach is that it attempts to integrate the objectives of the business using operational measures. The idea of implementation moving from strategy to the operational level is also reflected in the model. Other positive aspects are the use of indicators linked to intangible assets such as quality and delivery, as well as the distinction between measures of an external nature such as quality, customer satisfaction and deliveries, and others of an internal nature such as productivity, the length of the cycle and cost. A weak point is that it does not supply any mechanism to identify key indicators relating to quality, delivery, cycle time and cost. Another one is the fact that it does not explicitly integrate the concept of continuous improvement.

² SMART stands for *Strategic Measurement Analysis and Reporting Technique*.

REPRESENTATION OF THE SMART SYSTEM



Fig. 2 The Performance Pyramid

Dixon, Nani and Vollman's Performance Measurement Questionnaire

The authors developed the Performance Measurement Questionnaire with the aim of assessing to what extent the indicator system existing in an organization fostered continuous improvement. The questionnaire consists of three parts. The first part supplies general information for use in classifying the responses. The second one asks for the identification of the areas requiring long-term improvement, which exist in the company and saying whether the current performance measurement system encourages or inhibits such improvements. The third part calls for comparing what is most important for the firm with what the current indicator system leads to.

Table 1 shows the three elements commented on above, for which an assessment is requested on a Likert scale of seven points. The results of the questionnaire will be analyzed from four different angles. In the first case, with respect to alignment, the extent of concordance between strategies, actions and indicators existing in the organization will be submitted for analysis. In the second case, devoted to coherence, an assessment will be

made of how far strategies, actions and measurements support one another mutually. The third case is that of consensus, in which the data is grouped together according to managerial level and functional group. In the fourth case, the level of existing disagreement is analyzed among the different responses at the level of area of improvement and indicators. This will all allow strong points and opportunities for improvement to be identified for the existing indicator system. Finally, a workshop will be carried out based on the previous results and will develop, review and re-focus the measures in operation.

Long-term importance of improvement None >>>> High	Areas of improvement	Effect of current measures of performance in improvement Inhibitive >>>> Supportive
1 2 3 4 5 6 7	Quality	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Efficiency of labor	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Efficiency of machinery	1 2 3 4 5 6 7

Table 1. Importance of the improvement and the effect of the performance measurements

The Malcolm Baldrige Model

In keeping with authors such as Czarnecki (1999), Brown (1996, 2000), Kaplan and Lamotte (2001), Kennerley and Neely (2002), Neely *et al.*, (2002) amongst others, this framework provides a model for indicator systems. The same heading of descriptive information for the model is ‘Criteria for Excellence in Performance’ (National Institute for Standards and Technology³, 2005) shows that it is focused on the design and implementation of indicators that make excellence possible in the running of organizations by providing a perspective on systems for understanding performance management.

Figure 3 shows the seven criteria that make up the model offering a systemic perspective. Such criteria provide a focus on systems for managing the organizations that use them for

³ Henceforth the acronym NIST will be used.

self-assessment purposes, by using both the integration of all the criteria that are interconnected, as well as each one separately. The Baldrige criteria went from being focused on quality management in 1997 to an overall conceptual framework aimed at improving performance of the whole company (Porter and Tanner, 2004).

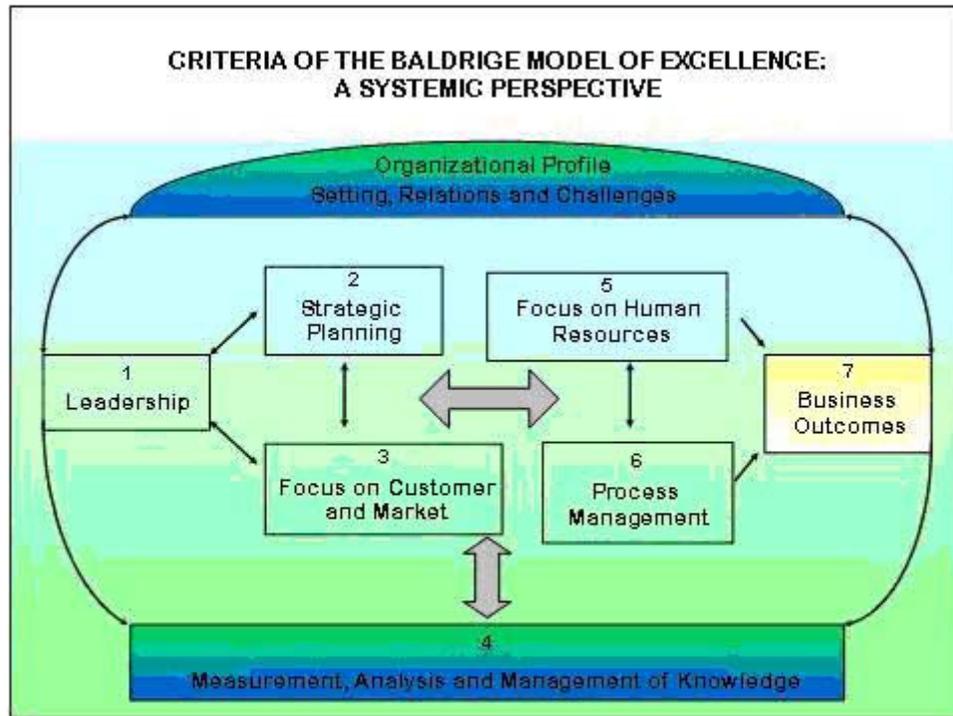


Figure 3. The Malcolm Baldrige Model. Source: NIST (2005)

Kaplan and Norton's Balanced Scorecard

The indicator system model known as the Balanced Scorecard (BSC) was developed by Robert Kaplan, a lecturer at Harvard University since 1984 and David Norton, a business consultant from the Boston area. For Gautreau and Kleiner (2001) the BSC is a model for indicator systems. This model has evolved over time, from being a set of measurements shaping business performance (1992), to a model for establishing the strategy (1996a, 1996b), and it is currently considered by Kaplan and Norton (2001) to be a complete tool for establishing an organization based on strategy.

In 1990, Kaplan and Norton carried out research on a dozen companies – from the service sector, from heavy industry and from high technology – entitled ‘Measuring results in the

company of the future', motivated by the belief that existing methods based on measuring performance that depended primarily on assessments made by looking at the accounts were not adequate for the situation at that time (Kaplan and Norton, 1996). The project was developed through meetings with the management from these companies, with Kaplan acting as academic consultant and Norton as project leader. The group discussed a series of possible alternatives, but finally accepted the idea of a Scorecard in which the measurements would reflect the activities of the whole company. This led to the Balanced Scorecard, developed in their first article 'The Balanced Scorecard' in the *Harvard Business Review* (Kaplan and Norton, 1992) which was organized according to four perspectives: financial, customer, internal, and learning and growth.

The EFQM Excellence Model

For authors such as Kaplan and Lamotte (2001), Kristensen *et al.*, (2001), Kennerley and Neely (2002), Neely *et al.*, (2002), Creelman (2003), Wongrassamee *et al.*, (2003) amongst others, this framework establishes a model for measuring performance. Ahmed (2002) considers that the criteria for the results of the EFQM Excellence Model are contained in the indicator system model similar to the Balanced Scorecard (BSC). The EFQM (1999) establishes that the EFQM Excellence Model is a non-perspective framework, formed by the nine criteria that can be seen in Figure 4.

For McAdam and Bailie (2002) the Balanced Scorecard (Kaplan and Norton, 1996) and the model for business Excellence (EFQM, 2001) should be seen as tools that allow for the dynamic alignment of benchmarks and strategy.

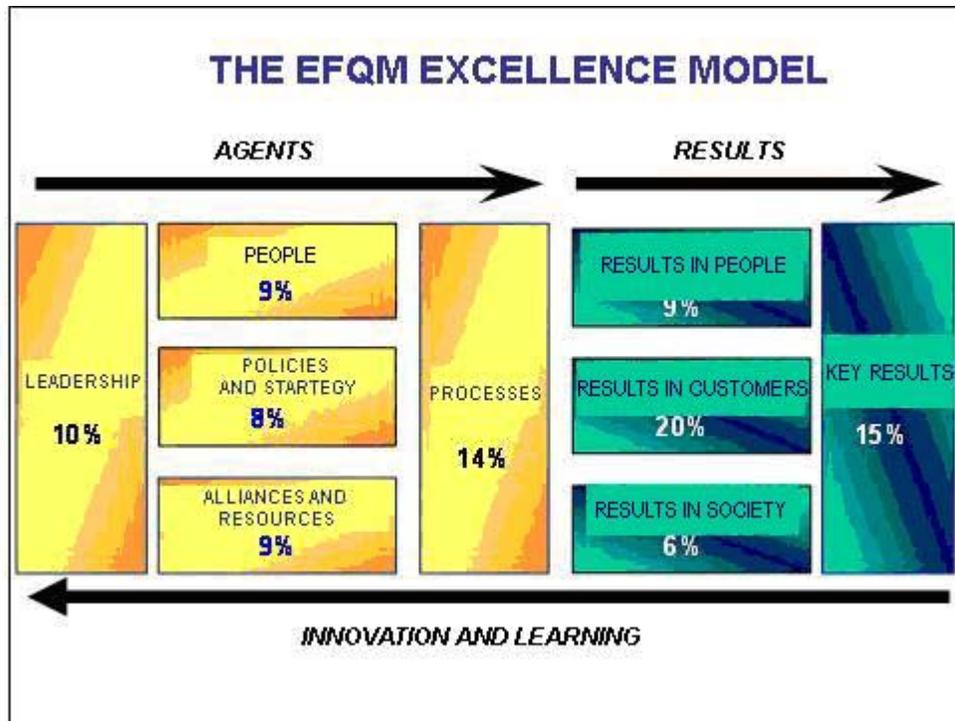


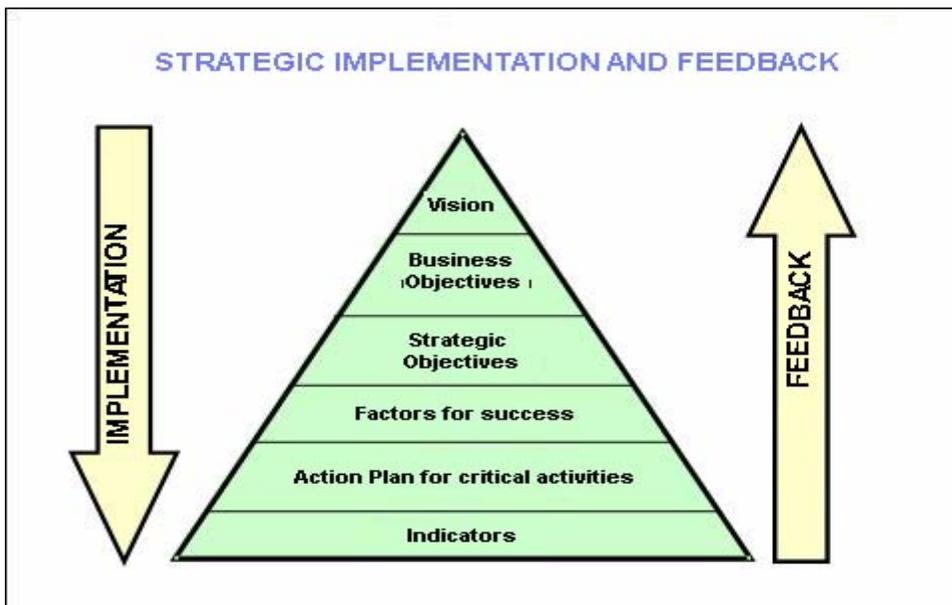
Figure 4. Structure for the EFQM Excellence Model.
 Source: European Foundation for Quality Management, EFQM

Bititci, Carrie and McDevitt's Model of Reference for an Integrated Measurement and Performance System

As we have seen in the section concerning indicator systems, Bititci *et al.*, (1997) lecturers at the University of Strathclyde, look at the process involved in managing performance management as being the process whereby companies manage their own performance in accordance with their own strategies and objectives, irrespective of whether these are functional or corporate issues. For Bititci *et al.*, (1997) the purpose of the performance management process is to provide a control system using a closed, proactive loop, in which corporate and functional strategies are implemented with respect to all processes, activities, tasks and personnel. Feedback is obtained through the performance measurement system to facilitate the right approach to decision-making (Figure 5).

Bititci *et al.*, (1997) propose a Model of Reference for an Integrated Performance Management System. Their aim is for this system to satisfy the two characteristics, commented on earlier, which should be included in an indicator system: integrity and immediate use. The main contribution of the Bititci, Carrie and McDevitt model is its ability to structure the implementation of the indicator system ranging from the demands of the situation, company objectives, strategic indicators, and process indicators, to the activity measures and, furthermore, to pursue integrity interpreted as being the indicator system pursuing a common focus for all business areas. According to Hudson *et al.*, (2001), the method fails since it does not provide a structured establishment procedure that specifies the objectives and deadlines for the design and implementation of the indicator system.

Figure 5. Implementation in a closed loop and feedback system.
Source: Bititci *et al.*, (1997)



This model takes into consideration the idea that it is not possible to create value for the shareholders without creating value for the stakeholders (Crowe, 1999). In order to reflect their increasing importance, the Performance Prism adopts a vision of business performance focused on such stakeholders (Adams and Neely, 2000; Neely *et al.*, 2001; Kennerley and Neely, 2002). While in many companies the shareholders may well be the

most important stakeholders, the other groups should also be taken into account, these being: customers; employees; suppliers; other investors; regulating bodies; and pressure groups. The objective Neely *et al.*, (2001) have in mind when developing their Performance Prism is to help companies select the most suitable indicators. It involves a complete conceptual framework addressing key business aspects and serves as a model for a wide range of both profit-making and non-profit-making organizations.

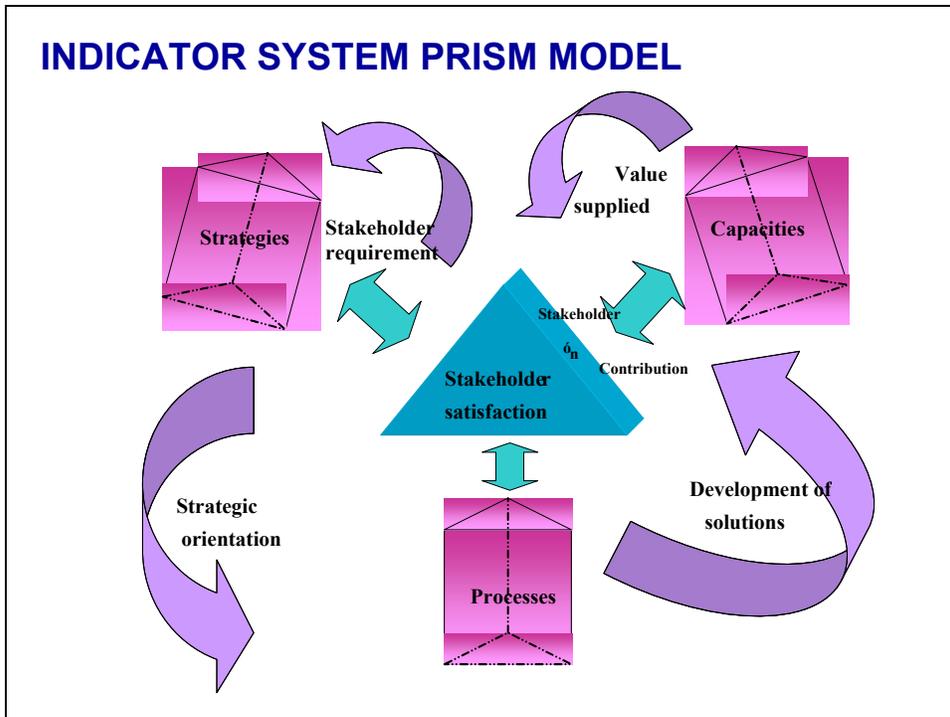


Figure 6. The Performance Prism.
Source: Created from Adams and Neely (2000)

Figure 7 shows the Performance Prism, which is a three-dimensional model composed of a prism with 5 sides that are all interrelated. The organizations will structure their indicators aided by the orientation supplied by the five sides. In keeping with the indications given by Kennerley and Neely (2002: 152) the first side is that pertaining to Stakeholder Satisfaction, and asks: “Who are the stakeholders and what do they want and need?” The second side refers to the strategies and the question is: ‘What strategies are required to satisfy the wishes and needs of the stakeholders?’ The third side refers to the processes and asks: ‘What processes should be organized for the strategies to be

implemented?’ The fourth side refers to capacities. Capacities are the combination of people, practices, technology and infrastructure that jointly enable the processes of the organization to be put into practice and make up the blocks that form the company’s ability to compete. The question linked to this aspect is: ‘What capacities are required to operate our processes?’ The fifth and final side is the one involving the contribution of the stakeholders and holds good for all types of stakeholders: customers, employees, partnerships, investors, local communities, etc. A key element for designing a good indicator system is the Success Map (Neely and Bourne, 2000; Neely *et al.*, 2001; Kennerley and Neely, 2002) defined as a cause-effect diagram explaining the organization strategy and management theory on how to run a company. According to Neely and Bourne (2000) the success map points out very clearly the levers executives can pull and the impact pulling such levers will have on how the business operates.

Krause’s Management Systems Engineering Model

The purpose of the model proposed by Krause is to solve the lack of operational resources that have been perceived to exist in the most widely disseminated model for indicator systems in the United States of America and in Europe: Kaplan and Norton’s Balanced Scorecard (BSC). It is concluded that the BSC is lacking in operational qualities, assuming that the general rules of implementation proposed by Kaplan and Norton, such as the commitment of managerial staff for instance, are complied with.

To solve these problems, Krause (2002, 2003) proposes his ‘Management Systems Engineering’ model based on an applied research focus, with repetitions between theoretical development and practical assessment, performed over a period of seven years’, Krause (2003: 5).

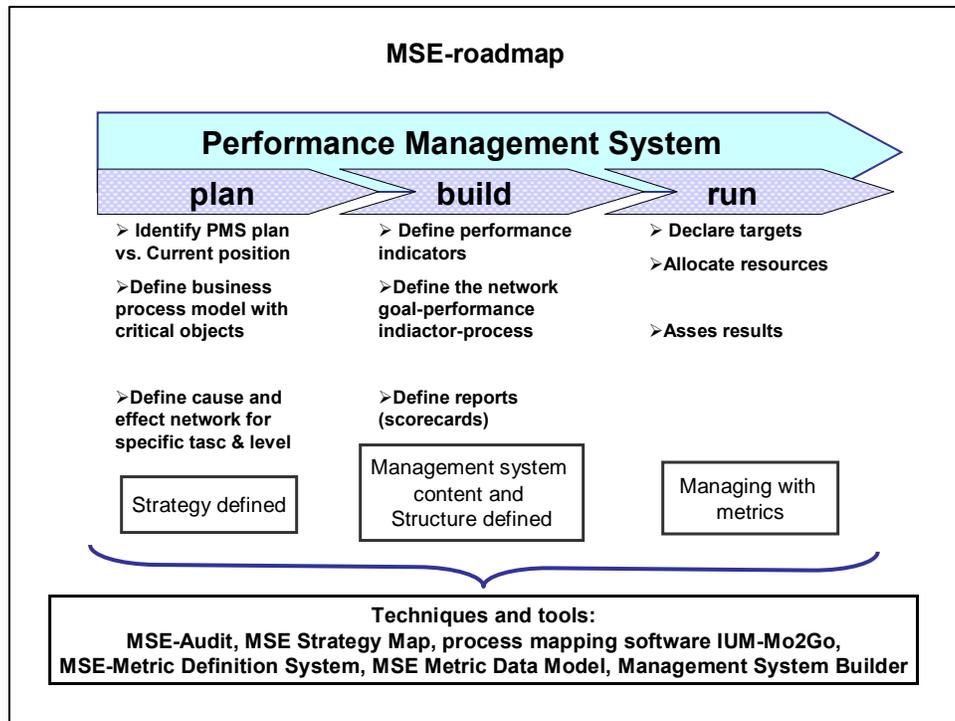


Figure 7. Stages in Krause's Indicator Systems Model
Source: Krause (2003)

The planning stage begins with structuring the specific project based on a particular management task. The result of this stage is a defined strategy. This strategy is interpreted as a plan for carrying out a structured modification from the current model to the one that is required in the future, always in the context of a specific task.

The second phase is the construction stage, emphasizing the definition of the structure and content of the indicator system, which is the nucleus of the management system. It also includes the definition of critical management processes.

The third phase focuses on setting goals and allocating resources and, finally, on the calculation of the values for the indicators and implementation of the system.

Methodology and the Framework of Comparison: 15 Requirements

In order to compare the various models for indicator systems, a qualitative research was conducted enabling a series of hypotheses to be formulated. On the basis of such

hypotheses, different questions were designed for a questionnaire which formed the primary tool of the quantitative research. This quantitative research focused on companies that had implemented quality systems. The population comprised companies that had an ISO 9000 quality system in place and had been certified by AENOR (Spanish Association for Standardization and Certification). The survey questions were based on seven hypotheses studied on the qualitative research. The aims of the questions were to describe the present situation regarding indicators and systems of indicators in the companies analyzed and study the ideal characteristics of a performance measurement system.

The sample framework was built up from a supplied database of these firms, containing details of each company's name, address, telephone and fax numbers, date of ISO 9001 certification, and name and post of the contact manager. There were 3,829 companies in our sample. A simple random sampling was employed.

The questionnaire was designed in a way that included a combination of open and closed questions. A confidence level of 95% $-z_{\alpha/2} = 1.96$ with an error margin of 8% was set for this research, giving a simple size of $n = 150$. Contact was made with 300 companies, with a 50% response rate in view. Of the questionnaires sent, 279 arrived at their destination by letter or fax and 144 replies were received, yielding an 8.17% error margin at a 95% confidence level. This was a high percentage (51.6%) of responses for a postal and fax survey and may be attributable to the various monitoring and chase-up measures taken. Firstly, analysis was conducted of the 135 companies that had not responded, and it was concluded that they had similar profiles to those responding.

The questionnaire was analyzed using univariate and bivariate statistical techniques such as frequency distributions, Chi-squared tests and Kendall's rank correlation coefficient. The open questions were analyzed by repeated readings of the 144 replies in order to identify similar concepts.

This statistical analysis is used to create 15 constructs for evaluating performance indicator systems in the sampled companies. Each construct is related to a set of questions in the survey that show a high degree of correlation and suggest a common idea or thread. For example, Figure 8 shows one of the 15 requirements. The questions shown on the left of Figure 8 refer to the building block to create requirement number one in such a way that the questions display a high Chi-square or Kendall degree of relationships. On the right, it is the requirement ‘constructed’ based on each group of questions, synthesising the whole group.

QUESTIONS FROM THE QUESTIONNAIRE	REQUIREMENT
<p>P8.1: Organised by processes: process operation indicators related to strategic indicators. 66.4% of companies surveyed designated 1, 2 or 3, showing the importance of this characteristic in an indicator system.</p> <p>P8.4: Implemented in a cascading fashion: interrelated indicators originating from the highest levels of the Company. 54.1% of companies surveyed designated 1, 2 or 3, showing the importance of this characteristic in an indicator system.</p> <p>P8.5: Simple to process: data is easily acquired from the system. 61.3% of companies surveyed designated 1, 2 or 3, giving it a higher level of importance.</p> <p>Questions 8.1 and 8.4 have a Kendall interrelationship, with $\tau = 0.157$ and $\alpha = 0.020$.</p> <p>Questions 8.4 and 8.5 have a Kendall interrelationship, with $\tau = 0.125$ and $\alpha = 0.062$.</p>	<p>12. The indicator system should be implemented in a cascading fashion so that it reaches all levels of the organisation.</p>

Figure 8. Example of a Requirement constructed after analyzing the results of the questionnaire

These requirements may be used for assessing the soundness of the nine frameworks evaluated in this paper and future frameworks to help the implementation of performance measurement systems. Therefore, the result of this assessment may be used for continuous improvement of companies and will be reflected in the increase of scores of

these organizations related to the EFQM and Malcolm Baldrige models, and subsequently also in an increase of the companies' level of excellence.

Comparison of Nine Performance Measurement Systems Models: Discussion and Findings

Taking the fifteen requirements and the nine models for indicator systems that were looked at earlier as our starting point, we assess the level of compliance with each of these by such models for indicator systems. The assessment is of a qualitative nature, with three levels of compliance being submitted for consideration:

- Strict compliance of the model with the requirement. This will be indicated by the symbol $\sqrt{\sqrt{\sqrt{}}}$.
- Average compliance of the model with the requirement. This will be shown as $\sqrt{\sqrt{}}$.
- Limited compliance of the model with the requirement. This will be shown as $\sqrt{}$.

In the case of zero compliance, the appropriate cell will be left blank in Figure 10, which is presented in two parts. The analysis of compliance with the models is presented in chronological order and at the same time offers a comparison of such models.

As can be seen in the first part of Table 2, the initial model was evaluated to ascertain to what extent the requirements have been fulfilled is the *Tableau de Bord*. Compliance of requirements 1 and 2 concerning strategy is considered to be average, since while it is indeed based on the mission and vision of the company, there is no consideration of a strategic map. It also shows average compliance of requirements 6, 9 and 10 in that it analyses the incidents of interdependence between the different units of organization, attempts to establish a minimum number of benchmarks and endeavors to make these easy to understand. Compliance with requirement number 12 concerning cascading is likewise judged to be average since although the *Tableau de Bord* is designed for use in all organizational units, creating a nesting structure, no structured methodology is supplied explaining how this is to be achieved. Requirement number 8 is considered to have been fulfilled only to a limited extent, as, despite the fact that this model for indicator systems was originally created during production processes, it does not foster

such an approach, but instead concentrates on the level of the department. Finally, it is not considered to comply with requirements 3, 4, 5, 7, 11, 13, 14 and 15 due to its lack of external orientation, with a huge predominance of financial indicators, no apparent differentiation between strategic and operational indicators, and use for management being an exception to the rule and carried out from a distance.

The Technique for Analyzing and Reporting on Strategic Measurement is the model shown in Table 2. As seen in paragraph 2.2, this conceptual framework was based on the corporate vision and strategy, although its connection with this strategy was not as developed as in the case that will be seen with other models. This means that its compliance with requirements 1 and 2 can only be considered to be average. The satisfaction monitored is that of the customer, and thus compliance with requirement number 4 concerning the stakeholders is considered to be fairly limited. The level of achievement of requirements 5, 6, 7, 10 and 11 is assessed as average. This is due to the fact that a series of non-financial benchmarks are proposed, internal and external indicators are used to guide the customer, attempts are made to promote the relationship between different functions, and to help define the benchmarks, and to look for the relationship between strategic and operational benchmarks. At the same time, compliance with requirement number 12 regarding cascading is also considered to be average since, although the model responds to a top-down approach, from business objectives to operational benchmarks, it does not clarify the criteria for implementation. Requirements 3, 9, 13, 14 and 15 are not considered to have been fulfilled since no benchmarking has been established, neither has the number of benchmarks been reduced to a minimum, and the concept of continuous assessment and feedback on performance have not been integrated.

The Measurement Questionnaire on Performance by Dixon, Nani and Vollman is, as its name indicates, a tool that seeks to assess alignment between the organization's strategies, actions and indicators, and also to what extent the existing indicator system fosters continuous improvement. For this reason, its relationship with the requirements is

limited to numbers 13 and 15 for which there is evidence of strict compliance and to requirements 1, 2 and 14 where compliance is seen to be average.

MODELS OF PMS REQUIREMENTS	1. <i>Tableau de Bord</i>	2. Technical Analysis and Report Strategy Measurement	3. Dixon, Nani and Vollman Performance Management Questionnaire	4. The Malcolm Baldrige Model
1. The performance measurement system must harness implementation of the strategy.	√√	√√	√√	√√
2. The performance measurement system must strengthen communication of the strategy at all levels.	√√	√√	√√	√√
3. The performance measurement system must allow diagnosis of the initial situation, be quantitative, and facilitate benchmarking.				√√√
4. The performance measurement system must allow monitoring of the contribution made by stakeholders, customers, shareholders, and citizens in general and the extent to which their demands are satisfied.		√		√√√
5. The performance measurement system must strike a balance between financial and non-financial indicators.		√√		√√√
6. The performance measurement system must foster integration between the various business areas and a process-based approach that promotes the same end.	√√	√√		√√√
7. The performance measurement system must orient the company towards customers.		√√		√√
8. The performance measurement system should facilitate development of a process-based approach.	√			√√√
9. The number of objectives and indicators should be kept to a minimum in drawing up the performance measurement system.	√√			
10. The indicators forming part of the performance measurement system should be easy to understand, facilitating their alignment.	√√	√√		√√
11. The performance measurement system should relate strategic and operational indicators with one another.		√√		
12. The performance measurement system should be implemented in cascading fashion so that it reaches all levels of the company.	√√	√√		
13. The performance measurement system should foster continuous improvement, which is of strategic importance to companies.			√√√	√√√
14. The performance measurement system should facilitate review of strategy implementation feedback and warn of threats so that timely changes can be made to the strategy.			√√	√√√
15. The performance measurement system should be periodically reviewed.			√√√	√√√

Table 2 - First Part - Compliance with Requirements of Performance Measurement Systems Models

MODELS OF PMS REQUIREMENTS	5. Kaplan and Norton's Balanced Scorecard	6. EFQM Excellence Model	7. The Bitici, Carrie, and McDevitt Model	8. Prism Model	9. Krause Model
1. The performance measurement system must harness implementation of the strategy.	√√√	√√	√√	√√	√√
2. The performance measurement system must strengthen communication of the strategy at all levels.	√√√	√√	√√	√√	√√
3. The performance measurement system must allow diagnosis of the initial situation, quantification, and facilitate benchmarking.		√√√	√√√	√√	√
4. The performance measurement system must allow monitoring of the contribution made by stakeholders, customers, shareholders, and citizens in general and the extent to which their demands are satisfied.	√√	√√√	√√	√√√	√
5. The performance measurement system must strike a balance between financial and non-financial indicators.	√√√	√√√	√√√	√√√	√√
6. The performance measurement system must foster integration between the various business areas and a process-based approach that promotes the same end.	√	√√	√√√	√√√	√√
7. The performance measurement system must orient the company towards customers.	√√√	√√√	√√	√√√	√√
8. The performance measurement system should facilitate development of a process-based approach.	√	√√	√√√	√√√	√√√
9. The number of objectives and indicators should be kept to a minimum in drawing up the performance measurement system.	√√√			√√√	
10. The indicators forming part of the performance measurement system should be easy to understand, facilitating their alignment.	√√√	√√√		√√√	
11. The performance measurement system should relate strategic and operational indicators to one another.	√√	√√			
12. The performance measurement system should be implemented in cascading fashion so that it reaches all levels of the company.	√√		√√√		√√
13. The performance measurement system should foster continuous improvement, which is of strategic importance to companies.	√√	√√√	√√√	√√	√√
14. The performance measurement system should facilitate review of strategy implementation feedback and warn of threats so that timely changes can be made to the strategy.	√√√	√√√	√√√	√	√√
15. The performance measurement system should be periodically reviewed.	√√	√√√	√√√	√	√√√

Table 2 - Second Part - Compliance with Requirements of Performance Measurement System Models

Satisfaction level analysis of each of the requirements achieved by the Malcolm Baldrige and EFQM Excellence models will be tackled jointly, commenting on the slight

differences that exist between them regarding compliance with such requirements. This approach is due to the significant elements that both conceptual frameworks have in common, as observed in paragraphs 2.4 and 2.6 of this study. The models both strictly comply with requirements 3, 4, 5, 13, 14 and 15. This is due to the fact that they have been designed to facilitate benchmarking, take all stakeholders into consideration, give precedence to non-financial indicators, foster continuous improvement and promote the concept of self-assessment, leading to reviews of the performance of strategy and of the indicator system itself. They also achieve average compliance of requirements 1 and 2 concerning the establishment and communication of strategy, since they are tools for self-assessment and improvement rather than for strategic planning, and also satisfy requirement number 10 since they offer examples of measurements or indicators, making them easy to understand. Requirement number 6 concerning integration between business areas is strictly adhered to by the Malcolm Baldrige model due to its systemic approach and to an average degree by the EFQM Excellence model. Requirement number 7 referring to the level at which the model orients the organization for the customer is fulfilled to a large extent by the EFQM Excellence model and to an average extent by the Malcolm Baldrige model, since the relative weight of the 'Outcomes in Customers' criterion in the first case amounts to 200 points, whereas in the second the sum of the categories 'Approach to Customer and Market' and the subcriterion 'Outcomes focusing on Customer' is 155 points. The theoretical maximum in both cases is 1000 points. The Malcolm Baldrige model will enable significant progress to be made in the process approach – requirement number 8 – while the EFQM Excellence model will only lead to average improvement. This is because the processes are strongly represented in all categories as well as in the specific category of 'Process Management' in the Malcolm Baldrige model but not to the same extent in the EFQM Excellence model. With respect to requirement number 11, compliance by the EFQM Excellence model is average whereas in the Malcolm Baldrige model it is not satisfied at all. This is because in their criteria concerning outcomes, the first model offers a distinction between benchmarks oriented towards the past or that are induced, and are of a strategic nature and linked to external perception, and those that induce or are oriented towards the future, which are of an operative nature. This does not occur in the Malcolm Baldrige

model, and thus it is considered to be an instance of non-compliance. Finally, requirements 9 and 12 are deemed to be cases of non-compliance in both models since they do not attempt to reduce the number of benchmarks to a minimum or develop them in cascading fashion.

We shall now assess Kaplan and Norton's Balanced Scorecard. The BSC is considered to present a high degree of compliance with requirements 1, 2, 5, 7, 9, 10 and 14. This is due to the fact that, as observed in Chapter 3, the basic objectives of this model are to establish and communicate the strategy; promote the predominance of non-financial indicators; offer customers a large amount of guidance by focusing one of its four perspectives on them; attempting to minimize the number of benchmarks by first of all reducing the number of objectives using the Strategic Map; presenting benchmarks that are simple to formulate, with plenty of examples and seeking to review the strategy by providing feedback on performance. It is considered to achieve an average level of compliance for requirements 4, 11, 12, 13 and 15 because its four perspectives do not contemplate either citizens in general or suppliers, and there is no obvious distinction between strategic and operational benchmarks. While in theory it offers a cascade of benchmarks right down to personal indicators, it does not explain very clearly how process indicators are to be integrated, continuous improvement is not based on the prior assessment of the company as a whole and the indicator system will not be reviewed so frequently since it is more associated with a potential review of strategy rather than with the development of operational benchmarks. With respect to requirements 6 and 8, compliance is limited because the BSC strengthens the departmental structure and, while more and more attention is certainly being given to processes, its focus is restricted to identifying some basic processes on which to set objectives and formulate indicators. Finally, it is noted that it fails to comply with requirement number 3 as it does not facilitate benchmarking since it is a very contextual model.

The Model of Reference for an Integrated Measurement and Performance System designed by Bititci, Carrie and McDevitt was structured around five Systems and based on Beer's Viable System Model. The level of achievement with respect to requirements

3, 5, 6, 8, 12, 13, 14, and 15 is deemed to be high. The reasons, based on the analysis presented in Chapter 3, are as follows: the fact that it is a model oriented towards the auditing of indicator systems; the existence of a System 4 oriented towards benchmarking; the combination of an external focus with the same criteria for outcomes as System 4 in the EFQM Excellence model; the fact that its basic objective is integrating the various different areas of the business, offering processes along with their benchmarks in System 2; making implementation of the benchmarks and cascading the benchmarks using System 3 a basic objective; being focused on continuous improvement through its System 4; and a dynamic model that provides warning of dangerous situations and is submitted to periodic review. It is considered to offer average compliance of requirements 1 and 2 because, despite the existence of System 5, which defines and communicates strategy, the model does not offer a clear explanation of how this is to be done or make use of concepts that help determine the strategy as is the case of the strategic map. The same thing happens with requirements 4 and 6, since no specifications are supplied on how to go about monitoring the contribution of the stakeholders and there is no guidance for the customer, either. Requirements 10, 11 and 12 are deemed not to be satisfied by the benchmarking model at the level of additional activities in System 1, resulting in the danger of ‘inflating’ the indicators, not supplying examples for the definition of strategic indicators and not explaining how the strategic indicators relate to the operational indicators for processes and activities.

Neely and Adams’ Performance Prism presents a high level of compliance with requirements 4, 5, 6, 7, 8, 9, and 10. This is due to the fact that, more than any other model, it will monitor the satisfaction and contribution of the stakeholders – two of its five sides or perspectives are devoted to them – it promotes the use of non-financial benchmarks; it orients the organization to all its customers by considering their satisfaction to be an essential objective; its third side or perspective is made up of the processes; and it seeks to minimize the number of indicators to help make them easy to understand. Its compliance with requirements 1, 2, 3, and 13 is thought to be average since it is considered to be a mistake that the indicators should be derived from strategy, facilitate the diagnosis of the initial situation but not really aid the benchmarking

process, and not highlight continuous improvement sufficiently. Compliance with requirements 14 and 15 is considered to be low since it fails to recognize strategy as being the starting point. Finally, requirements 11 and 12 are not thought to be fulfilled since the model does not establish the relationships between the strategic and operational indicators, or the procedure to be followed for implementation.

The final model shown in Table 2 – second part – is Krause's Management Systems Engineering Model. This approach focuses on finding solutions for operative flaws in the BSC model, by linking strategies and processes. It is considered to achieve a high level of compliance with requirements 8 and 15. This is due to the fact that it encourages a focus on processes within a particular managerial task and is very adaptable. Compliance with requirements 1, 2, 5, 6, 7, 12, 13 and 14 is considered to be average, basically due to limiting the scope of specific projects within the context of the Balanced Scorecard, which also has a greater effect on requirements 3 and 4, in which compliance is deemed to be low. Finally, requirements 9, 10 and 11 are not considered to be fulfilled since the model does not offer any means to allow the number of indicators to be reduced to a minimum or to aid understanding and help distinguish between strategic and operational indicators, by establishing the relationships between these.

Main Conclusions

From the analysis of Table 2 it can be deduced that the model that most complies with the requirements is the EFQM Excellence Model. It is followed very closely by Kaplan and Norton's Balanced Scorecard. After this come the Malcolm Baldrige Model and Bititci, Carrie and McDevitt's Reference for an Integrated System for Measuring Performance.

On the other hand, the requirements that are least complied with according to Table 2 are, in ascending order of importance, number 11 relating to the existence and relationship between strategic and operational benchmarks, number 9 concerning the minimization of the number of objectives and benchmarks and number 12, which refers to the development of the indicator system in cascade fashion.

Due to the complementary nature of the EFQM Excellence model and Kaplan and Norton's Balanced Scorecard, as observed both in the review of the literature and also in Table 2 showing the respective degrees of compliance with the various requirements, the integrated use of both models is proposed as providing the most effective and efficient approach to establishing the indicator system. Thus, the Balanced Scorecard will be used during the design stage or when reviewing strategy, which can be done by integrating the four perspectives presented in both models into setting up Strategic Objectives. Furthermore, the EFQM Excellence model would serve to guide the implementation of strategic indicators in operational benchmarks using its Criterion for Processes. Subsequent analysis of the causes of deviation in the Indicators for Results in relation to goals would be carried out by using the Agent criteria included in this model.

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CHAPTER FIFTEEN

ISO 9000: Observations on its first twenty years

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Introduction

In 1987 the International Organization for Standardization published a management standard (ISO 9001) which in terms of its influence on management *practice* across the world is arguably the most influential seven pages of management literature ever written.¹ While the latest information indicates that in excess of 800,000 organizations have been *certified* to ISO 9001: 2000, sales of the standard suggest that as many as five times that number may have applied the standard without taking the step to certification. If that is the case, as many as five hundred million employees throughout the world have had contact with, been influenced by, or had their work environment shaped by the ISO 9000 family of standards.²

¹ After two revisions (1994 and 2000), ISO 9001 is now considerably longer than the seven pages of the 1987 issue. The current version of the standard is ISO 9001: 2000 ["Quality management systems- Requirements"].

² Currently, the "ISO 9000 family" is comprised of ISO 9001: 2000 and a number of other related standards, for example ISO 9000: 2005 ["Quality management systems- Fundamentals and Vocabulary"] and ISO 9004: 2000 ["Quality management systems- Guidelines for performance improvements"].

In this paper, which is discursive and exploratory rather than analytic, the authors identify a paradox that offers an explanation of why this remarkable standard has, in terms of its reach, exceeded even the wildest expectations of its developers, but has not in those twenty years been able to achieve its overarching (albeit implicit until the 2000 revision of ISO 9004) objective to build a bridge between an effective quality management system and organization excellence.³

ISO 9000 has had an unprecedented impact on management *practice* in every corner of the world, yet it has had little or no impact on management *thought*.⁴ Or to look at that issue from another angle, ISO 9000 (which was always intended to be much more than ISO 9001) was constructed in 1987 and through two revisions (1994 and 2000 and is undergoing a third revision now) without access to leading-edge management research literature.⁵ The experts that comprise ISO Technical Committee 176 (Quality

³ Each of the authors has had an association with almost every aspect of ISO 9000 over much of its twenty year history. Ross Wraight was CEO of Standards Australia 1997 – 2004 in which time he was ISO Vice President (Policy) and Chairman of the Technical Management Board. Stanislav Karapetrovic has worked on the various applications of ISO 9001 since 1993. He has also been involved in the development of supporting quality management and assurance standards and related documents in Canada and internationally. Most recently, he has served as an International Liaison Expert for the customer satisfaction standards related to codes and complaints (ISO 10001, ISO 10002 and ISO 10003) and quality fundamentals and vocabulary (ISO/TC176/SC3/WG10/12/13-SC1), and as an International Expert on the ISO Technical Management Board Task Force for the Integrated Use of Management System Standards. Kevin Foley commenced his association with ISO 9000 when in 1987, as Chairman of the Australian government *Committee of Review of Standards and Accreditation and Quality Control and Assurance*, he recommended Australia should replace its national quality management standard [AS 1823] with ISO 9000. As a Member of the Board of Standards Australia (1989 - 2003) and its wholly owned certification/registrars subsidiary, Quality Assurance Services he has been intimately involved in the application of ISO 9000 into the Australian economy. Since 1998 he has been an Australian delegate to ISO TC 176 and has served on committees that have produced ISO 19011 and ISO 10014 and is a member of the Task Group currently revising ISO 9004: 2000. He was a member of the ISO Technical Management Board Task Force that recently completed an ISO Handbook: *Integrated Use of Management System Standards*.

⁴ Some may wish to argue that when considering the impact of ISO 9001 on management thought it would be more pertinent to refer to the impact of quality management, since ISO 9001 is based on the principles of quality management - ISO 9001 uses the same management principles as the 1951 Deming Prize, TQM and the Baldrige and EFQM Quality/Excellence models. While that argument may be valid the answer is the same – quality management had significant impact on management practice but also had little to no impact on management thought – quality management was developed outside mainstream management thought (Foley, Clegg and Castles, 2005).

⁵ On this issue, it is necessary to make clear that these comments are not a reflection on the competence of members of Task Group 1.20 which is the designation of the ISO 9004 revision group. The point is that in this case ISO has failed to appreciate (yet again – assisted on this occasion perhaps by ISO 9004 and ISO 9001 being designed as a “consistent pair”) that ISO 9004 is very different from ISO 9001 (at least in its

Management and Quality Assurance) have been, and are today, predominantly quality technicians, quality managers, quality management consultants, quality auditors and standards writers – a group that proved adept at producing ISO 9001 but unable to do the same for ISO 9004.⁶ In respect to the latter outcome, the guilt is equally distributed between the Members of ISO (the national standards bodies) for not ensuring that leading edge management scholars were in their TC 176 mirror committees; ISO for not identifying this deficiency and acting to correct it; and management scholars for failing to appreciate that an obscure Geneva-based organization (which we suspect is not known to most management scholars) was changing the management landscape and that an unidentified small group of quality experts had written a management guidance document that would have an influence far beyond that of any paper or book that would be written by a management scholar.

The object of this paper is to point to the paradox that, on the one hand, ISO 9000 has had an unprecedented (and yet to be thoroughly analyzed) impact on management *practice* and, on the other, it has had little or no impact on management *thought*.⁷ Or, conversely, and more pertinently considering our subject matter, mainstream management thought has had little or no impact on ISO 9000. This issue, which we believe has impeded (and will continue to impede) achievement of the initial (prescient) ISO 9000: 1987 objective (which changed significantly in the 2000 revision) raises the wider matter (which we do not discuss) of a major gap in mainstream management literature and how the failure of management scholars to give attention to ISO 9000 has left management thought less rich

2000 version) and the traditional approach to forming a revision committee will not (and has not) produced the *range* of expertise necessary to effectively address what is a higher level management issue than that dealt with by ISO 9001. Put differently, success with this latest attempt to produce an effective ISO 9004 will depend on adding to, not detracting from, the high and highly relevant expertise *that already exists* in TG 1.20.

⁶ This is particularly true of the 2000 version which changed ISO 9004 from providing assistance to organizations in the implementation of an ISO 9001, 9002 or 9003 standard to that of a guideline for performance improvement (Boys, et al., 2004]. ISO 9001 and ISO 9004 were written by different committees drawn from the same skill group.

⁷ Some may wish to argue that when considering the impact of ISO 9000 on management thought it would be more pertinent to refer to the impact of quality management, since ISO 9000 is based on the principles of quality management - ISO 9000 uses the same management principles as the 1951 Deming Prize, TQM and the Baldrige and EFQM Quality/Excellence models. While that argument may be valid the answer is the same – quality management had significant impact on management practice but also had little to no impact on management thought – quality management was developed outside mainstream management thought.

and relevant than it might otherwise be. Most importantly the paradox sheds light on characteristics of ISO 9000 that have troubled the authors for some time and for which thus far there has been no satisfactory explanation. Prominent among those concerns are:

- The apparently unquestioning acceptance of quality management as the management model to support ISO 9000 when before 1987 there was evidence in the *management literature* that quality management had no explicit theory (and hence a multitude of descriptions each with equal claim to being definitive), little empirical support and was seen to be failing in a number of applications. Given the hyperbole surrounding the quality management model in the early to mid-1980s, it is perhaps not surprising that ISO TC 176 believed that by adopting a management model credited (erroneously) with the Phoenix-like rise of Japanese industry from the ashes of World War II they had placed the writing of ISO 9000 on an unarguably sound foundation. This paper will argue that ISO found itself not with a Phoenix (although the explosive success of ISO 9001 would suggest it had) but rather a bird of a different kind: an Albatross.⁸
- The extraordinary market success of one component of ISO 9000 (ISO 9001) and the equally extraordinary market failure of two distinctly different variants of another – ISO 9004: 1987 and ISO 9004: 2000.⁹

⁸ A number of writers have used the Phoenix legend as a metaphor for the post war renaissance of Japanese industry. The Albatross referred to here is taken from Samuel Taylor Coleridge's poem, *The Rime of the Ancient Mariner* (1798). In the poem an albatross starts to follow a ship, and is seen as a good omen. When the mariner shoots the albatross his shipmates make him wear it around his neck as penance – it is an encumbrance or wearisome burden.

⁹ No conclusion is drawn in this paper on the reasons for the failure of the 1987 and 1994 versions of ISO 9004. In those cases the reason for lack of market success seems to have less to do with the expertise of the revision committees and management thought and more with the fact that ISO 9001 was the auditable component and many of the certification/registrar organizations established to conduct ISO 9001 audits (which became very profitable) were wholly owned by national standards organizations. As the extract from Foley, Clegg and Castles (2005) suggests, Standards Australia provides an interesting example of the influence of ISO 9001 on the fortunes of a national standards organization:

The decision by Standards Australia to adopt ISO 9000 and to establish a wholly owned subsidiary (Quality Assurance Services) to conduct ISO 9001 audits gave Standards Australia its first major on-going source of non-government revenue and commenced the transformation from an under resourced, largely mendicant organization to one of the world's wealthiest standards writing organizations. When ISO 9000 was adopted Standards Australia was in cramped rented premises and financially fragile - relying heavily on a government grant, and waiting for the next edition of the Electrical Wiring Rules Standard (AS 3000) for sufficient funds to carry on. Without any *major* change since 1987, other than the adoption of ISO 9000, Standards Australia today owns a high-rise building in the Sydney CBD and offices in other

- After twenty years of application to all forms of organizations in all parts of the world there is no definitive history of what is the most influential management standard ever written.
- Despite several revision opportunities, ISO 9000 continues to reflect, in its language and assumptions, a society and economy that has essentially disappeared. The knowledge society and organization context of today (and 2000 when ISO 9000 was last revised) is fundamentally different from that of the manufacturing society of the 1980s in which quality management was developed and ISO 9000: 1987 was written.
- Persistence with the use of “principles” that are either impossible to achieve (continual improvement) or must be qualified (objective measurement) as the focus on quality has moved from the shop floor and machine processes to management of a sub-system and the organization management system.

While many would suggest that the practice/thought paradox view of ISO 9000 is a figment of the authors’ imagination and as evidence point to the hundreds of books, pamphlets etc., that have been written on ISO 9001 and the now considerable number of international journals dedicated to quality management that report the majority of the now considerable empirical research on ISO 9001 to support that view, we point to those same books and journals and the research contained in them as evidence of the paradox. For instance, few, if any, of those books and journals are part of *mainstream* management literature - as an examination of the leading refereed management journals will readily attest.¹⁰ Furthermore, those books and journals, however excellent they may be, deal almost exclusively with only one component of the ISO 9000 family of standards - ISO

cities, operates from a much reduced government grant and has a capital worth that places it among the best resourced non-government standards organizations in the world.

¹⁰ Again it is necessary to pause and qualify. It is not our position that ISO 9001 and its ancillary standards have seldom been dealt with anywhere (our references give the lie to that interpretation) or that ISO 9001 has never been discussed in leading edge refereed management journals. Our point is that the books and research papers and the occasions those papers have appeared in leading edge management journals are too few to have had an impact on management thought. Of course there are some (perhaps ISO itself) who would say, So what! Hopefully, this paper will demonstrate, via discussion of deficiencies in the management model on which ISO 9000 is based and the 2000 version of ISO 9004, that attempts to write any *management* guidance document (however great the practical expertise of the writers) without the benefit of research (in both theory and practice) and familiarity with contemporary management thought will not produce the desired results and is an unreasonable request of *technical* experts.

9001; rarely, and then usually in passing, is there reference to the many standards that are ancillary to ISO 9000, or to ISO 9004 which in ISO 9000: 2000 is explicitly linked with ISO 9001, i.e., ISO 9001 and ISO 9004 are a “consistent pair”. Though the reasons why management scholars have not been attracted to ISO 9000 research (and management system standards research in general), *and membership in ISO committees*, are many and varied a significant reason can be found in university policy: Most universities and university research funding bodies either do not consider those activities at all when evaluating academic performance, or give them such a low weighting that such research can be detrimental to academic advancement. One outcome of that widespread, if not universal, university policy is that ISO 9000 research is biased toward that which can be published in the less highly regarded journals, can be done relatively quickly and without the need to acquire new knowledge, e.g., the application of statistical techniques to survey data.¹¹ Another research fund-related reason why management scholars have not been attracted to management system standards research is that the now very substantial training, consulting and auditing industry that has been built on those standards does not have a research orientation and as a consequence spends only the most miniscule proportion of its revenues on independent academic research.

With the practice/thought paradox identified, and after a brief (and thus far wholly inadequate) history of ISO 9000, the paper shifts to a discussion of the way in which the failure of ISO 9000 to draw on mainstream management thought has impeded, *and will continue to impede*, achievement of the goals ISO has set for this standard. That discussion is augmented by comment on two recent ISO initiatives - the revision of ISO 9004: 2000 and the production of *A Handbook on the Integrated Use of Management System Standards* (IUMSS).¹² In regard to those initiatives we argue that each would

¹¹ There is more than a hint of Catch 22 in this situation. Funding agencies will not fund research or support the applications of those who have not published in mainstream management journals and researchers cannot get funds sufficient to allow them the time and effort to write papers that will be accepted by mainstream journals. Moreover, since ISO 9000 research does not appear in those mainstream journals it is not, *ipso facto*, an important management issue and therefore several weeks attendance per year to ISO TC 176 (in such exotic places as Cartagena, Paris, Cancun and Acapulco) is viewed more a matter of recreation than research activity.

¹² Stanislav Karapetrovic and Kevin Foley were members of the IUMSS Task Force and Kevin Foley is a member of the ISO 9004 revision Task Group 1.20. The IUMSS Task force was unusual in that had access to mainstream management thought via two of the authors of this paper.

have been much less urgent and certainly much less difficult to accomplish if ISO 9000 (and its revisions) were written with a full knowledge of contemporary management thought, i.e., those committees had access to leading edge management thought and that access were evidenced by a membership that included management scholars.

ISO 9000: Yet another too-brief and possibly inaccurate history

In a paper presented to the fifth meeting of the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) Foley, Hensler and Jonker (2007, pp. 2-4) drew attention to the influential, and to date largely unreported, role that standards have played in the history of quality management and its derivatives, quality assurance and organization excellence. Describing management standards more widely than has been usual in management literature they remarked:

The social and economic importance of standardization, especially as expressed through the profound nature of the impact of quality management on organizations across the world over the last several decades, (and the use of a standards format as a principal means of promoting that management idea), has been significant in the past twenty-five years. Thus, it is pertinent to revisit the foundation years of the quality management phenomenon and examine how that unusual relationship developed, and how it influenced the way in which quality management was understood, variably received by different audiences, and how it was used. ...

Among the many remarkable although least discussed features of quality management,, perhaps the feature that best explains both its explosive rise and precipitous fall has been the role played by standards. The foundations of quality management can be said to rest on *three* sets of documents that were written and promoted as standards in the late 1980s and early 1990s – each constructed at about the same time on different continents, by three different groups, using different approaches (and language) to describe and promote the same management methodology. Those different standards were:

1. Books by Crosby, Deming and Juran – each promoting their own book, and its summary “points”, “steps” and “principles” as *the* standard
2. The ISO 9000 family of standards
3. The Quality Award or Business Excellence Models

In addition to being written by three different groups each quality management standard (or set of standards) was directed to a different audience. The management book-writing entrepreneurs directed their works to middle and upper levels of US business. The Quality/Excellence standards were written specifically for top management, while the ISO 9001 component of ISO 9000 was directed at mid-level management. One consequence of the widespread adoption of ISO 9001, and its focus on quality managers (indeed, the creation of the standard fuelled the growth in titles of managers occupying that position), was that the power of quality management to transform organizations was diluted, as it became institutionalized as a function of mid-level management. In addition to directing their “standards” to different audiences, each group of promoters described quality management differently. For the entrepreneurs it was first quality control then quality management and finally TQM, while the quality language of ISO and the Quality/Excellence organizations was that of quality assurance and business excellence respectively.

While the standards format has been the characteristic way of presenting quality management, and the antecedents of quality assurance/management standards can be

found in the product standards that guided the building of the Egyptian pyramids (and indeed before that), it is in the product assurance standards of World War II that the main features of the quality management standard as we know it today can be identified. However, the ideology that was to guide the writing of ISO 9000 and the management “principles” on which it was based has a much earlier origin in the literature of quality control and quality management. Moreover, several of those prominent in the development of wartime product quality standards, notably Milton Friedman, C. West Churchman, W. Edwards Deming, Joseph Juran and Harold Hotelling, were to play a major role in the development (and promotion in the case of Deming and Juran) of quality management; hereafter referred to as TQM.¹³

The most convenient (but perhaps not the correct) year in which to start an examination of the history of ISO 9000 is 1946, coincidentally the year of the formation of ISO, the Union of Japanese Scientists and Engineers (JUSE), the North Atlantic Treaty Organization (NATO) and the American Society for Quality Control. Seeking to harmonize the activities of cooperating military forces, NATO borrowed from US military Z standards (Z1.1, Z1.2, Z1.3, etc.,) to create the Allied Forces Quality Assurance Plans (AQAP). The various standards contained in that management plan were consolidated and revised between 1951 and 1973 as DefStans (Defense Standards) 05-08, 05-21, 05-24, and 05-28.

In one of the more recent descriptions of the history of ISO 9000, Poksińska [2006:20-21] has reported:

¹³ Despite the role of Friedman, Churchman, Deming, Hotelling and Juran in the development of military standards and TQM (both Deming and Juran vehemently rejected referring to quality management as TQM) there is no record of them having played a role in the development of ISO 9000. One aspect of the history of ISO 9000 that is yet to be written is that explaining why those who were prominent in the development of military standards, and in the example of Deming and Juran also developed the management model that underpins ISO 9000, were not involved in the writing of that standard. Did they not know about ISO (unlikely); did they know about and were invited to join the US delegation to the 1980 Ottawa meeting but were too busy becoming internationally recognized consultants and authors (unlikely in the case of Deming because at the time of the Ottawa meeting Deming had not been “discovered”. Deming was unknown in the USA except in the field of statistics until he was interviewed on the NBC television program “If Japan Can ... Why Can't We” in June 1980); or were the quality management and standards writing authorities in the US isolated from each other in much the same way that quality management was isolated from mainstream management thought.

During the 1960s and 1970s, the idea of using quality standards to assure quality in production processes spread to other industries like nuclear power plants or aerospace. Several national standards organizations began to develop their own standards for quality systems. In 1977 the National Standards Institute of Germany (DIN) made a proposal to ISO to develop an international standard for quality assurance. After some discussions primarily involving the national standardization organizations from Germany, Canada, France and UK the TC176 committee was established. The first meeting of TC176 was held in Ottawa in 1980. The purpose of the committee was to develop an international standard for quality assurance (Tamm Hallström, 2000).

In 1987, after eight years of work and rework, the ISO 9000 series of standards were released. These standards consisted of five primary documents, as follows:

- ISO 9000-1:1987 Quality management and quality assurance standards -Guidelines for selection and use
- ISO 9001:1987 Quality systems - Model for quality assurance in design, development, production, installation and servicing
- ISO 9002:1987 Quality systems - Model for quality assurance in production, installation and servicing
- ISO 9003:1987 Quality systems - Model for quality assurance in final inspection and test
- ISO 9004-1:1987 Quality Management and quality system elements - Guidelines.

ISO 9002 and ISO 9003 are the reduced versions of ISO 9001. ISO 9002 does not include the QMS requirements for the design function and ISO 9003 includes only requirements for final inspection and test. The first revision was published in 1994, but it included only minor changes related to corrections and clarifications of unclear terms. The requirements were however not changed (Harrington and Mathers, 1997).

In early 2000, the draft of the proposed next revision to ISO 9000 began its circulation through the quality community. It was greeted with mixed reactions because it was a total rewrite of the 1994 version. Before the standard was revised, extensive surveys have been performed to understand the needs of all users of the quality management system standards.

Feedback was received from 1100 users and more than 80% wanted the new standard to:

- Employ a process management approach
- Be compatible with other management systems (e.g., ISO 14000)
- Include requirements for continuous improvement of the quality system
- Focus more on stakeholders' needs (e.g., customers, suppliers, employees)
- Be user and customer friendly

The new revision took also into account the latest developments and trends within quality management. The new system is claimed to be more in accordance with TQM principles and quality excellence models (EFQM; Baldrige Award; Russell, 2000; Laszlo, 2000).

Since its 2000 revision, ISO 9000 has continued to extend its reach, stimulate ancillary standards (e.g., ISO 19011: 2002; ISO 10002: 2004; ISO 10001: 2007; ISO 10003: 2007;

ISO 10014: 2007), other management system standards - notably ISO 14001, OHSAS 18001 and SA 8000 and industry-specific variations of ISO 9001 such as ISO/TS 16949. It is another of the many ironies of quality management that at a time when TQM has almost disappeared from the management aid landscape, and Quality/Excellence models are beginning to show strains, ISO 9000 (once disparaged and regarded as the poor relation of TQM) is experiencing unprecedented growth.¹⁴

The great divide: ISO 9000 and mainstream management thought

Despite its extraordinary success, ISO 9001 has received little public and much less scholarly attention than its impact on management practice would warrant. Furthermore, as mentioned, despite being used in every size and form of organization *throughout the world* for two decades, creating a new multi-billion dollar industry, two new job classifications (the quality manager and the quality auditor), and shaping the work environment of hundreds of millions, ISO 9000 lacks a definitive history – the snippets of history that do exist vary from writer to writer, are tantalizingly brief, are usually self-serving and gives the reader no sense of the resource material used, issues addressed, arguments used or the people involved. The equally remarkable failure of ISO 9004, which in the 2000 revision was offered as a means of linking ISO 9001 to the wider management system of the organization, has also received far less attention than could be expected of a standard whose market failure thwarted a principal ISO 9000 objective by inhibiting consideration of ISO 9000 beyond that of ISO 9001 and restricting the use of ISO 9001 to that of a tool for the quality manager.

That is not to say, however, that the conception of a management standard to guide the application of ISO 9001 and later to provide a bridge from a sub-system of management to the organization-wide system and *organization* improvement were ill conceived. Quite the contrary: the perception of those organization needs on the part of ISO and its Technical Committee 176 experts, both in 1987 and 2000 showed extraordinary

¹⁴ The organization responsible for the once high profile Australian Quality/Business Excellence model, which had been established in 1987, went into liquidation in 2001 and the rights to the management model (now the Australian Business Excellence Framework) was acquired by Standards Australia and subsequently transferred to SAI-Global.

foresight. Unfortunately, in the latter case, ISO's reach exceeded its grasp: ISO 9004:2000 proved to be "a bridge too far" (to borrow from Cornelius Ryan's book on the abortive Allied airborne invasion of German occupied Holland in World War II) and as Wilcock et al. [2006] have suggested, the current revision of ISO 9004:2000 may also fail. All of which raises the question: How, on the one hand, could an organization (ISO) with the foresight and skill to produce a standard (ISO 9001) for assessing management system effectiveness that is the most widely used management standard ever written, not, a) recognize that the quality management model used to develop that standard was flawed (more an Albatross than a Phoenix) and b), attract similar market attention with standards designed to facilitate the application of ISO 9001 (ISO 9004:1987 and ISO 9004:1994) and describe a pathway from quality management to organization excellence – ISO 9004:2000? ¹⁵

Quality management: Phoenix or Albatross?

As mentioned above, this paper suggests that the search for an answer to those questions begins with the understanding that designing or identifying an appropriate management model on which to base a management system standard and linking that standard to *organization* excellence is a *significantly* different task (not necessarily more difficult for those with the expertise – but certainly different) from that of writing a management system standard (ISO 9001- for which templates already existed) and that in the former case the ISO 9004 revision committee simply did not have the necessary knowledge. Put differently, ISO mistakenly assumed that the tasks of selecting a management model, writing a management system standard and writing a standard to link ISO 9001 to organization improvement were either not at all different, or if those tasks were different the difference was not so great that the knowledge base used to write ISO 9001 could not also be used to write ISO 9004.

Looking at ISO 9000 from the perspective of the practice/thought paradox, it seems clear that adoption of a flawed management model in 1987 and a failure to successfully build a

¹⁵ See Messner, Clegg and Kornberger (*Journal of Management Enquiry*, forthcoming) for reference to Foucault's (1995: 184) discussion of the "power of the Norm" and the dangers when norms are not subjected to critical reflection.

bridge from ISO 9001 to organization improvement in 2000 can be attributed to the 1980 ISO assumption that the ISO 9000 objective could be achieved by a committee rich in experience with quality practice and standards writing. Given the objective of ISO 9000:1987, there was no obvious need to include in the committee those with top management experience because the standard was focused on quality managers not top management. Also there was no obvious need to seek the inclusion of those with access to mainstream management thought and literature because the quality management model, with which the quality and standards writing experts were familiar, was believed to be at the leading edge of management thought and practice.

Unfortunately, what neither ISO nor the expert committee members appreciated, because they were not familiar with mainstream management thought (or had not looked critically at the quality model) was that quality management was *not* at the forefront of management thought, indeed it had been developed *outside* mainstream management thought and away from scholarly scrutiny, and furthermore the little attention it was getting from management scholars was not supportive of the descriptions of quality management in the popular press and quality magazines.

Although it could not be readily identified in 1987, and did not really manifest itself until a new objective was set for ISO 9004 in the 2000 revision, the underlying problem of ISO 9000 in 1987 (and remains so today) is the quality model itself. Because the ISO 9000: 1987 writing committee either had no knowledge of the scholarly criticism of the quality model, or knew and chose to ignore, the quality model *was not given a critical examination*, and while ISO might be excused for taking that decision by the circumstances of 1980-1987, no such excuse is available for 2000.

As Schaffer and Thomson (1991: 191-192) observed, concerns about quality management were appearing in the management literature, trade journals and magazines during the period in which ISO 9000:2000 was being written (Brown, 1993; Easton, 1993; Eskildsen, 1994; Grant, 1995; Hackman and Wageman, 1995; Cole, 1998,1999a and 1999b; Hermel, 1989 and 1998; Reed, et al., 1996; Waddock and Graves, 1997; Van

der Wiele, 1998; De Cock, 1998):

In 1988, for example, one of the largest U.S. financial institutions committed itself to a “total quality” program to improve operational performance and win customer loyalty. The company trained hundreds of people and communicated the program’s intent to thousands more. At the end of two years of costly effort, the program’s consultants summarized progress: “Forty-eight teams up and running. Two completed Quality Improvement Stories. Morale of employees regarding the process is very positive to date.” They did not report any bottom-line performance improvements – because there were none.

The executive vice president of a large mineral-extracting corporation described the results of his company’s three-year-old total quality program by stating, “We have accomplished about 50% of our training goals and about 50% of our employee participation goals but only about 5% of our results goals.” And he considered those results meritorious.

These are not isolated examples. In a 1991 survey of more than 300 electronics companies, sponsored by the American Electronics Association, 73% of the companies reported having a total quality program under way; but of these, 63% had failed to improve quality defects by even as much as 10%. We believe this survey understates the magnitude of the failure of activity-centered programs not only in the quality-conscious electronics industry but across all businesses.

As we shall see later, the most conclusive proof that the quality model was in trouble *and* that there was a disconnect between the ISO 9000:2000 writing committee and management thought is to be found in the 1994 Spring special issue (on quality management) of the *Academy of Management Journal*.

Continual improvement and objective measurement

“Continual or continuous” improvement is perhaps the most distinguishing and oft referred to feature of quality management (and ISO 9000), however, if taken literally (as is very often the situation with expressions in a standard – particularly a requirements standard such as ISO 9001) it represents management guidance of the worst kind. In addition to being impossible to achieve, except for some machine processes, it is an incorrect translation of “kaizen”. The Japanese word “kaizen” consists of the symbols “kai” meaning “to change” and “zen” which means “good”. Together this means “changing for the better” or making those changes that add value to the organization (Bergman and Klefsjö, 2003). Organizations can continuously (or nearly so) engage with and monitor their environment to identify changes that would improve some aspect of their operation. However, as kaizen (but not the ISO 9000 interpretation of it) would suggest, the organization acts *only* upon those (“good”) improvements that would add value *to the organization*.

The ISO 9000 “management by fact” principle is another relic of the earliest, quality control, days of the quality movement that should have been tempered by the readily observable management reality that as decisions move further away from the “shop floor,” and machine processes there are fewer “facts” in the sense of objective information. To suggest that strategic decisions (ISO 9000 identifies adoption of a quality management system as a strategic decision) should be based on fact is to misunderstand the nature of strategic or sub-system-level decisions, and ignore the reality that decisions at those levels are characterized by the lack of, rather than the presence of, “hard” or objective data.

It seems most unlikely that these features of ISO 9000 would not have been qualified in some way (a note which is commonly used in ISO documents would have sufficed), even as early as 1987, were there not a disconnect between the ISO 9000 writing committee and leading edge management literature.

Interested parties and stakeholders

During the period of the 1980s, quality management was in the ascendant and by the late 1980s had achieved the status of a panacea and its principal promoters (Crosby, Deming and Juran) had become management gurus with large international followings. In an increasing number of markets customers were emerging as stakeholders whose wants and expectations could not be ignored, and quality management, which focused on the customer, was being seen as the basis for the extraordinary success of Japanese products in US markets - a half-truth at best, as we now know. Notwithstanding that popular image, by 1987 criticisms of quality management were beginning to emerge and the management literature contained a growing emphasis on stakeholder management, systems management, social responsibility, the importance of social capital and knowledge and many other issues that ISO 9000 (most often implicitly) addressed (Penrose, 1959; Mesarovic, et al., 1970; Freeman, 1984; Clarkson, 1994 and 1995; Stewart, 1997; Albert and Bradley, 1997; Alee, 1997; Argandona, 1998; Nahapiet and Ghoshal, 1998).

Reflecting the times in which it was first developed, rather than the issues being discussed in the management journals, ISO 9000 has continued with a competitor focus. The competitor perspective (albeit implicit), or the acceptance of competitors as the *primary* focus of business activity (via the customer and quality of product) has become less relevant as organizations have increasingly found themselves needing to identify, engage and satisfy the wants and expectations of a number stakeholders each with different, competing and often conflicting demands. In these changed and changing circumstances, organizations are discovering that it is a stakeholder, rather than a competitor perspective that offers the better guidance. The stakeholder perspective promotes/demands of the organization a *positive* attitude, i.e., the organization psychology can be described as *satisfying*, rather than the negative, *denying/thwarting/blocking*, which is the psychology of an organization that looks out from its aim and sees not stakeholders but competitors. In addition to engendering a negative psychology, and obscuring stakeholders (and their dynamic relationship), the quality/customer focused competitor perspective suffers the difficulty that a quality first strategy is not always best, customers are not always stakeholders and the traditional notion of competition has, in many cases, given way to cooperation and collaboration.¹⁶

With its adherence to a competitive perspective and a failure to distinguish between stakeholders and interested parties, the year 2000 version of ISO 9000 is out of step with organizational reality. Again, this is difficult to understand unless the disconnection between ISO TC 176 and mainstream management thought were essentially complete. If there were no such disconnect, it seems most unlikely that a standards writing committee with access to that literature (and an awareness that quality management had failed to meet expectations in a large number of organizations) could have accepted without

¹⁶ While the stakeholder perspective has the advantage of focusing on a number of issues that are either obscured or ignored by other perspectives, it does have the disadvantage of obscuring the importance and pervasive nature of technology. Technology is one of the defining features of contemporary society, and in all its forms is an integral element of organization activity and the organization environment. Technology is a defining characteristic of organizations and the organization environment, and is the means by which the organization both identifies and responds to its environment. Technology is not a stakeholder, and therefore does not define a strategic imperative - it is a *means* adopted by the organization to satisfy the strategic imperatives created by stakeholders.

qualification the quality management notion that *organization* success could be achieved by maximizing the satisfaction of only *one* of the entities that create organization wealth (the customer) and that this strategy was appropriate to all organizations at all stages of their development. It is equally difficult to believe that a committee with knowledge of mainstream management thought would not have qualified the notion of interested parties and referred to the sub-set of interested parties whose wants and expectations describe the organizations strategic imperatives as stakeholders, after Freeman (1984).

The notion of "interested parties" that provide context and focus for ISO 9004:2000 persists in the face of it being evident from the earliest days of stakeholder models of the organization that it is too nebulous to guide management action. For many organizations, interested/affected parties number in the hundreds of thousands, even millions (possibly billions in the case of a Microsoft or Google) and the organization is not able to identify more than a small fraction of that number - *nor does it need to do so*. While the notion of interested/affected parties makes an important contribution to understanding the context of organization activity, it is unable to inform or guide management *action*. To be *operationally useful* in its post 2000 role, ISO 9004 has needed to offer guidance on how organizations can separate the few entities (stakeholders) that must be addressed in order to achieve the organization aim from the myriad of issues or interested/affected parties that constitute its environment - *ISO 9004:2000 does not do that*.¹⁷

Similarly it is difficult to appreciate how a committee informed by contemporary management thought could have believed that the quality model used for ISO 9001 (which is *not* stakeholder based) would serve to satisfy *all* stakeholders and thereby improve the organization as a whole. Not surprisingly it is this very issue that is proving to be an impasse with the present revision of ISO 9004:2000. In the revision group, there are those who believe that because the brief of TC 176 is quality, any attempt to offer advice on how to make improvements to non-quality aspects of the organization must be based on a quality model of the organization - some would believe that to be possible

¹⁷ That is not to say this *cannot* be done. Indeed, Foley, Hensler and Jonker [2007] have described how a stakeholder model of management can *generate* a theory of quality management that explicitly links the quality management system to organization excellence.

while others believe it simply must be that way in order for the standard to be written by TC 176. There is another group that would retain the importance of quality, but see it in the context of a stakeholder rather than a quality management model of the organization. Yet another group wishes to see the standard return to its 1987 objective as guidance for implementing ISO 9001. Crisscrossing those different perspectives is the question of whether the standard should be strategic and aimed at CEOs and Boards of Management or operational and focused on lower levels of management. Which approach will prevail is yet to be resolved.

ISO 9000 and the knowledge economy

ISO 9000: 1987 was conceived in a world that was manufacturing-based and was written specifically for the manufacturing organization. The world has so changed in the last several decades that it is no longer feasible to discuss the management of organizations, especially the business form, without recognizing that the economy has shifted to a situation where organizations are knowledge-based and operate in a world of process and pattern change; dynamics not statics, evolution rather than equilibrium, and of probability and chance events - features that are nowhere more in evidence than in high technology industries. As this shift has taken place, the mechanisms that determine economic behavior have shifted from diminishing to *increasing* returns. Unlike the relatively well defined diminishing returns markets that characterized the first and much of the second generation of quality management, increasing returns markets are not so well defined and organizations are unable to optimize in the traditional sense. As Arthur (1996) has commented, "You can be smart. You can be cunning. You can position. You can observe ... [but you] cannot optimize. What you can do is adapt". In that environment, where success is cumulative and self-reinforcing, the ability to adapt moves from being an important feature of the sustainable organization to that of a strategic imperative. Increasing returns, as Arthur (ibid.) has described them, are:

... the tendency for that which is ahead to get farther ahead, for that which loses advantage to lose further advantage. They are mechanisms of positive feedback that operate – within markets, businesses and industries – to reinforce that which gains success or aggravate that which suffers loss. Increasing returns generate not equilibrium but instability – one of many competing in a market – gets ahead by chance or clever strategy, increasing returns can magnify this advantage, and the product or company or technology can go on to lock in the market. More than causing products to become standards, increasing returns cause businesses to work differently, and they stand many of our notions of how the organization operates on

their head. Mechanisms of increasing returns exist alongside those of diminishing returns in all industries. But roughly speaking, diminishing returns hold sway in the traditional part of the economy – the processing industries. Increasing returns reign in the newer part – the knowledge-based industries. Modern economies have therefore become divided into two interrelated, intertwined parts – two worlds of the organization – corresponding to the two types of returns. *The two worlds have different economies. They differ in behavior, style, and culture. They call for different management techniques, different strategies, different codes of government regulation* (emphasis added).

The general understanding of how markets and organizations operate was established more than a century ago. That understanding is based upon the assumption of diminishing returns: products or companies that get ahead in a market eventually run into limitations, so that a predictable equilibrium of prices and market shares is reached. The theory was generally valid for the industries that characterized the industrial revolution in Europe and the USA. However, the twentieth century, particularly the last quarter, experienced an inexorable, but not always either recognized or understood, transformation from processing physical resources to processing information - from the application of raw energy to the application of ideas. There is no reflection of these changes in the 2000 revision of ISO 9000.

Since its 2000 revision, ISO 9004:2000 purports to take the organization *beyond* the quality management system improvements of ISO 9001 and provide guidance for organization wide improvement. However, because ISO 9004 relies on the principles of *quality* management (or rather eight that have been appropriated by ISO as such) and the implication that quality is fundamental to the success of any organization (despite quality being one of many issues the organization must address in order to be successful) it is far from clear how the standard is able to achieve its organization improvement objective. The assumption of the universal applicability of the “quality first” strategy and reliance on the applicability of the eight quality management principles leaves ISO 9004 unable to offer *useful* guidance to organizations that experience increasing returns (where quality may be important but is not the guiding strategy), or do not identify the customer as a stakeholder. Given the now large number of knowledge-based organizations that experience increasing returns and the many of those (and other) organizations that are guided by strategies other than quality (e.g., innovation) the applicability of ISO 9004 is constrained, to say the least. Paradoxically, as we have argued, ISO 9004 is constrained

in its application *because* of its quality management features – ISO 9004:2000 “is hoist with its own petard”.

Management systems

The comments of Schaffer and Thomson referred to earlier, and many similar comments in that period, are at variance with an unquestioning acceptance of the quality management model (and its assertion that the quality strategy was not only appropriate for all organizations but also the continuous improvement of quality leads to organization success) and the writing of ISO 9000 as if it were the only management system standard necessary to achieve that success – of course it *was* the first international management system standard. Leaving aside the issue of the quality model not being appropriate to all organizations (and being seen to fail and increasingly criticized) and the existence of stakeholders other than customers (who for many organizations in 1987 and even 2000 were *not* stakeholders) the suggestion, implicit in ISO 9001, that organizations had only one sub-system of management (the quality management system) that really mattered would surely have rung alarm bells for anyone with an understanding of how *organizations* (not departments or sub-systems) are managed, or the slightest familiarity with management literature.

The view that either the quality management system (QMS) was the only important management sub-system, or it was much more important than any other and therefore ISO 9001 could be written without any consideration as to how it might relate to other management sub-systems, or the organization management system itself (because the QMS was seen as the *de facto* organization management system), is one of the more readily identified consequences of accepting the assumptions of the quality management model.¹⁸

¹⁸ An organization may have many management sub-systems and many integrated activities (e.g., integrated assessments/audits), but it has only one management *system*. The essential features of that system are defined by the organization’s strategic imperatives, which, in turn are reflected by strategic *processes*. Those processes are identified and acted upon contemporaneously – or effectively so. To describe that system as integrated, and the act of managing those strategic processes as “integrated management” (as is often done) reflects a misunderstanding of the nature of systems – integration (simultaneous identification/consideration) of the components of a system is encompassed by the

Once again there was ample evidence in the management literature in 1987 (and long before that) to identify the organization as a system comprising sub-systems, processes, activities etc. to ensure that ISO 9000 would be written in a system context. At that time management scholars had no difficulty identifying the organization as a system; the debate was about what type of system, mechanical, biological, social, etc. While the ISO 9004:2000 revision committee recognized the fallacy of ignoring the system nature of the organization, it did not *explicitly* identify quality as *one of many* management *sub* systems; indeed it continued the erroneous and misleading ISO 9000:1987 approach of referring to quality as a management system, not a management *sub*-system. The reference to quality as a management system reinforced the quality model notion that quality was either the dominant sub–system or *the* system and all other management activities were subordinate to quality.

The implications for ISO 9000:2000 of implicitly accepting this feature of the quality model did not become obvious until other management sub-system standards were written and more particularly when ISO wrote its second management sub-system standard – ISO 14001. In a situation where an organization has two or more management sub-systems, the system character of organizations cannot be ignored; nor is it practical to propose that *per se* one sub-system is more important than another or that one sub-system is the *de facto* management system. Furthermore, when there is more than one management sub-system, the stakeholder issue becomes unavoidable. Is there a management sub-system for each interested party, or are those with a management sub-system (and a standard) dedicated to meeting their wants and expectations a special

definition of a system. Collective consideration, or integration, other than that relating to management of the strategic processes, which, by definition, occurs when an organization is managed *as a system*, relates to *activities* associated with strategic processes – e.g., integration of audits, finance, research and development, employee selection and evaluation. It is redundant, misleading and confusing to use the term “integration” when referring to management of the strategic processes of an organization. Sub-system integration is a common occurrence that is done mostly as a result of changes in the organization environment and only at the most senior level of management.

category of interested party, and if that is so, how are those categories described in a way that differentiates them from the interested parties not treated in that way?

The revision of ISO 9001/2/3: 1994 (which became ISO 9001:2000) was concurrent with the development *and application* of ISO 14001 and included reference to special groups of interested parties, but the revision committee apparently did not see the need to give those groups a name and/or describe the difference between interested parties in general and those special groups – such a step would have led to the identification of what is referred to in almost all management literature (except that written by ISO) as *stakeholders*. It is curious, to say the least, that having identified several distinctly different groups of interested parties (several of which were identified with a management sub-system and a dedicated assessment standard), the ISO 9004:2000 revision committee did not address the systems issue of how those sub-systems (and their assessment standards) related to each other, *and* to the organization's management system.

Explanations of why the 2000 version of ISO 9000 did not address those issues, or did not deal with them satisfactorily, include: the revision committee did not fully appreciate the multi-stakeholder and system nature of the contemporary organization, notwithstanding the ISO 9001:2000 reference that "... due consideration has been taken of the provisions of ISO 14001:2004 to enhance the compatibility of the two standards...", the writing of ISO 9000 and ISO 14000 was conducted by different Technical Committees (TC 176 and TC 207 respectively) and were essentially compartmentalized. The explanation of why it took ISO so long to recognize that the proliferation of management sub-system standards had created a new problem for users of management system standards is that many management sub-system standards were written by organizations other than ISO.

The observations made thus far leave little doubt that as early as the mid-eighties, there were sufficient examples of quality management failing to meet expectations and sufficient questions regarding its efficacy and role in the Japanese revival to warrant a

critical appraisal before being used as the foundation for ISO 9000. That no such appraisal occurred in the 1980-1987 period can be explained (but not excused) by the failures and criticisms of the quality model being easily overwhelmed by the influence of Crosby, Deming and Juran, the bias of organizations to report successes and see market/reputational benefit in being associated with what was widely (and misleadingly) described as a “management revolution”, and a general euphoria that surrounded quality management.¹⁹ However, by the time of the 2000 revision the tide had clearly turned; quality management was being widely referred to as a management fad, the influence of the Gurus had almost entirely disappeared, and the academic community had given its critical verdict on quality management - by 2000 quality management could be likened to Frank Zappa’s description of jazz: “It’s not dead, it just smells funny”. Yet in spite of that turnaround in the fortunes of quality management, the 2000 revision of ISO 9000 made no amendment to the quality model. Together, those events provide the most striking evidence of the existence of a disconnection between ISO 9000 writing committees and mainstream management thought, *and a harbinger of the problems that would emerge in the present revision of ISO 9004.*

¹⁹ For further discussion of the influence of Crosby Deming and Juran, see Clegg, Hermel and Foley (Chapter Twelve this book). The disconnection between ISO 9000 and mainstream management thought was paralleled by (and no doubt influenced by) a disconnection between quality management and mainstream management thought. Foley, Clegg and Castles [2005] have offered the following explanation of the quality/management thought disconnect:

The point should be clear: not one of the three individuals who were most significant in the marketing, nay the proselytizing, of quality management (Crosby, Deming and Juran) had any formal academic background in management and organization theory; they did not publish in their peer-reviewed journals; they all established lucrative consulting practices, and none of them would have had any material incentive to test their ideas – or have their ideas tested – in the normal peer-reviewed ways. Whatever lineages they had with organization and management theory went back to the engineering/measurement project management that Taylor instituted – and in fact, it is persuasive to see their endeavors as just an update of scientific management with its obsessive focus on control merely redirected from the body of the worker to the quality of those objects worked on. Certainly, compared with what we know of Japanese management by those who have expertise in it, there is very little in common between the precepts to be found in their respective manifestos and what it was that successful Japanese organizations actually do (Kono and Clegg 1996; 2002). Quality management rode to success on the back of the Japanese challenge and the American necessity of finding some quick fixes to deal with it; it was never a part of the canon of organization and management theory and it never underwent any of the empirical or theoretical scrutiny that it would have had to have done had it been so. In this respect it was less robust in its auspices than the other major movement of corporate culturalism that arose as a response to the same conditions at the same time (Peters and Waterman 1982; Colville, Waterman and Weick, 1999).

1994: Proof positive of a practice/thought disconnect

In 1994 (and largely in response to the market failures of the quality model that by then were of such magnitude to warrant comment in the popular press) there took place the first concentrated examination of quality management by a critical mass of leading management scholars. In 1994 the American Academy of Management published a special edition of its journal on quality management. As Grant (1995:12) remarked:

The “Total Quality” Special Issue of AMR is a belated recognition by the Academy of the importance of total quality management (TQM) as the most pervasive and influential innovation in management practice since the scientific management revolution early this century. The objective of the issue is to “stimulate the development of theory on total quality” (Bowen and Dean, 1994: 392). This requires making explicit the concepts, principles, techniques and philosophy. The task is a difficult one: *TQM has been communicated in a prescriptive, evangelical, and non academic style, and its origins are quite different from most prior management innovations. Its theoretical roots lie in statistics rather than the social sciences, its academic associations are more with schools of industrial engineering than with schools of business, and its pioneering exponents have been Japanese rather than U.S. companies* (emphasis added).

As the Spencer and Anderson et al., extracts from the Spring 1994 issue of the *Academy of Management Journal* and two of the many papers stimulated by it (Sousa and Voss and Reed and Lemak) presented below so clearly demonstrate, quality management (the model, not the ideology), or TQM as it had become widely known, was not seen the panacea promoted by the quality gurus, Crosby, Deming and Juran and their acolytes. Quite the contrary; its lack of empirical and theoretical support and the difficulties associated with putting the quality ideology into practice (i.e., effecting behavioral and cultural change in a complex and dynamic environment) had shown it to fail the most rudimentary tests of efficacy.

- **Spencer, [1994: 446]**

During the past few years, American managers have been inundated with articles, books, and seminars describing the “quality revolution”. Total quality management (TQM) has been described as a new way of thinking about the management of organizations (Chorn, 1991), a comprehensive way to improve total organization performance and quality (Hunt, 1993), an alternative to “management by control” (Price, 1989), and, ultimately, as a paradigm shift (Broedling, 1990).

Proponents of this new paradigm depict customer-oriented organizations that are organized around processes, run by teams, and conducted more like ballets than hockey games (Slater, 1991). They advocate a humanistic, systems approach to management (Brocka and Brocka, 1992) while espousing the need for fundamental cultural changes at all levels of organization (Broedling, 1990).

To date, many corporate managers have invested heavily in total quality efforts, whereas others have waited for “hard” evidence that it works. Similarly, some academics have climbed aboard the TQM bandwagon, both through their consulting efforts and in their own institutions, but others dismiss it as a fad or as a repackaging of well-worn ideas.

In summary, TQM is a systematic approach to the practice of management, requiring changes in

organizational processes, strategic priorities, individual beliefs, individual attitudes, and individual behaviors (Olian and Rynes 1991). It is not a cut-and-dried reality but an amorphous philosophy that is continuously enacted by managers, consultants, and researchers who make choices based on not only their understanding of the principles of TQM but also on their own conceptual frameworks concerning the nature of organizations.

Accepting the substance of those descriptions of the present state of quality management, and being as a consequence deeply concerned at the possibility of its demise, this paper begins from the premise that perhaps the principal reason for the present difficulties confronting quality management is its lack of a theory and concomitantly a lack of rigor, coherence and consistency in its description and application. As Sitkin et al., [1994, p. 556] have observed:

Much of the TQM research to date has been broadly focused on descriptions of practice rather than on the development of a coherent middle-range theory of use to managers and scholars. This may explain some of the TQM failures reported in the popular press in recent years. (The Economist, 1992; Fuchsberg, 1992a, 1992b; Mathews and Katel, 1992). Perhaps if TQM had been implemented first in more non routine situations (e.g., uncertain environments such as RandD) rather than in more routine ones (e.g., manufacturing), the movement may have encountered difficulties early in its history rather than diffusing as it has. *Although the idea of a universally applicable TQM approach may have been instrumental in fostering its acceptance, it also may be a root cause of many of today's TQM problems* (emphasis added).

- **Anderson, et al., [1994: 476]**

We disagree, however, with labeling the 14 points as theory: the 14 points are as Deming claimed, principles of transformation for improving the practice of management. They represent a complex, prescriptive sets of interrelated rules of inter and intraorganizational behavior, codified and communicated in the linguistic form of commands. Although they certainly do suggest and advocate a number of concepts, they, themselves, are not concepts, the building blocks of theory (Chafez, 1978: 45). To be sure, there is a theory of quality management underlying the Deming management method, but at this point, this theory is presented in the prescriptive totality of the 14 points. This method, therefore, is more an artifact of a theory of quality management, which has yet to be articulated, rather than a theory per se. The challenge is to engage in systematic research to discover, and if need be invent, this underlying theory of quality management; such a theory to describe, explain, and predict the effects of adopting the Deming management method is imperative for generating scientific knowledge on the 14 points, guiding researchers on the subject matter, and propagating useful practice related to the Deming management method (emphasis added).

- **Sousa and Voss, [2002:15]**

The QM practitioner literature abounds with reports of problems in (the process of) implementing QM. For example, Harari (1993) and MacDonald (1993) listed reasons why QM may not work. Papa (1993) suggested that after 18 months or so, QM can revert to the old ways, and Myers and Ashkenas (1993) discussed ways to stop QM from becoming another expensive and unproductive fad. Empirical studies also uncovered implementation problems (e.g., Van de Wiele et al., 1993). In parallel, several authors share the view that successful implementation of QM requires a radical change (e.g., Dobyms and Crawford-Mason, 1991; Munroe-Faure and Munroe-Faure, 1992; Reger et al., 1994) resulting in a paradigm shift that may bring into question members' most basic assumptions about the nature of the organization (Blackburn and Rosen, 1993). According to this view, QM cannot simply be grafted onto existing management structures and systems, and may require the redesign of work, the redefinition of managerial roles, the redesign of organizational structures, the learning of new skills by employees at all levels, and the reorientation of organizational goals (Grant, 1994). Thus the prevalent view seems to be that QM is difficult to implement.

- **Reed and Lemak, [1998: 150-151]**

In 1992, it was pointed out in the *Economist* that three-fourths of U.S. and British firms claim to be using some form of quality-management program, but that these programs were not delivering the performance gains that were expected. Consequently firms were becoming dissatisfied with TQM. The work of Heady, Smith, Robert and Logan (1997) which looked at the number of new articles appearing on TQM, also suggests that interest in TQM may be waning. In a recent issue of *Business Week*, Byrne (1997) discussed

fads in management theory and stated that:

[T]oday's most popular ideas focus on good old fashioned strategic planning. Anything related to customer satisfaction is also hot, and benchmarking remains strong. What's as dead as a pet rock? Little surprise here: It's total quality management. TQM, the approach of eliminating errors that increase costs and reduce customer satisfaction, promised more than it could deliver and spawned mini-bureaucracies charged with putting it into action.

Obviously something is amiss here. Things like planning, customer satisfaction, and benchmarking are all key issues in the broader strategy of TQM. Byrne's comments suggest that there is a fundamental misunderstanding or lack of appreciation for what TQM is and what it includes. This raises the question of who is to blame for the misunderstanding, and what can be done about it. *As far as blame is concerned we point to the quick fixes that are promulgated in the highly prescriptive practitioner literature, to the shortcomings of academic work, and the short-term focus of managers.* We have already criticized the TQM-service literature for its lack of theory and its lists of process activities with their "ten-easy-steps-to-TQM" or "TQM-in-just-five-minutes-a-day" implications, so further criticism would be redundant.

...at first glance it appears that managers in firms that have given up on TQM were short-sighted. But, equally, perhaps they did not have the right information on which to base a judgment on adopting TQM *because academic research, which provides such information, has lagged application* (Grant, et al., 1994; Heady, et al., 1997) *...If TQM is to flourish outside of the Japanese firms that adopted the strategy several decades ago (Main, 1994), then much more theoretical and empirical research is needed.* And soon, before TQM joins the numerous other management theories that have been relegated to the scrap heap (emphasis added).

In the 1994-2000 period there was ample, if not overwhelming, evidence in the management literature (*and the market*) to show that without radical change to the quality model, the credibility of ISO 9000 was threatened and the ISO 9004 bridge-building exercise would be proceeding from assumptions about quality management and organization behavior that were not valid, e.g., "quality is an end rather than a means", "the quality strategy is appropriate to all organizations", "customers are always a stakeholder" and "organization success is achieved by continuously improving quality of product". It seems extraordinary that in the light of the comments cited above (and many more like them) that there is not the faintest hint in the year 2000 version of ISO 9000 that the concerns raised in the 1994 Academy of Management journal (and the literature that issue generated) about the quality model entered the revision discussions.

The only plausible (and able to be empirically supported by looking at the composition of the ISO committees) explanation of why the ISO 9004:2000 revision group of quality experts did not ask questions about the quality management model and why those experts were unable to do as ISO expected and successfully complete the ISO 9004:2000 task is the practice/thought paradox and its *alter ego* a total disconnect between the revision committee and mainstream management thought. However, with that said, it should be noted that although the 2000 revision committee may not have had access to mainstream

management thought, it *did* have knowledge, and one suspects considerable first hand experience of the market failures of quality management. Why that knowledge did not translate into a revision of the quality model is perhaps not the mystery it first appears – the signals were not sufficiently strong to demand attention, failures were very often blamed on misapplication, and many members of the revision committee had a vested interest in the quality model, i.e., many were quality consultants, quality managers and employed by national standards organizations and the certification/registrars organizations they owned.

Concluding Remarks

On first examination, the premise that ISO 9000 is characterized by a disconnect with mainstream management thought offers support for the failure of ISO 9004:2000, but appears to be contradicted by the extraordinary (and continuing) success of ISO 9001. If there has been such a practice/thought disconnect and ISO 9000 is built upon a management model that does not reflect market and organization reality then either the disconnection is perhaps not as significant as this paper suggests; or the defects of the quality model have had a quite different effect on the two components of ISO 9000. We believe the evidence suggests the latter. For example, knowledge essential to the ISO 9004:2000 task, such as the systems character of organizations, stakeholder management, social responsibility and knowledge management would not be available outside mainstream management literature until after 2000. Moreover, ISO 9004:2000, unlike ISO 9001:2000, addressed more than one management sub-system *and* the organization management system, thus giving knowledge of stakeholder and systems management a relevance they did not have for development of a standard that addressed one management sub-system – quality.

The principal reasons that ISO 9004:2000 was more affected by the practice/thought disconnect than ISO 9001:2000 were:

- The management model has a greater bearing on the task of building a bridge between one sub-system (quality) and the organization management system than it does on describing a sub-system of management.

- Little, if any, of the knowledge necessary to evaluate the efficacy of the quality model (or design an alternate system/stakeholder/knowledge model) was available to those who did not have access to mainstream management literature. It was not until well after the 2000 revision of ISO 9004 that discussions of stakeholder and systems management and the implications for organization management of the knowledge economy appeared to any significant extent in the literature with which most quality managers, quality consultants and standards writers would be familiar.

Although a little less obvious, the reasons why ISO 9001, in each of its versions, was much less affected by a practice/thought disconnect and a flawed management model than ISO 9004:2000 are not difficult to identify:

- As mentioned, the nature of the management model has much less relevance when the task is to write a standard for a sub-system of management. In that case, there is no *obvious* need to look to the organization management system or its other parts; a situation that is reinforced if it is believed that the sub-system being addressed is either the only one that really matters or is the most important.
- Even in those cases where the organization may not consider the customer to be a stakeholder and does not adopt a “quality first” strategy to manage the organization, quality of product is most likely to be sufficiently important to warrant a quality management sub-system and the use of a standard to assess its efficiency. Quality of product is not only the concern of customers; it can be a concern to employees, management, suppliers and shareholders.
- It appears that neither the “continuous/continual improvement” nor “management by facts” components of the quality model were being taken literally by the market. Furthermore, it appears that, for the most part, users of the standard appreciated that quality was a *sub*-system of management.
- Since very many organizations accepted the quality mantra that there was only one really important interested party (the customer), the “other stakeholders” issue did not arise. Furthermore, the customer sovereignty notion of the quality model was not of real concern to the majority of organizations that appreciated that the customer was one of a number of stakeholders, and quality was one of a

number of issues to be addressed. Those organizations simply used ISO 9001 to assist with quality in the same manner they used other guidance (and standards) to deal with the wants and expectations of other stakeholders.

- The day-to-day management implications of ISO 9001 being written as if quality were the only or most important sub-system did not manifest itself until after the 2000 revision. It was not until organizations other than ISO began to write management system standards and organizations had to deal with a number of those standards that issues such as, what is the relationship between the various sub-systems, between those sub-systems and the organization management system, compatibility between management system *standards*, and how to audit those standards in the most efficient way became prominent. As Karapetrovic, Casadesus and Heras (2006:11) have observed:

The universe of international management system standards is now populated by dozens, if not hundreds of documents containing criteria and guidance alike, and is continually expanding from its “big bang” twenty years ago when the original ISO 9000 models saw the light of day.

The ISO response to the difficulties created by the proliferation of management system standards was for the Technical Management Board to establish a Task Force to write a *Handbook* to provide guidance on *The Integrated Use of Management System Standards*.

In light of those comments, it is not difficult to see why ISO 9001 has succeeded despite deficiencies in the model on which it is based and why the 2000 attempt to establish a pathway to organization excellence failed. Nor is it difficult to see that, notwithstanding its success thus far, the credibility of ISO 9001 is unlikely to survive the continued use of a management model that is out of step with management reality. What is much less clear is how ISO can achieve the laudable objective it set for ISO 9004 in 2000 without incorporating leading edge management thought into the ISO 9004 revision committee *and* replacing the existing quality model with another that reflects the needs of the contemporary multi-stakeholder, knowledge based organization. Clearly the quality model is broke and is in urgent need of repairs and has had defects since its earliest days – defects that might have been diagnosed and treated in those earliest days if quality management had not been developed by consultants and (like ISO 9000) outside mainstream management thought.

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CHAPTER SIXTEEN

Quality assurance in Russian universities in the context of the Bologna Process

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The Bologna Declaration adopted in 1999 had initiated processes of deep reform in the European higher education. The process is characterized by both a multilevel approach (European, national and university levels) and involvement of many countries striving to jointly develop the European Higher Education Area by 2010. The success of this reform depends on many factors; one of the key factors is effective management. As experience of many Russian and foreign companies operating in different areas shows, the introduction of Total Quality Management (TQM) principles to be one of the main components of the company's management, in general, and is today the most effective approach to enhancing the management systems. In Russia, this problem is solved using the national standards GOST ISO 9000-2001, GOST ISO 9001-2001, GOST ISO 9004-2001, as well as the TQM methods and tools.

Development of the intellectual, scientific, technical and economical potential of the state is to a great extent determined by the universities. Thus, it is necessary to use the TQM principles in the area of higher education, primarily from the standpoint of quality of provided services and teaching results, as well as results of scientific research.

According to the Russian national concept of higher education modernization for the period until 2010, the main goal of the national policy in education is assurance of high quality of education based on the preservation of its fundamental character and

compliance with the present and future needs and demands of individuals, society and the state. To that end, work on developing, introducing and certifying university Quality Management Systems (QMS) is being carried out in Russian universities according to the requirements of the international standard ISO 9001:2000 (GOST R ISO 9001-2001). In 2003-2006 many universities were involved in developing and certifying their Quality Management Systems. Presently, more than 50 Russian universities have their QMS certified.

W. Edwards Deming, one of the founders of Quality Management, wrote: “People work in a system. The duty of a manager is to work on the system in order to continuously improve it with people’s assistance”. In a higher education institution (HEI), a manager is to work on improving three interacting systems – teaching and research, social and managerial. Management and improvement of these systems is only possible if resources are properly and effectively allocated and managed as well as if qualified Quality Management staff is available. At the same time, high quality of teaching can only be achieved if the total university system functions with high quality including quality of management at all levels and the organizational quality of supporting processes.

The measure of quality of processes in a HEI is the level of assurance that the provided service (be it teaching or scientific research) fully meets the customer demands and requirements. Such assurance nowadays depends upon the existence of a university QMS which can only be developed after all processes are identified and compared with the best practices available from other universities.

Solving this problem is of great importance from the standpoint of the internationalization of education and harmonization of the Russian higher education system with that of Europe. One of the key issues of the Bologna Declaration is introducing unified mechanisms for quality assurance.

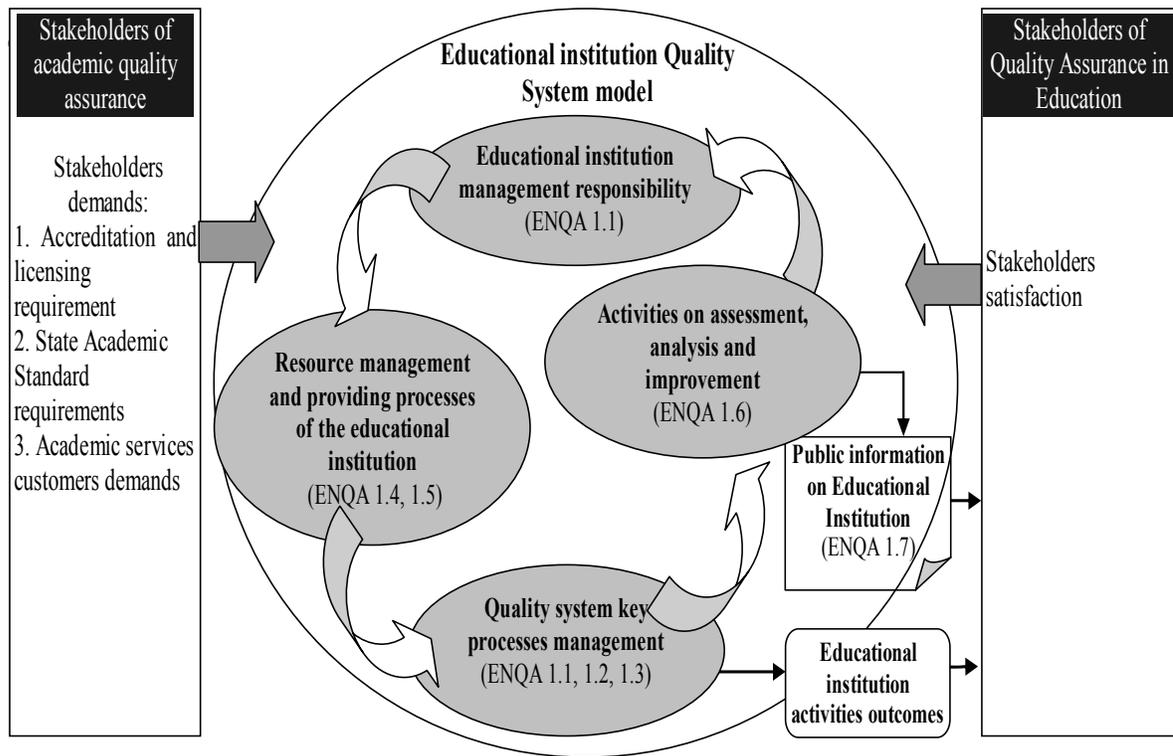
The main world tendencies in quality assurance in education are:

1. Developing unified criteria and quality assurance standards in education for European countries in the frame of the Bologna process;
2. Developing and harmonizing national systems for accreditation of academic programs in European countries.
3. Developing and introducing different QMS and performance improvement models based on the GOST R ISO 9000-2001 standard requirements, EFQM model adapted for the higher education or others.
4. Moving the emphasis from the external procedures of quality and academic performance assessment based on the national assessment and accreditation systems to procedures of the internal self-assessment of HEIs. This means that responsibility for quality and its assessment is moved to where it should be, i.e., to educational institutions. It makes possible the saving of material and other resources allocated for conducting procedures of external assessment.

A HEI's QMS is based on a quality assurance system model, or quality system which can be constructed taking into account the best management practices in Russian HEIs. It is also desirable that HEI's QMS meet the main requirements of the QNQA Standards and Guidelines for Quality Assurance.

Figure 1 presents a HEI's quality system model. This model generally meets the ENQA Standards and Guidelines as well as the requirements of the process approach oriented QMS model which is the basis of the GOST R ISO 9001-2001 standard.

Figure 1. Quality System Model for a HEI



The model includes:

Formation of the Quality Strategy, Policy and Goals, i.e., developing the educational goals which detail the HEI's Mission, as well as the social and pedagogical norms of these goals.

1. Planning and continuous improvement of the HEI's performance, i.e., processes and procedures planning, their support and improvement.
2. Resource management including human and other resources needed for teaching students, i.e., providing the processes of the EI's life cycle with all kinds of resources: financial, human and information.
3. Management of processes and procedures, i.e., management of the basic (teaching, scientific research, life-long education, staff training) and the auxiliary (campus maintenance, staff management) processes.

The model presented in Figure 1 is based on the process approach. It shows that the quality assurance stakeholders play important roles in determining the system inputs. Stakeholders satisfaction monitoring allows assessment of quality system suitability. The presented model also embraces all main requirements of the ENQA standards (the appropriate numbers of the ENQA Standards are given in the blocks of the model) as well as meeting the requirements of the GOST R ISO 9001-2001 Standard concerning the leaders responsibility, resource and support processes management, main processes management, activities on measuring, analyzing and improving the HEI's performance. Meeting the requirements of the GOST R ISO 9001-2001 Standard creates the basis for further certification of the system.

The draft set of documents on the sample Quality System model for HEI's was developed by St. Petersburg State Electrotechnical University "LETI" in 2006. Research was financed by the Federal Agency for Education of the Russian Federation and the following documents were developed:

1. HEI's Quality Manual
2. Guidelines on introducing the sample Quality System Model at HEIs
3. A glossary on the terminology used in the field of HEI Quality Management
4. Guidelines on HEI self assessment using the Model of Excellence in Quality Management
5. Procedures for external HEI Quality System assessment for licensing and state accreditation

The Quality Manual, which is to be used for developing a sample model-based Quality Systems, determines the main requirements to the Quality System and has a status of recommendations. The document was developed using the ENQA Standards and Guidelines as well as the GOST R ISO 9001-2001 Standards.

To set the HEI's goals it is necessary to determine precisely the present state of the overall management system. For this purpose, a model for improving HEI's performance

in Quality has been developed containing criteria that have been harmonized with the EFQM Model criteria. The model contains 9 criteria and 60 sub-criteria and their elements. The model for improving HIE’s performance in Quality is understood as a set of criteria and elements which characterize the main components of HEI’s activities from the Quality Management standpoint, as well as the description of the “maturity levels” for all elements which jointly determine all HEI’s processes oriented to achieving the desired results in Quality (see Puzankov, 2003).

The pilot application of the self-assessment method based on the model for improving the HEI’s performance in Quality through the Internet technologies has been carried out in Russia. Approximately 300 Russian universities received instructions and the access code to information materials on the self-assessment method on the WWW.TQM.SPB.RU website, and more than 60 universities participated in the experiment and reported their self-assessment results. Using the statistical values of the sub-criteria as well as the values of proposed weight co-efficients an integral radar diagram has been drawn based on the data obtained from universities participating in the experiment (Figure 2). The maximal value of each criterion is 10.

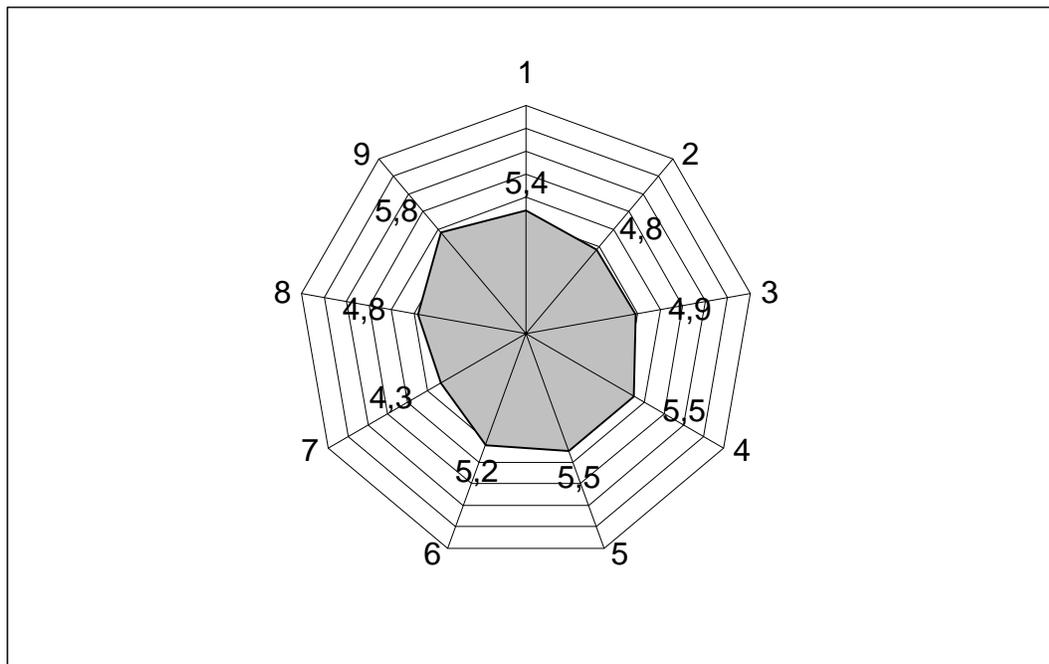


Figure 2. Self-assessment results integral radar diagram

“Opportunities” group criteria		“Outcomes” group criteria	
1. Leadership of administration	5.4	6. Customers satisfaction	5.2
2. Policy and strategy	4.8	7. Staff satisfaction	4.3
3. Staff management	4.9	8. HEI’s impact on society	4.8
4. Resources and partners	5.5	9. HEI’s performance outcomes	5.8
5. Processes management	5.5		

Feedback and opinions expressed by participating universities on the self-assessment give confidence that the proposed method can be used by universities as a tool for improving their main mechanisms of enhancing managerial, academic and social activities. The task for the future is to further analyze and discuss the developed models and criteria.

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CHAPTER SEVENTEEN

Strategic management: A factor for improving the processes of coordination between the public service and the political sphere in public organizations

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Introduction

Public organizations have the particularity of being based on a diarchy of political and administrative actors; an “elected official-public servant” duo that constitutes an essential element in all public governance. Although this observation is often made, and widely accepted, it contains a number of features and ambiguities that warrant closer examination.

First, the diarchy is not new. Today, it is so deeply embedded in current usage that one might believe it has always existed in all forms of political regime. However, this may not always be the case, judging from research carried out by a number of specialists on the subject. For some,¹ the administrative function was seen to separate from the political function in the 13th century when members of the French royal court specializing in the tasks of justice and finance were determined to be indispensable for extension of the royal domain. Other writer’s,² identify the clerks of the court of city halls, established by Louis IV in 1690, or those who worked at the end of the 19th century to execute the

¹ Tulard, Jean, (1988)

² Carles, Joseph, (2005)

orders of their mayor, who was a local notable. However, most writers agree that all political systems have had a “public service” in the generally accepted sense of the word.³ At the beginning of the 20th century Max Weber⁴ stressed that bureaucracy (not in the pejorative sense of the term) is identified with the birth of the “modern State”; even though the phenomenon was foreshadowed in the Roman Empire and Imperial China. However, it is with the State, as it is understood today (and whose principles are inherited from the French Revolution and Napoleon) that the idea of an organization specially endowed with the means of structuring the chain of command and government first developed. Furthermore, organization of the system appears to be perfectly clear to the eyes of many, since it is standardized and based on democratic principles: the politician (elected by the people) decides and the public servant implements.

Although not calling into question the entire foundation and principles of the political-administrative diarchy, most empirical research shows that the organizational and relational principles between public service and the political sphere are not spontaneously efficient and can pose problems, particularly in terms of coordination, power, respective positioning and role sharing. For those reasons it seems pertinent at the beginning of the 21st century, to re-examine the current state of our institutional systems (with particular reference to the French) and their ways of operating the traditional but still problematic relations between the public service and the political sphere. This paper proposes that new light can be shed on this extremely delicate and volatile relationship by examining the rise in prominence and influence of what has come to be known as “public management”.

³ According to the *Dictionnaire de l'Académie Française*, Administration means: “Government, direction, conduct”. The 1762 edition pointed out that this involved ‘governing, directing, conducting public, or private affairs’. It would appear, moreover, that it was during the 18th century that the verb ‘administer’ which, up to then and in keeping with Latin etymology, meant ‘direct’, acquired a specialized sense to mean what we know it as today, i.e., the sense of the activity peculiar to bureaucracy.

⁴ Weber, Max, (1971)

A weighty dichotomous tradition

The traditional conception: Separation in principle between public service and the political sphere

The administrative function in the public sector is traditionally presented as a tool in the service of society and of “the political sphere”. In this conception, it is denied all power due to the principle of a clear dichotomy between administrative functions and political functions. In this conception the public service finds itself in a relation of subordination and in the role of an instrument with regard to political power. This view is linked to the principle according to which the central place in democracy must be reserved for elected bodies, or for bodies created by an election. The French constitution of 1958 (article 20), states that “The government has public service at its disposal”. A similar notion can be found more or less explicitly in the great thinkers of the Enlightenment, notably Montesquieu,⁵ who emphasized the link and the distinction between the “political” and the “civil”. In the 19th century Tocqueville,⁶ worried about the possible excesses of the Napoleonic administration; on the one hand, because it had not brought about the process of equalizing conditions (which had commenced before the Revolution), and on the other, by showing the necessity of a certain balance between the two fundamental principles of liberty and equality. As for Hegel,⁷ he defined the functions of public service as: Oversee/Anticipate/Tolerate. For Hegel, the State was the sphere where conflicts are settled in order to put an end to contradictions by assuming a role of arbitrator. A number of contemporary analysts point out that Hegel’s administrative functions are not functions that are creative for society, but regulatory functions; the administrative system thus being envisaged for the purpose of assuming tasks of a functional type, and in no way to conceive or produce. However, it was Weber who, interested in the State as an institution, was to study in depth the relationship between politicians and administrators. For Weber, the State was both administrative *and* political, with a social division of work between these two families of actors. Weber’s “ideal” bureaucratic principles were thus to emphasize the rules of organizational operation, making it possible to anchor the dichotomy between two roles:

⁵ Montesquieu, (1748).

⁶ Tocqueville, (1856).

⁷ Hegel, (1821)

- the impersonality of the rules, procedures and appointments of public servants;
- public servants as experts and specialists;
- a formal hierarchical system involving subordination and control.

According to the logic of complementarity, an elected official is considered to have a mission of conceiving and defining orientations on the basis of principles on which he or she was elected. More than three hundred years ago Locke⁸ proposed that the purpose of political society was to preserve the freedom of individuals who must abandon their natural executive rights and confer on the community (and on the elected officials) the right to arbitrate. In the traditional conception of the so-called “modern” State (which is more than two centuries old), the elected official is supposed to state his or her project and request that it be executed by the public service. The advantages of this separation, inherited from the abuses of autocratic regimes, can easily be seen; a public service independent of the sovereign. Conversely, disadvantages can occur for the action of the politician in power. As Tocqueville observed: “In order to act, he was reduced to employing instruments not fashioned by himself and that he could not break. Thus, it often happened to him that his most absolute determinations were frustrated in their execution”.

Finding the right balance in a diarchic system has always been difficult to achieve. Today, in practice, it is not rare to observe a fear among certain elected officials, or a refusal to take an interest in operational matters, in processes of implementation and in changing programs already designed. In other cases, however, the elected official, or his “cabinet” tend (rightly or wrongly) to intrude into administrative affairs; an intrusion invariably viewed by public servants as encroachment on their “territory”.

Perverse effects of the traditional conception

The dual or “dichotomous” conception of the role of the elected official and that of the public servant may thus appear to be reductive and ineffective with regard to the quality

⁸ Locke, (1690)

of public activity; in effect, it may result in projects that are empty rhetoric on the one hand, and senseless technocratic procedures on the other.

Research carried out by the French sociologist Crozier⁹ shows that development of the bureaucratic system in contemporary societies is based on cultural and social history and can in no way be interpreted only through its procedural and normative dimensions. The importance of inter-relations and plays of power in institutional systems is a powerful factor and cannot be neglected. Crozier's empirical work on French bureaucratic systems provides useful demonstrations of the gap between the norm and reality as it is lived. Thus, coherence and common sense seem to require that paralyzing and demotivating speeches centered exclusively on the traditional grand principles be set aside; while it is absolutely indispensable, for respect of the general interest and the operation of democracy, to distinguish between the role of the elected official and that of the public servant and to provide each with their respective rules of operation. On the other hand it appears absurd and "dysfunctional" to deny the necessity for interactions between the roles of the elected official and the public servant, and the need to manage these interfaces. One is thus faced with two representations, each as illusory as the other: on the one hand, "public service – execution"; on the other, "the political sphere – rhetoric".

These representations appear as sources of dysfunction. Furthermore, since they cannot be translated into actual operations (as they prove to be an artificial view of the mind) they cannot result in effective paths towards organizational improvement - a situation can be improved concretely only if it has been correctly diagnosed.

The myth of "exclusive territories" to be respected

In fact (and this is nothing new) there can be observed in the public sphere the existence of a number of taboos with regard to the relations between the "political" and the "administrative". In effect, it seems politically correct for public servants to say that they must not "encroach on the role of the politician" and must not "overstep their role", that "the decision is not incumbent on them", and they "must not tread on the preserves of the

⁹ Crozier, (1963).

politicians”. Limited to these interdictions, the work of public servants, oftentimes weighty and intense, bears a strong resemblance to an ungrateful calling. Conversely, politicians often seem to fear “taking over bureaucratic or technocratic power” and seek to affirm their pre-eminence in public ideas and projects for fear of seeing their legitimacy flouted.

A reminder of these fears and taboos opens up a situation in which defiance and reluctance would be spontaneously more frequent than openness, reciprocal recognition and mutual support. With regard to private preserves and to the powers pertaining thereto, might one not be in a “fantasy world” that gives people the idea of a concrete risk that is in fact weak? It is still the case that this phenomenon of exclusivity of territories seems to be fraught with consequences and, in a certain way, it is in fact public performance that risks paying a price. Here, we seem to be in a situation of deep “managerial” deficit.

Needless to say, it is advisable to include an element of measurement into the analysis, and to rule out the idea that all roles must be combined. The mandate of the elected official is clear and gives him an inescapable responsibility with regard to his or her constituency. The mission of the public servant, or public agent, is naturally dependent on these political choices and comes within the scope of specific objectives and constraints. However, neither of these two roles should be seen as wearing blinkers and being put in a position of indifference with regard to the preoccupations of the other. The “confidence” between the elected official and the public servant, so often evoked as a necessary condition¹⁰, has no other meaning than that of taking account respectively of the objectives and constraints of each. While territories are distinct, they are neither impermeable nor reserved.

Moreover, this is what more and more public managers themselves are saying, as witnessed by a January 2007 survey among French territorial directors¹¹. That survey, revealed that the “Elected official – Territorial Director” distinction refers only rarely to a

¹⁰ See *La Gazette des Communes*, French journal for local government institutions, in 2006

¹¹ Bartoli A. and Placet A. (2007).

clear distribution of the respective roles. Indeed, for many the ideal situation would be as follows: the administrative manager begins by counseling in order for the politician to orient, choose and decide; on this basis, the administrator then implements and directs the services concerned. However, the territorial directors questioned considered that in reality this system cannot operate in such a simple way, since everyday circumstances are both more subtle and more complex.

Thus, observation of organizational dynamics in a public milieu clearly shows the complexity of decision processes and power plays within systems. Which suggests promotion of an absolute and impermeable distinction between administrative and political tasks is not only utopian, but perverse. Furthermore, such a procedural and rigid conception could be a source of discontent, and even demotivation among the actors concerned, and in particular among public service managers who cannot operate calmly in shackles of subordination – something which is, moreover, impossible¹². In addition, pertinent and efficient operation in the political sphere presupposes missions of expert appraisal, without which the elected official risks losing credibility and legitimacy.

It is therefore unrealistic to maintain that political actors alone would determine the fundamental options, and that administrative actors would be in charge merely of interpretation and execution.

A much more interactive reality

Studying how public organizations really operate shows that the borders are neither distinct nor impermeable: public service can be found in the political sphere and politics in public service. And although this reality creates a certain “grey area”, it is not necessarily problematic and can even be of advantage if it is handled properly.

A “grey area”

The traditional Westminster model created a clear distinction between Ministers responsible for setting objectives and the public service for implementing them. However, for that system to work it requires subtlety and nuance. Those activities are

¹² Crozier M. and Friedberg, E, (1977).

necessary as public servants cannot be held accountable for political choices, but at the same time they are not merely an implementation entity. Why? Because, according to every implementation theory, not all events can be foreseen.¹³ As a consequence, feedback loops, information and knowledge management systems between implementation, policy advice and Ministers are necessary. This means that public servants and Ministers are not only internal “purchasers” and “providers”. Private sector tools appear to be necessary, but they cannot form the core of the specificity and uniqueness of the work of public servants.¹⁴

Effective presence of public service in the political sphere

All administrative action in a public system has, or may have, political effects; public service can only have, directly or indirectly, an influence on the content of political choices. Furthermore, even if these effects are limited, resources managed by the persons in charge of public service (material, computer, human, legal, technical and other means) are necessarily sources of power and condition the choice of orientations and the efficiency of political action.

The role of the instrument¹⁵

Mastery by the public service over the technical or management instrument, as well as the role that involves drafting projects or legal texts for politicians, result in *de facto* intervention in the conception of political projects. Thus, as has been shown by many researchers, an instrument of public action can represent a system that is both technical and social that organizes the specific social relations between the public power and its recipients according to the representations and meanings it bears.¹⁶ This approach is not entirely new; as early as 1979, Karl E. Weick¹⁷, from the perspective of the “sociology of sciences”, showed that certain management instruments originated in “social games”. Since then, researchers in management¹⁸ have sought to understand the tacit rules that the

¹³ Lindblom, C. (1959 and 1968); March, J. A. and Olsen, J. P. (1995)

¹⁴ Aucoin, P. (1995)

¹⁵ Bartoli, A. (2007)

¹⁶ Lascoumes, P. and Le Galès, P. (2004)

¹⁷ Weick, K.E. (1979)

¹⁸ Berry, M. (1983)

tools impose. The sociologist Pierre Tripier¹⁹ also showed that management tools bear dimensions that are more or less visible: a technical substratum, a representation of the organization and a management philosophy. Thus, a management tool is not always neutral and in reality can be an instrument of power, or a change vector.

In his analysis of the forms of exercising power, Weber²⁰ stressed the importance of systems that incarnate a certain formal legal rationality. His analyses highlighted the importance of the material technologies of government by distinguishing them from the traditional approaches centered mainly on the sovereignty and legitimacy of those in power. Weber thus contemplated the instruments of public action such as possible techniques of domination. For his part, Michel Foucault²¹ stressed the importance of the “technical procedures” of power and instrumentation as a central activity in the art of governing. Foucault contributed to renewing reflection on State and governmental practices by abandoning the traditional debates of political philosophy on the nature and legitimacy of governments in order to concentrate on their materiality, their actions and their *methods* of action.

Expertize as a lever of managerial and political action?

Whatever the field of application, expertise by definition must remain “neutral” with regard to political or partisan stakes, and independent of the power of decision-making. Thus, when one speaks about expertise and, by analogy with the legal expert in regard to the judge, this concerns studying a question rigorously in terms of “techniques” (i.e., in a given area of specialization) and reaching an opinion and making proposals, “in honour and conscience”²². This being the case, the opinion is not binding on the decider (the judge, the elected official, or the public servant), who remains free in his or her choice. In reality, the public service often provides Ministers with expertise regarding policy, even though it is not always clearly recognized for this role. Does this mean, however, that

¹⁹ Tripier, P. (2003)

²⁰ Weber, M. (1947)

²¹ Foucault, M. (1978 and 1994)

²² French Law no. 71 498 of 29 June 1971 relative to court-ordered experts, consolidated on 2 July 2006

public servants do not intervene at all in the political field? Insofar as this expertise is likely to set decisions and changes in motion, the answer is obviously in the negative. Furthermore, a number of studies have shown that change can come through instruments, or techniques without there necessarily being an agreement between the parties concerned on the aims, or the principles of the reforms.²³ In a number of cases, it can be observed that agreements between actors are easier to obtain with regard to means and operating systems than with ends: thus, a debate about instruments can be a way to structure a space of exchanges for short term negotiations and agreements, while at the same time leaving aside issues that are more problematic. The tool thus becomes a support for progressively constructing representations that are more or less shared and provides the basis on which adversarial negotiations and debates can be built to create change²⁴. For government elites, the debate on instruments may also be a useful smoke-screen for concealing less worthy objectives²⁵.

In this approach, it appears that the technical tool, the management instrument and even expertise are far from being neutral. In effect, they result in a particular “problematization” of an issue insofar as they put variables into a hierarchical order and can go so far as to produce explanatory systems, often in an implicit manner, by exposing underlying paradigms. However, taking an interest in tools and fully accepting one's role as an expert, can in no way justify effacing political choices and stakes. Here again it can be seen how much the public service, which adopts such tools and such missions, cannot forsake an effective and no doubt appropriate influence over the political field; provided, the limits of “expert” are respected in order to avoid a confusion of roles. While the public service cannot be excluded from the political domain, the opposite appears to be equally true. Consequently, the political domain is in reality no more cut-off from the field of operating processes than is the study of conditions, implementation and action.

²³ Palier, B. (2004)

²⁴ Moisdon, J.C. (1997)

²⁵ Lascoumes, and Le Galès, 2004

The importance of “memory” guaranteed by public service

The public service maintains a memory of decisions taken and expertise used, which Ministers can value for its independence. The public servant can be considered as the keeper of corporate memory and the keeper of knowledge. Consequently, their experience and their knowledge of previous events and situations allow them to provide useful information and advice. For instance, the Westminster public service is supposed to give “frank and loyal” advice. All value frameworks which have been adopted by OECD countries in recent years declare the independence of advice to be a principal value of the public service. Providing advice on public policies is precisely the “grey area” we have referred to; even if the public service does not set objectives, the provision of advice involves creating the basis for them²⁶. The existence of this grey area means that the role of public servants in a policy opinion (which cannot be contracted out, even if there are private sector advisors) is acknowledged whilst keeping the distinction between political issues and management accountability. This is more complex than the original Westminster model, but necessary to ensure that the public service is not considered a provider as any other, and put up for bidding or privatized.

Effective presence of the political sphere in public service

Public opinion expects that the elected official or the candidate put aside personal orientations and present “ready for operation” proposals that illustrate the pertinence and feasibility of his or her political project. This can lead to bypassing programs and large concepts in order to enter into the questions of organization and sometimes into taking steps toward implementation. When these measures have been worked out under the pressure of an event, they are conceived urgently, and sometimes precipitately, without always having recourse to the technical and scientific expertise of the public service. Here, the role of “cabinets” surrounding politicians is often a determining factor.

- In France, the area of Education has recently provided a number of illustrations of this situation:

²⁶ Matheson, 1998

- after the problems of violence in the suburbs in the autumn of 2005, the President announced, among other things, the setting up of a system of apprenticeships starting at age 14 in a number of school curricula;
- after the crisis and students strikes caused by the proposed “First Employment Contract”²⁷, the government launched in particular the “active orientation” system to be set up in the universities for the purpose of improving the orientation of secondary school students.

As in many other examples (and whatever the political party in power) the opportunity and feasibility of these measures continue to be widely discussed. The case of apprenticeships at 14 years can be analyzed in this framework: while the intention may be considered praiseworthy by some as bringing education and professional life closer together, it is likely that the system will raise major problems and difficulties with regard to implementation. First of all, why would employers agree to take on such young employees when they can have recourse under equivalent conditions to apprentices who are more mature and better qualified? The question of opportunity is also raised: e.g., is the relationship to being a wage earner and being remunerated (even in a partial form and for educational purposes) advisable on entry into adolescence? Besides, does not this policy risk decreasing the principle of equality of opportunity by eliminating working class pupils from general courses of study? In early June 2007 the new Minister of National Education announced (on the spur of the moment and without sufficient expert appraisal) suppression of this system.

These same contrasts can be identified in regard to the so-called “active orientation”. The goal of reducing the rupture between secondary school studies and higher education and the fight against failure during the first cycle of university studies may be thwarted by the absence of means, incentives and capacity of the universities to set up a truly individualized system of counseling new students. Consequently, the interim report presented by the magazine *La Lettre de l’Education*²⁸ around eight months after the

²⁷ In French : “CPE = Contrat Première Embauche”

²⁸ *La Lettre de l’Education*, n° 556 – 30 April 2007.

highly publicized launch of the system, is extremely mixed. The report reveals that the universities that volunteered to implement the initiative lacked the means to put the initiative into effect, and showed that the actions undertaken were disorderly and disparate.

These few examples, which can be readily multiplied, underscore the importance of an effective interface between the political and administrative domain; particularly through missions of “expertise”. Those examples also illustrate the extent to which these questions can take on a particularly acute dimension at the time of dramatic events and crises. In an urgent or dramatic situation, the lack of clarity of roles immediately brings up the delicate question of “responsibility”. The clarity of roles between Ministers and public servants becomes blurred when a failure occurs. Such for example was the tragedy of Cave Creek in New Zealand, where several people died because of a poorly controlled bridge in a national park. A true national debate took place in New Zealand in order to know who was accountable; the Secretary, who was the administrative Head of the Department, or the Minister. Public opinion pointed its finger at the department’s lack of resources and in the end, both were held responsible: the Secretary for not having overseen the effective organization of his department, and the Minister for the same reason. In this sense, the Minister is not only a “customer” but also the head of the department. Courts in English-speaking countries have since ruled that a Minister is not responsible for individual cases, but rather for watching over the systemic organization of the department to ensure that there is quality control, a business plan, etc. The Minister is not required to intervene in setting up management mechanisms, but he does have to check on whether they exist and how they work. He is thus accountable for structural as well as political issues. He can also intervene in administrative matters to avoid a proliferation of procedures and processes which can compromise the efficiency of political action.

Possible contributions to management

Political and administrative spheres are by their nature porous and permeable between each other. In some cases the inter-relationship is dysfunctional and counter-productive:

this happens when one sphere overrides the other in an informal or even deceitful way without consultation or coordination, or when a confusion of roles arises. In other cases, taking clear and well managed stock of the interactions between political officials and the public service can prove advantageous and a source of improvement of the quality of public action. Thus, under certain conditions management can play the role of interface.

The various levels of relations between Management, Public Service and Public Policies

From the point of view of public directors (whether they are executives from central administration, decentralized departments, territorial administration, government-owned corporations, etc.), three levels of involvement seem possible with regard to public policies:

- their contribution to conception, borne by political actors, but for which their information and opinions may be quite meaningful;
- their technical expertise often sector-based on the definition of contours, perimeters, stakes, conditions of opportunity and feasibility of the public policy that has been conceived;
- their management experience with the implementation of public policy; this results directly in:
 - transformation of the major political options into strategic and operating policies;
 - articulation and allocation of resources;
 - conduct of projects and involvement of personnel concerned.

Here it is a question of a certain “management” located at the interface between public service and the political sphere. However, what “management” is it? Certainly not a management defined, as it sometimes is, as “the implementation of policy”. Management in itself is a set of missions and processes that comprise three dimensions: “Conception”, “Implementation” and “Evaluation”. According to followers of Fayol,²⁹ management concerns finalisation – or the definition of objectives – as well as organization,

²⁹ Fayol, Henri, (1979).

coordination and control.³⁰ As it is generally conceived today, management cannot be reduced to a set of tools. As pointed out by V.N. Santo and P.E. Verrier³¹ : “Management is not the sum total of modern tools of management, it is setting up these tools in a strategic perspective”. In fact, public management tools are often linked to major political reforms concerning the State and its services, whether these services are central, fragmented or decentralized. To be convinced of this, one need only refer to French examples of the “RBC” (Rationalization of Budget Choices) during the 1960’s, or the recent “LOLF”³² case, which is discussed below. However, are these “managerial” tools truly activated in coherent procedures? Nothing seems less certain, the instrumental approach being both non-neutral and non-sufficient.

Conversely, the pertinent practice of management in public systems can change the relations between the political sphere and public service considerably if it leads to clarifying the roles concerning the conception and implementation of projects, and to combating a total break between vision and action.

If one admits to an interest in making personnel responsible around the stakes of the State and those of public service, then all managers, whether political or administrative, need to take an interest in the conditions under which their missions are defined and realized as well as in the processes for achieving their goals. All persons in charge are thus called on to be a “manager” and even a “strategist”. Indeed, making personnel responsible presupposes withdrawing from rhetoric and exclusive focus on the rules so as to also become interested in the processes and conditions of implementation that lead to results.

Strategic management and direction of interfaces

For the sake of the general interest and the operation of democracy, it appears necessary to distinguish between the role of the elected official and that of the public servant. To provide them respectively with rules of operation, it seems, conversely, unfounded and

³⁰ Thietart, R.A. (1979)

³¹ Santo, V.M. and Verrier, P.E. (1993)

³² LOLF = *Loi Organique sur les Lois de Finances*, which is the organic law relative to the finance laws in France

“dysfunctional” to deny interactions between their roles and to neglect the necessary piloting of these interfaces. Moreover, the metaphor of piloting³³ is often used in conjunction with the concept of management.³⁴ In a context of challenges and major transformations, organizations are considered to be piloted so as not to be subjected to events. This does not mean that everything is under control and predictable – far from it! However, it does involve creating a collective coherence making it possible to progress in explicit and known directions with the resources available. It is here that the stake of management and its tools are to be found and prove to be fully adapted to the public sphere and to the general interest.

The conditions for success of the relations between the public service and the political sphere are in fact a good deal more subtle than the traditional dichotomous approach would suggest. Thus, it may be fruitful to consider that the “managerial” approach applies as much at the level of public policies as it does at the level of managing the public organization. In both cases, the interactive chain “Conception – Implementation – Evaluation” can be developed with adapted tools and systems at all levels. We are far from a stereotypical representation of noble and directive public policies followed by an executing and instrumental public management. As to the tool of public management, it can be everywhere (from conception to evaluation, passing through implementation), and it influences each step in the procedures engaged.

The place of strategic management in the public system

So where is management located, if one admits that it has its place somewhere in the operation of public organizations?

The main error to be avoided would be to confuse management with administration, as though only public servants in charge of internal management were to bear the “managerial” logic, whereas elected figures, designers of public policies, would seek results for the citizen, independently of any concern for implementing and piloting. “Management” and “Administration” cannot be assimilated into one another!

³³ Wiener, N. (1948)

³⁴ Bartoli, A. and Hermel, P. (1986)

This misunderstanding is a source of numerous dysfunctions, for it confines each to a closed territory, whereas the managerial stake is so difficult that it needs to be shared by all. It would thus be advisable to avoid a dual confinement of:

- “Management” that would be reserved strictly to administrative duties;
- “Public Policies” that would appear as “over-specialized” sector-based expertise reserved to political teams.

In either case, the risk of forgetting the necessity of “public action” is not the major defect? The reality of public action – over and above rhetoric – presupposes a minimum of articulation between political thought, its operational translation, its understanding, its acceptance by the actors, the method of its implantation, the conditions of its anchoring, and of its effectiveness. With so many complex “managerial” challenges requiring joint efforts by different categories of actors management is not the prerogative of one “mission” or another (political or administrative), or of one player or another (elected official or public servant).

If one acknowledges the interest of making personnel responsible around the stakes of the State and those of public service, all persons in charge, whether political or administrative, need to take an interest in the conditions of realizing their missions and reaching their goals. All persons in charge must therefore be “managers”. Making personnel responsible in fact presupposes withdrawing from rhetoric and being focused exclusively on the rules so as to take an interest in the processes and the conditions of implementation that lead to results.³⁵

Absence of miracle solutions

For the past few decades in many countries, successive governments and persons in charge of public affairs have been striving to reform and modernize the State. Users, researchers and managers in the public sphere, for their part, also regularly express the

³⁵ Furthermore, this analysis does not fail to bring to mind the analysis inherent in the fundamentals of ‘strategic management’ of companies, which has shown the incoherence and inoperative nature of the dichotomies between ‘strategy’ and ‘strategic implementation’ or that between ‘general policy’ and ‘management’. Cf. A.C. Martinet, (1984).

necessity of combating dysfunctions. Indeed, a very large number of actions aimed at reforms have been undertaken since the 1960's within the various public functions with more and more "managerial", organizational and strategic overtones. For this reason, the number of tools employed has increased. At the same time, numerous observers and practitioners identify a lack of capitalizing on experience, amnesia with regard to the institutions and especially mid-course aborting and rapid ruptures of numerous novelties that have been engaged. Moreover, current budgetary constraints lead to the paradox of having to reform without having the means to do so. Lastly, since carrying out change presupposes additional piloting and commitment by the various actors, it brings about an additional cost, at least cyclically, during periods when restrictions make it impossible to finance the implementation of these reforms. As for the tools, curiously, once they are set up they have a tendency to remain without ever being pruned, even though the reform that introduced them may have disappeared. From such situations there results new spirals, highly regressive this time, and a phenomenon of "burnout" among managers and agents who are forced to reconcile the irreconcilable: carrying out basic missions in a more demanding and scantier daily routine; launching and piloting of new procedures, often sent in from the outside, that risk being called into question shortly after the arrival of substitute reforms (which are often dictated by pressure from the media or the political sphere, or as a result of urgency, etc.); accumulation of tools and procedures, some of which are often obsolete or useless but continue to be required.

It therefore appears that the public system runs the permanent risk of falling back into its bureaucratic and instrumental pathology; even after "managerial" procedures linked to political orientations have been engaged. The public management tool in and of itself is thus subject to a deficit of meaning and risks becoming a mere alibi masking the most fundamental stakes. Moreover, its use in the absence of any strategic approach will tend to reinforce the technocratic nature of the system and weigh it down rather than loosen it up or stimulate it.

Finally, the fashion of "managerialism" can also get out of control. It risks to become the end in itself and to produce sterile and excessive initiatives, and consequently to lose and

forget the real stakes in the public action. Certain authors thus laud a defense of the bureaucracy, in the noble and traditional sense of the term, based on the key role of the public servant and on an ethical dignity of the bureau. In particular, Du Gay³⁶ uses a Weberian perspective to rehabilitate the indispensable contributions of the bureaucrats, in articulation and complementarity with the politicians.

So while there is no miracle solution in management, it appears that management conceived in a strategic logic (in the sense of currents of “strategic management”³⁷) can constitute an effective interface and constructive approach between the political sphere and public service; provided it is appropriated by both spheres. It supposes to establish processes of dialogue and debate between the politicians and officials. It is in this sense that management, conceived as an approach that is both strategic and operational, can become a means of improving coordination between the political sphere and the public service.

Examples from around the world

The case of “LOLF” in France

The organic law relative to the finance laws (“LOLF”) was promulgated by the President of the French Republic in 2001. This text is the fruit of considerable work carried out by the National Assembly (1999). It is the result of numerous attempts to reform the order of 2 January 1959 (often called the “Financial Constitution of France”). The aim of LOLF is to satisfy two principal objectives:³⁸ to reform the framework of public management so as to orient it towards results and the search for efficiency; to improve the transparency of budget information in order to provide Parliament with more information.

The initial idea is to rely on increasing the responsibility of the managers and on controlling public performance. This reform comes, at least in principle, within a strategic and perennial perspective which, in the area of public management, represents a

³⁶ Du Gay, P. (2000)

³⁷ Ansoff, H. I; Declerck, R. and Hayes, E. (1976)

³⁸ According to the terms of the Budget Division employed at the government seminar, ‘Vers une nouvelle gestion publique’ [Towards a new public management] held on 10 October 2001.

significant innovation. As Alain Lambert (Ministry in charge of the Budget and Budget Reform) has observed:

This involves a management reform. A public service will always be more efficient if it is more responsible. This preoccupation is intended to guide the public action of all its agents throughout the territory of France". The Ministry's website ("Moderfie") goes so far as to evoke "the emergence of the public manager" and to say that "finished are the rigid and impermeable credit lines that had to be spent at the risk of not being renewed the following year.

LOLF is thus supposed to be much more than a mere tool. However, it relies on an important and sophisticated instrumentation. LOLF is based on the principle of budgeting no longer according to the nature of expenses, but is oriented towards results starting from defined objectives. Credits are grouped together in around 150 fungible ministerial programs within which credits could be redeployed by the persons in charge. As for the programs, they themselves are grouped together in missions if they contribute to the same public policy. Finally, each program is broken down into actions that describe its content and group together the credits that have the same purpose.³⁹

Beyond these initial orientations, however, implementation is obviously not so simple, which is no surprise given how heavy and difficult transformation of the operation of public organizations is known to be! Today, LOLF is confronted with a dual challenge: one of them upstream, which concerns political supervision of the system (present at the beginning, but to be re-asserted over time); the other downstream, which raises the question of implementing and conducting change at the local level. The risk, which is beginning to materialize in many places, is in effect to be limited to setting up a technocratic toolbox and whose users see only the bureaucratic shackles without having any return on being made more responsible⁴⁰. While LOLF potentially represents a platform for "managerial" modernization, it cannot be sufficient in and of itself. In particular its impact on the proximity of public actions, and on increasing the responsibility of the actors, is yet to materialize.

LOLF thus runs the risk of failing if it succumbs to one of the following two extremes:

³⁹ Source: website 'Moderfie : vers la nouvelle gestion publique' [Moderfie: towards the new public management] www.moderfie.minefi.gouv.fr

⁴⁰ Trosa, S. (2003)

- a purely technical and “administrative” reform falling into a procedure and an instrument for the *execution* of directives;
- a purely “political” reform based on *rhetoric* without a conception of the managerial project and of the processes for conducting change.

This major reform provides an interesting understanding of the risks of confusion between the end and the means relative to the tools of public management and highlights the perverse effects of the dichotomy between the Political Sphere and Public Service neglecting the “Management” interface.

The case certain territorial governments and French public services

A study of the procedures of change engaged in territorial governments⁴¹ or in public services⁴² in France shows improved situations of coordination between the political sphere and public service thanks to the methods of strategic management. These procedures bring out the differences between approaches we shall call “traditional” and those we shall call “managerial” for the political and administrative conduct of public projects.

"Traditional" approach

The politician sets out his or her project, or only an expected result, in a form that the French would call “Yaka”, i.e., in an intentional and sometimes illusory way, not taking account of the opportunity and/or feasibility of the orientations expressed. This approach is accompanied with a requirement on the elected official to implement the project with the public service, expressed in terms of “In X months, I expect the result”. In this framework the administrative manager is placed in the position of execution and spells out the instructions to the lower levels of the hierarchical structure. The highly distinct traditional roles and the institutional norm are well respected. However, the result is far from being guaranteed, and its social, organizational, economic and/or political cost often turns-out to be very high. These situations may appear to be grotesque, but they are not as

⁴¹ Examples studied particularly during the ‘Graduate Seminar in Management’ at INET (Institut National des Etudes Territoriales) in Strasbourg, France

⁴² Examples studied particularly during the ‘Circle on Reform of the State’ chaired by Yves Cannac; see Y. Cannac and S. Trosa, (2007).

rare as one might believe. They illustrate the dichotomy between the two spheres, the subordination of public service with regard to the political sphere, and the total absence of managing processes of coordination.

"Managerial" approach

The politician lays out his project, possibly after listening to the suggestions of the public servant. He explains the reasons for it, the ins and outs, the stakes and perhaps also his questions or doubts with regard to them. He solicits opinions and suggestions and awaits formalization of a plan of action on which he can pronounce himself. The public servant in charge engages an expert evaluation of the project, in terms of both opportunity and feasibility, and he proposes to the elected official a procedure for implementation. He expresses expectations with regard to the politician in order to ensure that certain steps are taken, and proposes regular points of progress on the project between politicians and public servants. Together, they define in a concerted fashion the contours of the results expected. The public servant is then responsible for implementation of the project and coordinating with the elected official. Evaluation is carried out under the technical guidance of the public service, but jointly with the politician, who chooses the evaluative models to be adopted.

In these situations, which actually exist, management represents a sort of “area for sharing out” the project, each having clear roles within the scope of processes of coordination that are in fact piloted.

Examples in New Zealand

Some countries have sought to deal with the issue of the roles of the politician and the public servant by describing an internal client-supplier relationship; one not dissimilar to the procedures for quality management in companies. In some cases, for example, the Minister has been considered a “client”; the major recipient of the administrative action. The aim of this approach is to facilitate clarification of the role of the general director of a public service who designs and organizes his action without the operational intervention of political actors. Such an option, the legitimacy of which may be open to question,

presupposes managerial work on the Minister's expectations, reform of the operating processes in order to meet these expectations and the working-out of systems of evaluation involving the political actor. However, this poses a problem of responsibility with regard to the function or dysfunction of the public system. Blatant examples of difficulties in this area, resulting notably in certain legal precedents in the English-speaking world, are particularly interesting to study from this point of view, e.g., the Cave Creek affair in New Zealand.

It seems then that management can constitute an area of mutual intersection between the two roles (that of the elected official and that of the administrative public servant) and facilitate effective dialogue for implementing public action. Examples of public procedures conducted according to a managerial logic in France and in New Zealand (cases that are quite different, however, at the cultural and political levels) show that excessive division between political roles and administrative roles results in excesses and a lack of quality in public action. Conversely, concerted reflection on the conditions of implementing the political project and the possibility for the public servant to design an appropriate strategic procedure within the political framework make it possible to pilot change based on coordination and confidence. However, no obvious solution stands out; each option presenting limits on which both political and administrative lucidity are required.

More generally, it may be asked; does public action not have everything to gain from the public service contributing to the political sphere? In this regard, the example of change in New Zealand is quite illuminating. New Zealanders began with the hypothesis of a sharp distinction between the public service as a service provider and the political sphere alone defining the objectives and purchasing "outputs", i.e., services, from the public service. Strategic consulting at the Ministry level on public policies had to come almost exclusively from consultants composed of representatives from civil society. Experience shows the abuses of such a system.⁴³ If public servants are only service providers and

⁴³ The experiment was evaluated by an international expert of the World Bank, Allen Schick (1996), and by Sylvie Trosa, (1997).

their cost/efficiency ratio is low, what justification is there for them to continue their work? Furthermore, as stated by the Civil Service Minister before senior executives: “We have turned the public servants into morons: they do what they are told – no more, no less. They no longer innovate, or take initiatives”. There thus exists between the political sphere and public service a “grey area” which is that of consultation on the objectives and strategies for the implementation of public policies. However, this “grey area” is all the better accepted when the roles are clear, the objectives come under the responsibility of the ministers, and the public service does not have to contest them. Conversely, everything that comes under management (management of human resources, of implementation, of structures) does not come under the responsibility of the political sphere. In English-speaking countries, the political sphere can give its opinion on the systems (is there management control? is quality of service ensured?). However, once the objectives have been fixed, these matters are not guided directly.

In other terms, fruitful collaboration between the public service and the political sphere is all the easier if the roles and the fields of freedom of each of each is precisely defined..

Reports from New Zealand on this question are quite explicit.

“Identification of clear strategic priorities by the Ministers does not suffice for implementing them; a strategy must define precisely who does what, how progress will be measured, what the areas of risk are and what public partners are necessary for the implementation of each priority. This strategy must be approved by the Minister or Ministers in charge. It is also indispensable that priorities not be added over and above the daily activity of the ministry, but that they are integrated into their strategic plans and scheduled in terms of resources and time”.⁴⁴

That same report demonstrates the decisive role central administration plays in the implementation of political priorities:

It must promote an attitude of cooperation between services in order to achieve goals collectively and develop know-how to this end. This attitude must extend to the partners of public service and form an integral part of evaluation of the services and of individuals. It must set up structures that are not inconsistent with priorities. This presupposes flexible and adaptable organizations. It must provide the ministries with well-adapted and rapid expertise while ensuring that the persons in charge of implementing the programs have sufficient autonomy in their action.

⁴⁴ *Review of the Centre*, State Services Commission, New Zealand, 2000.

Other illustrations

Along the same line of reasoning the report by the French Commission of the 10th Plan chaired by François de Closets, stressed the creation in each ministry of a service for projecting into the future and evaluating in order to make it possible to consolidate the technical arguments of the ministries' objectives:

To be effective and legitimate, public action must meet explicit objectives. The clarity of goals makes it possible to arbitrate between priorities and evaluate the results of the action, to lift all ambiguity in the application of decisions. On this point, the current situation is not satisfactory. [...] Firstly, forecasting developments and anticipating the effects of the decisions under consideration must be seriously amplified. The dictatorship of the short term peculiar to the political agenda must be counterbalanced by a prospective reflection. [...] Cells for projecting into the future and assistance in decision-making must be created in each ministry.⁴⁵

A problem can arise, however, when these cells (which sometimes exist in the ministries) are not used to assist decision-making and thus do not operate as an interface between the public service and the political sphere. Conversely, the sensitivity of the political team to the various “managerial” facets of public policy is clearly a key success factor. It can also be a source of both recognition and motivation for the public manager. It is in this way that the idea can be stressed according to which Management concerns the political sphere. Not in the current sense of an intervention in acts of management, or in individual or *ad hoc* decisions, but for the purpose of approving strategic plans and lines of modernization, and especially for lending support to the managers who implement them. In this respect the recent Scottish experience is of interest.⁴⁶ In 2006, the Scottish Home Secretary launched a process of coordination and communication between the heads of departments and Ministers. It was based on a simple applied technique; officials were asked: “What do you expect from Ministers?”, and the Ministers were asked the same question about the heads of departments. In addition, a second question was raised, and put in a mutual way to both categories of actors: “If they deliver all that for you, what would you give in return”? All the answers were analyzed and discussed. After several iterations the dialogue resulted in a formalized internal contract, which served as a reference to all.

⁴⁵ François de Closets, (1989, p. 184).

⁴⁶ See the Mike Donnelly, Chapter Eighteen this book

Multiple and varied examples drawn from throughout the democratic world highlight the necessity of regularly revisiting the processes of collaboration, cooperation and coordination between public servants and politicians. Implicitly, or explicitly strategic management reveals itself as a lever for reform and improvement.

Conclusion

The central focus of this paper has been the universal concern in democratic societies of how best to manage public policy and more specifically how to manage the inherently complex, ever-changing and always delicate relationship between the elected official and the public servant. And while we have been able to provide examples of how this issue has been dealt with successfully by some public entities, both in France and other countries, it is clear that how and where to draw the line between the politician and the public servant will continue to bedevil, bemuse, and challenge scholar and practitioner alike. Of course the issue is not so much how and where to draw the line but rather how and where to draw it in a way that is effective, which is not to say what is effective today will be effective tomorrow, or what is effective in one society or level of government will be successful in another. Although, much has changed in the public servant/politician relationship in France in recent years, as Pierrick Lozé, a French local government Director, recently observed, more change can be expected in response to changing social and economic circumstances:

The duties of general director at town hall have undergone a few mutations bearing, internally, on relations between, elected officials and the mayor in particular. There is now a greater proximity in the manner of working [...] Today, we are more in a logic of co-construction, exchanges, discussions – each one, however, within his role.⁴⁷

This same official has since written a book⁴⁸ to demonstrate the importance of some features of the relationship between a mayor and the general director of the town hall: trust, respect, recognition of roles, and a strategic sense of both. His concrete experience is a relevant illustration of the key question of coordination between public service and the political sphere in public organizations.

⁴⁷ Lozé, (2007).

⁴⁸ Lozé, (2008)

Despite the generality and brevity of our discussion it is possible to identify several pitfalls that should be avoided in any further analysis of the dynamic, ever-difficult and profoundly important relationship between the public servant and the politician. *First*, it is advisable to avoid relegating public service to a role of execution and the political sphere to a role of rhetoric. *Second*, the illusion of the miracle formula and of systematic reliance on the tool of public management as an instrumental representation, poses at least as many problems as the traditional dichotomy of roles. *Finally*, it seems clear that the path to effective public sector decision-making lies with transparent cooperation, collaboration and coordination between the two spheres, and those activities being undertaken without fear of the interactions and interfaces and with a respect for formally identified roles. It is in this sense and context that “public management” can make a positive contribution to improving decision-making between the public service and political spheres in public organizations. Such, in any case, is the path recommended to renovate the operation of the State and its components in the future.

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CHAPTER EIGHTEEN

Quality Management and Complexity in Public Services

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Introduction

This is a naïve paper. It explores some of the defining characteristics of public services and the contexts within which these are delivered in the 21st century. The locus of the paper is Scotland and so it invites the challenges of comparison and contrast with public services and their contexts internationally. The thesis being explored is that this landscape of public service management and delivery can be charted as a complex adaptive system and so may be amenable to description and analysis using ideas from complexity science. The paper merely touches the surface of a number of issues using illustrative examples which, hopefully, will facilitate discussion on which more general assertions and conclusions might be based.

For some years now a group of researchers have been investigating and reporting on the assessment of the quality of service provision by local authorities in Scotland (e.g. Wisniewski and Donnelly, 1996; Donnelly and Dalrymple 1996; Donnelly, 1999; Donnelly and Shiu, 1999; Donnelly and White, 2006; Donnelly et al., 2007). This work has led to some conclusions being drawn about service quality, its assessment, and the importance of the differences in contexts within which public sector services are provided when compared with the commercial sector. In what follows we use the term “public services” to denote those services which are commissioned and resourced from the public purse, but not necessarily delivered by public sector organizations.

Strategic contexts and nature of public services

Donnelly (1998) describes the situation where many public sector services have been established and developed as a response of the failure of the commercial sector to provide adequate quality for citizens. Unlike the commercial sector, public sector services often have multiple, occasionally conflicting and political, objectives and it achieves many of these through its role as the direct or co-provider as well as the commissioner of services from other agencies. Thus the quality of a specific direct service might be compromised in some areas because of higher priority aims of the service commissioner or producer in some other service arena. This might be a consequence of genuine, deliberate, choice in the way in which local democratic resources are mobilised to build civic capacity using direct service provision as a vehicle for community involvement, e.g., local entertainment events organized by community activists rather than leisure professionals can compromise event quality but may result in significant community development. Or the service compromise may follow a re-prioritization by local or central government and the consequent redistribution of finance and other resources between service areas.

In a context where the 'Board' is elected by popular ballot every four years or so, there can be, and has been, extensive political change resulting in violent swings in service priorities. This can be further complicated with the uncertainty which arises when the precise date of an election is not known. The outcome of the recent 2007 local government elections in Scotland eloquently illustrates this point. Prior to the election, 24 of the 32 councils had single political party control with 8 controlled by Others/Independents. This 'stability' and ideological clarity was disrupted following the election in May 2007 with only 2 councils returning a majority political party, a further 7 under the minority control of a single party and 19 councils having coalitions of two or more political parties. It is interesting to observe this political kaleidoscopic pattern since it provides a fascinating backcloth against which local service priorities will emerge.

The nature and financing of these services often imply that the logic of quality – the virtuous circle of improved service quality leading to increased volume throughput from existing and new customers resulting in increased revenue and profits so underpinning

activity growth – fails to hold because of the fixed resource-base available to the service department making it unable to meet the increasing needs of a demand-led service within a fixed and lengthy time period. Indeed growth is not always a driving aim and the common (e.g., Boston Box) growth/share segmentation of service offerings is less appropriate than that of assessing existing provision versus citizens’ needs when local authorities are considering strategic service interventions. Moreover, in some service areas provision is heavily controlled through statute where entry into and/or exit from a service might be required or prohibited by law.

Customers of public sector services

Citizens living in a particular geographic area pay for public services collectively, in the main. There are some services, which, because of political and/or policy choices, attract a transaction charge from consumers – usually made at the point of service delivery. Not every citizen, however, receives all of the services provided by a public authority. Nor, indeed, does every person receiving some specific public services pay for them. This detachment of service receipt from service payment is a key feature distinguishing many public services from their commercial counterparts. A key finding of the work in Scotland has been the evaluation of the applicability of service quality tools in the environment where there may be a disconnect between the person paying for and the person receiving a particular service. Early indications from this research (e.g. Donnelly and Dalrymple, 1996) concluded that the closer the public service has a commercial sector analogue, the more likely the commercial sector quality tools might apply. Allied to this principle of collective payment for public services is the notion that citizens have a different relationship with public sector providers than commercial sector companies have with their customers. Indeed it is argued that citizens have all the rights of customers and the additional set of rights of access to public sector service information and decision-making. Other complexities rarely experienced in the commercial sector include

- The ignorance or limited knowledge public sector service customers might have even though they receive the service e.g., a food safety inspection service

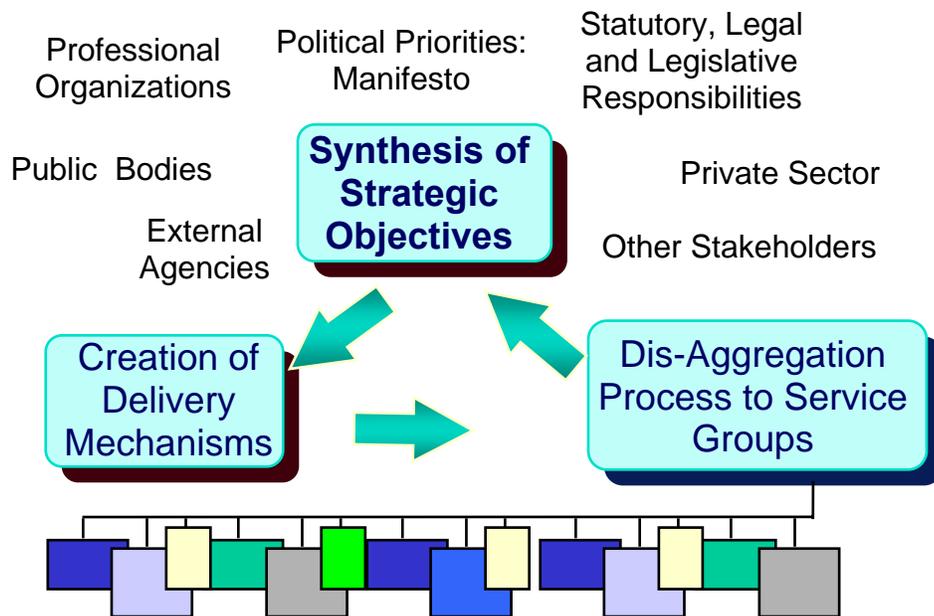
- The ambiguity of the customer and occasionally conflicting interests held by customers and clients of public services e.g. local authority planning services
- The existence of unwilling customers e.g., of the custodial services of the police and prison service

Further, in commercial sector services the customer is often well defined whilst the recipient of a public service might be an individual, a group of people in a community, one or more elected members, or even society as a whole – now, and in the future!

Public sector decision-makers

Most public sector organizations are multi-objective and multi-decision maker bodies. In local government, for example, elected members exist in a decision-making environment where conflict and negotiation are regular features. Conflict between central responsibilities and local ambitions; negotiation between the different agencies that may be involved in the design, development and delivery of services; and the tensions between the resource allocation and management role held by some councillors and that of scrutiny held by others in the same organization – each with the legitimacy of an electoral mandate.

A Framework for Service Excellence



Analysis by Donnelly (1998) concludes that elected representatives often engage in the synthesis of objectives from many agencies and organizations engaged in the creation of delivery mechanisms for public services and that this a dynamic requiring constant monitoring. This process often results in a mosaic of service delivery architectures involving direct, commissioned, agency, arms length, collaborative and partnership arrangements with delegated decision-making.

Public service organizations in Scotland

Public spending in Scotland accounts for approximately 50% of Scottish GDP and involves a wide range of public and private bodies delivering services which affect every aspect of the quality of life, and death, of Scottish citizens and visitors. As well as national (UK and Scottish) parliaments and local government councils, there are in Scotland alone (at the time of writing) 138 non-Departmental Public Bodies (NDPBs), 17 Executive Agencies, 1 Public Corporation, 2 Nationalized Industries and 1 other body with varying responsibilities for providing and delivering public services across Scotland. In addition, there are 8 police authorities, 8 fire authorities, 20 Higher Education Institutions and 43 Further Education Colleges which complete the picture of public bodies in Scotland. There is also a significant input from the private sector with many local, national and international companies involved in delivering public services individually or in collaboration with one or more public sector bodies.

Public service quality assessment studies

As noted earlier, a number of studies have been conducted by the research team into public library services, domiciliary home care services, and regulatory food inspection service (Donnelly and Dalrymple, 1996); local authority housing service (Donnelly and Shiu, 1999); residential care of the elderly (Donnelly, 1999); the use of public halls for social functions (Donnelly and White, 2006); local policing service (Donnelly et al., 2007) as well as a number of unpublished reports investigating the quality of internal services such as personnel, finance, and legal services in local Government.

In summary, some of the general conclusions the team is moving towards are:

- The applicability of quality assessment methods is influenced by the extent of relationship between the payment for and receipt of a service – the closer the existence of a commercial sector analogue the more applicable are the assessment approaches
- Service recipients views on the quality of service provided and the relative importance of service quality dimensions are generally different from those of the providers of the service – who tend to underestimate the quality of service they provide
- Service recipients in different geographic areas have different views of the relative importance of service quality dimensions – with implications for the establishment of national standards
- Customer expectations are more stable than perceptions in the different quality dimensions – making management of expectations as challenging as influencing perceptions of service quality through delivery
- Service quality dimensions themselves may vary from service to service and from stakeholder to stakeholder making general instruments potentially inapplicable – aggregating service recipients’ views of service quality runs the risk of re-enforcing rather than eliminating service inequalities, especially for those in most need
- The ServQual approach of investigating the difference between expectations and perceptions has a resonance with most public sector actors even though the specific dimensions and instruments might not command general support
- The performance evaluation criteria of service quality, service satisfaction and Value for Money are distinct, but related, constructs.

The distinguishing features of the customers, decision-makers and the nature of public sector services lead to an acceptance that there are many different stakeholders in this arena, each with a different viewpoint of quality and the criteria by which it will be judged. These, along with the emerging conclusions of the research group indicate a need, therefore, for a range of methods of assessment as well as a methodology for balancing or reconciling these diverse views.

Pausing for breath

Thus, the customers, the decision makers, and the contexts within which public services are delivered appear, on the surface, to involve a degree of complexity not experienced in the commercial, private sector. Further, with the shift away from public administration to public management, public service managers now inhabit a world that is infinitely more dynamic and chaotic than ever before. As well as the complexity inherent in the number, variety and interactions between public bodies, there is an increasing demand on all of the agencies delivering public services to work together in a seamless way to put the customer at the centre of the services they receive. The key vehicle for this in Scotland is Community Planning. This places a statutory duty on local councils to coordinate and lead on public services delivery in their area. Further, Scottish government has placed a statutory duty on all other public bodies in the area to engage and cooperate with this process. Thus we have seen an explosion of ‘partnership’ working with the concomitant investment in the creation and maintenance of these partnerships across the public sector in Scotland. With varying governance arrangements, structures and core purposes this ‘community planning’ activity requires considerable skill and resources to match the responsibility and accountability for decisions with their implementation across the many organizational boundaries that exist.

Complexity ideas and their interpretation in public services

The edge of chaos, emergent order and phase transition

Critical incidents in the context within which public services are organized and delivered (such as elections) inevitably provide circumstances where radical and often unpredictable changes in the state of governance in public bodies. These hinge points can result in swift changes in government priorities, the allocation of resources and subsequent service delivery patterns.

The general election of 1997 saw the newly elected Labour government at Westminster deliver the legislation which established the Scottish Parliament in 1999. At a stroke an entirely new tier of government was created with significant responsibilities for the

nation's governance as well as for public services crucial to the well-being of the nation such as health, education, justice, law and order. Within two years the transition to Scottish Home Rule appeared to have been implemented with some elegance. Chaos was predicted but not experienced and virtually no disruption was felt by citizens in the public services they received. One might speculate that this was due in no small part to the expertise of the UK civil service which went about making the change happen in their usual methodical and professional way. Stability over this period was probably also assisted by a national political consensus and as well as relative stability in the social needs of the population, in the mosaic of public service providers, and in the resources available to ensure the effective delivery of these services.

At Scottish government level, it is perhaps too early to say what will be the impact of the recent (May 2007) change from a Labour-led coalition to a minority Scottish National Party (SNP) government. Certainly, the incoming government has radically different views from its predecessor in terms of taxation, education, and health service priorities. Once again, we see civil servants in Scotland who served the previous administration charged with making sense and order out of this potential chaos.

The conduct of the 2007 Scottish parliamentary election itself caused some controversy and potential for chaos. An estimated 150,000 votes cast by the electorate across the country were judged to be invalid due to their voting intentions not being clear. Some suggested reasons for this were that the ballot papers were confusing, that the election took place on the same day as local government elections, and that electronic counting was introduced for the first time. The SNP were returned as the largest party – by 1 seat out of 129 - and many individual seats were won by fewer votes than that of 'spoiled' papers casting doubt on the validity of the result. In a relatively mature democracy this incident appears to have been accommodated with all of the political parties accepting the results as announced. In a less mature democracy it may have led to more serious upheaval, chaos even, than the inevitable rants that appeared in the columns of the Scottish press from politically partisan commentators.

In the local elections contested on the same day as the parliamentary elections, the political map of Scottish councils changed almost entirely – only 2 councils remained unchanged. We noted above the significant shift in many of the 32 councils from single party control to coalition government. By statute these coalitions have to be formed in the first 4 weeks following the election which took place on 3 May 2007. It is worth noting that this transition has taken place in a context where few elected members have experience of coalition-forming or coalition government and where few paid officials have worked in a context other than single-party control. Yet still the schools and leisure facilities are open, public social housing is being maintained and occupied, and personal and commercial refuse is being collected and disposed.

As well as elections acting as clear hinge points where there is a phase transition from one government to the next, there are other circumstances, incidents and events which potentially put public services on the edge of chaos. These include:

- Outbreaks or scares in the nation's health. These can be cyclical (and so predictable) such as the emergence every year of the winter flu virus affecting mainly elderly people; or quite unpredictable such as bird flu and other pandemics from overseas
- International or external incidents some of which are again predictable such as the planned expansion of the EU; or unpredictable events such as the fall of the Berlin wall, or a terrorist attack or some other national, man-made disaster
- The implications of the economic cycle and technological breakthroughs at home or abroad
- Changes in the political, social and cultural fabric of society such as the creation of the welfare state; the emergence of HIV/AIDS; and the increasing importance of environmental issues in the nation's psyche

Each of these provide the opportunity for discontinuity and the radical transformation of services being delivered by and for the public sector as well as the resulting re-allocation of resources away from other, lower priority, services.

Initial conditions, changes, attractors and pattern seeking

The example of the Scottish parliamentary elections given above is an interesting illustration of the principle where a small difference can have a huge impact. Here, a relatively small number of rejected votes in the Scottish Parliamentary election resulted in a minority government by a party with only 47 seats out of a possible 129 and only 1 seat ahead of its nearest rival party. Indeed in one parliamentary constituency contested by the two leading rival parties, the majority was a mere 48 votes with over 1,000 votes rejected as spoiled. A small change in the decisions on the rejected ballot papers might therefore have resulted in overturning the 48 majority; a Labour member of parliament would have been returned instead of an SNP member; the overall positions of Labour and the SNP in the parliamentary arithmetic would have been reversed; Labour would have been the largest party in the parliament; and arguably would have proceeded to form a coalition government with the Liberal Democrats to continue with their priorities from the previous administration. Continuity instead of radical change.

Reflecting on electoral outcomes and the process involved, it is clear that there are a limited number of possibilities for the formation of government at local or national level. This arises from the limited number of political parties for whom citizens could cast their vote. Political parties form the key attractors for government, therefore, and shifts from one shade of government to another tend to be largely unpredictable, contingent on 'events' and actions largely outside their own control, and require the momentum of a significant shift in public opinion to overcome incumbency. Essentially, the characteristics of attractors.

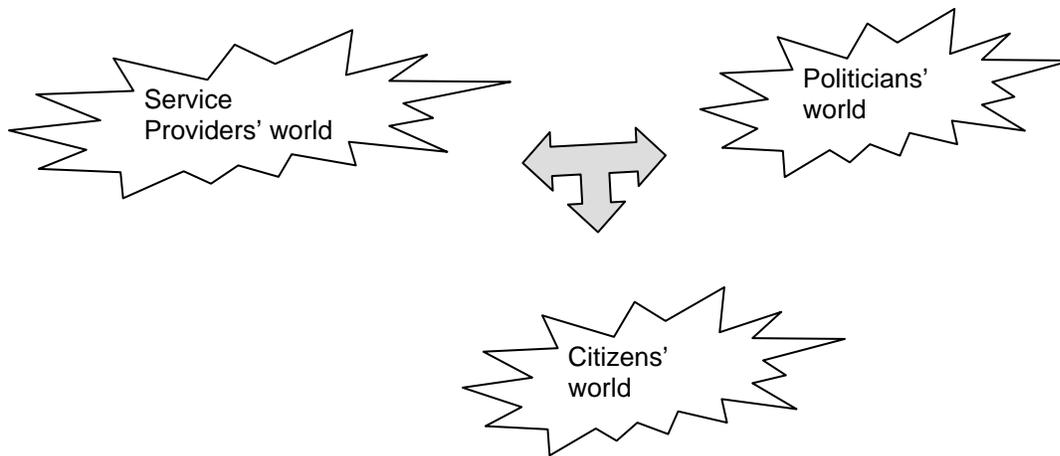
Attractors can be seen at the more mundane level of service commissioning, provision and delivery. As well as using different delivery agents, the dis-aggregation of service priorities to service groupings indicated in the diagram above may be done according to professional area of expertise (e.g. legal services), by service area (e.g. housing services), by client group (e.g. services to/for children), or by geography (e.g. services by local area). Further, having determined the service groupings delivery may be directly provided, it may be commissioned from the private or third sector, it could be co-

delivered with partner agencies from the private, third or public sector, it might be in-sourced as well as out-sourced, and so on. The process of options appraisal required under the Scottish variant of Best Value has led to a (finite) range of service delivery possibilities which should be considered to achieve the most efficient, effective services. Again, these might be regarded as attractors – stable until there is a reason and momentum for change.

Self organization and pattern seeking

Public services strategy and operational performance are usually the outcome of a complex and dynamic set of interactions and negotiations between many public, private and third sector provider organizations, different public bodies, local communities and political people – all with very different professional, management and service interests. These worlds are radically different but are linked by policy, political and service agenda which can interact and influence each other over time in a complex way. Their boundaries and relationships are patrolled as part of the superstructure by civil servants and political parties and around the services infrastructure by public servants, service providers and by citizens, communities and their representatives of interest or geography.

At any point in time the Politician's world may be very stable since there are sets of rules and protocols by which they individually organize themselves and the services they decide on and determine – the 'DNA' of the codes of the UK civil service and public servants, the legal and legislative frameworks of government and elections, and the acceptance by all parties of political policy decision-making and implementation by legally constituted government. All of these provide a pattern to public sector provision and a stable background against which the potential for chaos occasioned by elections and other natural and man-made disasters exists and is managed.



The service Providers' world may also be very stable since, at any point in time, they will be working with(in) time-agreed contracts, rules of engagement, and existing laws governing business operations. Arguably, the landscape and pattern of actual service delivery in the public sector is no more turbulent than that of commercial and third sector organizations operating in an entirely commercial environment. Indeed, the public sector is often accused of moving at a snail's pace with monolithic, bureaucratic structures incapable of flexibility or change. Recent experience indicates a willingness to embrace organizational change and to adopt cultures that are more agile and 'business-like' – subject, of course, to long-established public sector principles of honesty, accountability and transparency. There is also some stability and order to the cluster of over 200 public bodies mentioned earlier in that most have been established by governments in the past and require decisions of government to change or dissolve.

And the Citizen's world too has as much stability in relation to public services as it does for all of the other services and interactions in which people as customers engage. Recent work (Dowding and John, 2006) supported by the ESRC have identified relationships between public service quality and the exercise of 'voice' and 'choice' by citizens indicating more freedom to exit is exercised by citizens with commercial as opposed to public sector services. Moreover, citizens have all of the rights as customers when receiving public services – and more, since they have the right of access to information and influence if only through the ballot box and Freedom of Information acts.

Summary and Tentative Conclusions

Public services provision in Scotland is made complex by the nature of the services themselves and the contexts within which they are delivered; the characteristics of the customers receiving and paying for the services; and the demands for synthesis and reconciliation made on decision makers. Public services appear to exhibit characteristics of complex adaptive systems in that they are affected by incidents and events which leave them on the edge of chaos, yet appear to move from one relatively stable state to another. The public service network manifests pattern-seeking behavior and is self-ordered over time although small changes or differences in initial conditions can have profound impacts on the resulting political and service delivery systems. There also appear to be an identifiable and finite range of states to which these systems are attracted.

All of these characteristics lead to the conclusion that analysis and improvement of public services might benefit from the application of ideas from complexity science. The unpredictability and turbulence implicit in complex adaptive systems indicate that it might be misguided to apply simplistic notions to address and deal with service change/redesign, organizational (re)structuring, culture change, and service quality improvement.

With the increased emphasis on managing professional and personal networks as well as delivery through/by organizational alliances and partnerships there will probably be a requirement that managers and leaders have highly developed emotional intelligence and very skilful in relationships management. Moreover, the systems and processes used to design, create and maintain public service delivery need to be kept under dynamic review and environmental monitoring, subject to ‘futures’ analysis and regular scenario planning if they are to remain relevant, effective and efficient in meeting the changing needs of their decision-makers and recipients.

The implications for organizational management, leadership and excellence in this context are therefore potentially profound as well as essential in meeting citizens’ needs.

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CHAPTER NINETEEN

Third Generation Quality Management II: Alignment Implications for the Business Proposition, Strategies and Value Creation

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Introduction

Businesses are increasingly battered by their external environment and have to respond to a number of new pressures and agendas. These include all forms of stakeholder demands such as to look after their staff, care for the customer, produce in a sustainable manner, address issues of child labor, etc. Generally these demands are labeled a quest for Corporate Social Responsibility (CSR) or Sustainable Development (SD). CSR and SD are considered to be two intertwined societal-organizational ‘movements’ which are addressing the changing role of business in society. At present a growing ‘choir’ of voices from academia, business and politics can be heard creating growing awareness around this ‘inconvenient truth’. So Al Gore, stand side-by-side with Ed Freeman, David Korten, Naomi Klein and Alfred Stieglitz. However, while the interest in these prophecies is high, little (organizational) action seems to be evident.

Organizations are operating in both a business and societal environment. The acceptance of this ‘double’ environment has gradually led to the recognition of various groups of

traditional stakeholders (such as employees, suppliers and stockholders) and new stakeholders (such as NGO's, Governments, and local communities). It has been shown that both groups of stakeholders have an impact on the way a company operates. This is reflected in the stakeholder model of the corporation which now seems to be well accepted. The essence of our earlier proposal that we are entering a Third Generation of Quality Management is that companies should recognize that they operate in a world of stakeholders and that they need to respond, in one way or another. This requires the creation of different forms of value that reflect their differing demands. However, because these stakeholders represent different interests, conflicts and dilemmas are inevitable. Business has been operating for decades in a tradition of one-dimensional economic value creation. What this movement suggests is that additional forms of value creation need to be recognized and accepted. Some respond by developing the 'business case' for CSR and SD. While this is an interesting and even a promising development, the focus of this pursuit of a business case remains chiefly on singular economic value creation.

Companies respond to stakeholder demands by deploying all kinds of activities, thus almost 'incidentally' establishing various approaches or 'sub-strategies'. These sub-strategies may focus on HR, procurement or community involvement. However, it appears that these activities often stand alongside rather than being integrated into the dominant business strategy. They live a life of their own and seem hardly connected with the actual business of a business. Circumstantial evidence would suggest that this alignment is much less than one would expect. The question then emerges: how do they align and in what way should they align? This alignment we think is crucial. If alignment is not realized these activities designed to respond to stakeholder pressures remain a kind of 'modern philanthropy', a charitable exercise that has nothing to do with the business of business. Alignment can be translated as horizontal and vertical congruence and is based on a process of strategizing. By strategizing a company 'makes' intentional choices about how to position itself in the marketplace. The outcome of this continuous process should lead to an identifiable business proposition. The heart of this proposition should be multiple value creation for various stakeholders. However, how companies can strategize

to ensure alignment between the demands of various stakeholders and the business proposition remains the key question.

This contribution sets out to investigate this strategic process of alignment between the business proposition and the creation of multiple values. It does so by taking an established and recognized management model (EFQM) and adapting it so that the issue of alignment becomes transparent. The choice of an established model is based on the assumption that their proponents suggest that they are more than a program – they have to apply to the whole organization. This is the same as saying that they need to align with the business proposition. It is therefore argued that the essence of long-term success is to link stakeholder responses to the business proposition. This may be very difficult and may, in the longer term, involve modifying the business proposition itself.

The modern business corporation has been the focus of numerous scholarly articles and research activity for several decades. Amongst those interested in this phenomenon are those who have had some involvement with the quality movement. These scholars have demonstrated that as organizations have become more central to the maintenance of all aspects of life in contemporary society, so too have they become the target of enormous criticism and negative comment from sectors of that society. Calls for greater corporate social responsibility, more sustainable development and the general consideration of broader social and environmental issues have become commonplace.

Organizational theorists recognized many years ago that organizations, including the business enterprise or corporation, are not closed systems. They rely on interaction with their environment in some way, usually in terms of inputs of raw materials and labor and the delivery of products and services to customers. This has been conceptualized into a stakeholder perspective of the corporation where those who have the ability to affect the inputs, or are affected by the outputs, are conceptualized as stakeholders. Organizational theorists have grasped this concept and made much of the need to manage stakeholder relations in order to achieve corporate success.

Not so well hidden amongst this conceptualization was the idea that some of these stakeholders are not interested in business success or corporate profitability (Freeman, 1984). They are driven by other imperatives such as social justice, labor rights, child poverty, etc (Andriof and McIntosh, 2001). While those responsible for managing these modern corporations may also believe strongly in the same things, the thrust of most management texts and other literature has been to encourage them to focus on the things seen as relevant to business. The popularity amongst managers of Sun Tzu's *Art of War* is partly a reflection of this attitude.

This paper follows on from a series that has suggested that there is a fundamental change occurring in both the organizational literature and the practice of management. This includes a change in the way the corporation is conceptualized and the role that issues that are outside of the traditional business context are handled. This paper attempts to build on these ideas by looking at fundamental questions as to how the corporation should be structured to achieve success in this new environment. There are many examples where so-called strategies are established to address particular issues of concern to those stakeholders representing broader societal issues. However, we regard these as tokenism as these (sub) strategies are rarely aligned strongly to the over-arching strategy or business proposition of the corporation. On the other hand, we have uncovered examples where corporations are genuinely grappling with this question of alignment. This paper explores this question in order to clarify what alignment means and what its implications are for corporations operating in contemporary society.

Third Generation Quality Management

We have argued elsewhere that the quality management movement is undergoing such momentous change that it is experiencing a generational transformation (Jonker and Foster, 2003). This change builds on, and adds to, the traditional ideas surrounding quality management. Changes in the business environment have necessitated greater emphasis on hitherto less important aspects of management including relationships, engagement, accountability and interconnectedness. At the same time, this has involved attempts to underpin quality management ideas and techniques with a firm conceptual,

even theoretical, foundation and to bring those more in line with mainstream management thinking (Foley, 2001, 2005; Foley, Hensler and Jonker, 2007).

Of particular interest here is the latter where scholars, rather than consultants or practitioners, have turned their attention to fundamental questions about the nature of organizations. The fact that such questions have rarely been of concern to those promoting quality management in the past has led one author to suggest that “quality management has become prey to the charlatan, and today languishes in an alphabet soup of management aids (TQM, JIT, BPR, ZBB, OD, MBO, etc.) as another fad” (Foley, 2005: ix). Without some understanding of organizations, in particular of the business enterprise, it is almost impossible to take a holistic view and to evaluate how (if?) these ‘aids’ actually work. Of particular importance in this quest for understanding is the question of the essential characteristics of the business enterprise, its aims and the boundaries of its interests and responsibilities.

When these questions about the business enterprise are addressed the emerging consensus is that the modern business enterprise is a much more open, interactive phenomenon than has hitherto been the case. This perspective is driven by an analysis of the behavior of modern business enterprises which demonstrates that it no longer singularly focuses on the creation of shareholder value. The evidence is clear; corporations are attending to interests that extend beyond profit. The quality movement has been part of the pressure exerted on business enterprises to open their area of concern to include the customer in all its variants. Others have ensured that greater attention is also paid to suppliers and to staff, and more latterly to social and environmental interests that would not have been considered a few decades ago. The literature has encapsulated this into a stakeholder model of the business enterprise (Freeman, 1984; Key, 1999), where the phenomenon of the business enterprise is viewed as a collection of self-interested parties that have come together to create value(s) through their common actions.

We therefore see the corporation or business enterprise as a collaboration of multiple and diverse constituencies and interests leading to a nexus of contacts and contracts. In

general these contacts and contracts are with entities that we refer to as stakeholders. Our stakeholder view of the corporation integrates stakeholder relationships within the firm's resource base, its industry setting, and its socio-political arena into an analytical framework in which we make a distinction between the social context and the business context in which a company operates simultaneously. Our central proposition is that organizational value can be created (or destroyed) through relationships with stakeholders of all kinds: resource providers, customers, suppliers and social and political actors. Therefore, effective stakeholder engagement involving the creation and management of relationships with various stakeholders for mutual benefit in the short and long term is a critical competence for corporate continuity and a defining characteristic of Third Generation Quality Management. However, stakeholder engagement is of relevance only in terms of the outcomes that result – the value creation that occurs as a result of that engagement. This will only occur if that engagement influences the nature and operationalization of the business proposition or business strategy - the essence of any business enterprise. We will return to this point later.

Operating in both a business and societal context

Corporate leaders have long understood the value of listening and responding to the concerns of their stakeholders in order to take innovative advantage of new opportunities and to anticipate and deal with problems before they become critical. Such activities have in the past often been described in terms of 'enlightened self-interest'. We argue here that organizing specific stakeholder relationships is central to the creation (or destruction) of organizational value, and hence to the core purposes and operations of the corporation. Much of the present focus in the professional managerial literature - and practice - on 'customer relationship management', 'supply chain management', 'intangible assets', and so on, already rests implicitly on the proposition that the corporation is increasingly operating as a network of interdependent people, processes and organizational configurations bound by multiple interests. These all exist in the business context and are well accepted and practiced as core competencies.

Progressive leaders have also recognized the need to extend this competency to stakeholder issues concerning the societal context. In the past these issues were generally regarded as being outside the purview of business. As calls for corporate social responsibility have increased, so too has acceptance of the need to respond to these issues. According to Sethi, (1979) and Arriga and Mele (2004), it is possible to identify a series of stages that corporations have gone through, or are going through, as they move from a resistance or denial approach to more of a proactive approach to these issues. We contend that this again represents an extension of the same phenomenon – that of a corporation operating as a network of interdependent people or groups, processes and configurations bound by multiple interests.

In one sense, the situation can be seen as impossibly complex as many stakeholders have multiple roles. Employees can also be members of environmental pressure groups or even customers of the business that they work in (Foster, 2005). In another sense, it can be seen as surprisingly uncomplicated. If the subject of the particular issues promulgated by these diverse stakeholders is ignored, the essential challenge that faces all organizations (in particular the business enterprise) is the need to operate within an open networked environment characterized by multiple (often competing) interests and perspectives in a manner that creates value for those involved.

The latter comment is not to deny the complexity of the situation faced by managers. Rather it is to focus on the fact that the core competencies required to manage a modern, multifaceted business enterprise that has found itself facing issues hitherto not commonly addressed are much the same as those required previously. The issues themselves may be more complex, but the way in which they can be addressed requires the ability to bring groups with different interests together, to develop common understandings about ends as well as means, and to recognize what value creation implies to each party in the network.

In order to operationalize this, the business enterprise needs to be structured and managed appropriately. Trying to conceptualize this and to determine its implications becomes the real challenge. The evidence to date suggests to us that we have a long way to go in this

area. There is appropriate intent amongst many in business. What quality management scholars should be working on is to help them to identify what this means in terms of structure, process and outcome. It is to this that we now turn.

Future Quality Management Models

As we move into this new reality where business enterprises are engaging with issues that extend into the societal context, the challenge is to conceptualize a new generation of management models to help put these ideas into practice. To advance our thinking we need to consider the organizational challenges created by this changed environmental framework. When assessing the different requirements that emerge as a result of the transformations outlined above, three interlinked organizational challenges can be observed. These are represented in Figure 1. We have labeled them as follows: Interface Management, Partnership Management and Organizational Management. Each of these challenges will be described, demonstrating how strongly they are connected.

Interface management

The issue of how to organize the interaction with relevant stakeholders on contemporary or emerging issues in both the business and societal context is particularly challenging. This challenge focuses on the dedicated competencies of an organization to be able to 'listen' to its environment, not only in a business sense but also in a social sense. It raises the issues of how this interaction is organized in terms of systems, its impact and underpinning values. So interface management is not just staying in touch with some self-selected constituencies. Rather, it is a systemic attempt by the organization to listen and respond to its wider environment while not neglecting its traditional responsibilities. Being able to develop and demonstrate this communicative-competence, involves more than talking and listening but being able to translate the result into balanced acts supported by a strategy. Many companies claim to have a (active) stakeholder dialogue but when we look for proof in, for example, annual reports the evidence suggests that this is more akin to manipulation than collaboration (Arstein, 1969)

Figure 1: Organizational challenges



Partnership management

This second challenge raises the issue of how to design the organization, in part or as a whole, to focus on creating partnerships either in value-chains and networks that add value, now or for the future. Businesses have a long tradition in creating partnerships so in this respect there is nothing new here (Patching and Waitley, 1996). When companies start to develop partnerships in the wider societal context as a result of acting upon issues raised through systematic interface management, unforeseen challenges will arise. In order to address these challenges (we might think of issues such as wider societal health problems, natural degradation or a future shortage of water) looking for partners with complementary competencies might be the key. As a result either new value-value chains or networks can be created specifically addressing one or more of these issues.

Organizational management

The third and final challenge addresses the question of how to design – or how to structure - the organization, embedding the role(s) of stakeholders and partners into organizational competencies and the portfolio of processes. It would be rather naïve to think that well-elaborated functional-structural designs could cover all of the challenges raised here. We do not deny that classical functional design has great merits. On the contrary, the basis for value creation as we know it has been brought about due to this design. We think, however, that that particular design was, and still is, based on a

perception of the business enterprise as a closed-system with clear boundaries. When taking the previous two challenges into account it becomes obvious that a company will need to transform into an open system. Designing and managing such a system – one that is in a constant flux – thus becomes perhaps the most fundamental challenge of all three. Our body of organizational knowledge and practice, when it comes to design and management, is still primarily based on closed-system thinking. A whole new universe of research and development challenges emerges here.

So, the modern business enterprise needs to organize itself in a manner that addresses these challenges. Given the central role of processes in organizational management, this means that the business enterprise needs to create and maintain a portfolio of processes (internally and externally) that enables it to participate in (or manage) value chains, networks and projects within both the business and societal context. This will be done to create different forms of value for different stakeholders (simultaneously). When organizations make this transformation, there are three key questions that they will be addressing: (i) how will they organize (structure) themselves within a framework of cooperative networks rather than competitive battlefields?; (ii) what will be the expectation(s) of those in this cooperative network?; and (iii) how will those in these cooperative networks know that the organization has delivered on its expectations? The focus therefore becomes one of using cooperative networks to deliver outcomes (value) for participants (stakeholders).

Value Creation

An important aspect of this changed perspective on the business enterprise that needs to be clarified further is that of value creation. The traditional Friedmanite view of the business enterprise is that its primary purpose is to create value for the shareholders. Explicit in the stakeholder perspective is the understanding that in order to be successful (read to survive) the business enterprise must also create value for those with whom it has a stakeholder relationship in both the business and societal context. This does not deny the shareholder imperative. It simply acknowledges the affect that other stakeholders can have on achieving this. As noted above, the business enterprise is a networked

organization that seeks to harness the diversity of positive and negative contributions of stakeholders. In order to do this, each party to the relationship will require some form of benefit in the form of value creation.

Burke and Logsdon (1996: 497) have acknowledged the centrality of value creation: “Value creation is commonly viewed as the most critical objective for the firm and its strategic decision-making processes. . . . Firms create, or attempt to create, value in their on-going business activities through investments in new technology, new products, brand awareness, production facilities, training and customer service”. This is well accepted in the literature. However, it is the beneficiaries of that value creation which is of most importance in the modern business enterprise. Value creation needs to be considered in terms of all those involved. Without the opportunity for this to occur, in all its forms, then their continued participation (read cooperation) may not be assured.

An organization can be defined as a group of human beings in all their complexity creating value for each other (adapted from Freeman, 2006). Creating value means earning a return on invested capital(s) that exceed the cost of all capital(s) over time (Favaro, 1998). This value creation is based on collaboration and interaction, is context bound, customized by the perceptions of those involved and time dependent. So, if the survival of a business enterprise requires the generation of value then it is crucial that whatever is created (either tangible or intangible in nature) is perceived and acknowledged as being of value by those involved. As this value creation implies transformation of commodities, knowledge, ideas, etc., then it involves the use (and potential destruction) of capital (or resources). It is therefore imperative that the value creation be measured in the context of both the perceptions of those involved and the nature and value of the capital used.

The capital involved can be categorized as human, environmental, financial and social. Each of these is required to provide the means to drive the cooperative networks that use processes to create value. Value therefore can be described in terms of what happens to this capital through the transformative processes. In terms of human capital we are

talking about such things as in-house competencies, talents, capabilities and shared identity required to deliver what is promised. An increase in value in this area would require an improvement of any or all of these aspects to a level that is perceived (assessed) by those involved to be greater than had they not participated. In terms of environmental capital we are talking about the use of natural resources in such a manner that their availability for future generations is not compromised unnecessarily. Financial capital is well understood, even though it now comes in various forms (such as artificially inflated currency, various forms of loans, etc.). Finally, by social capital we mean the social framework within which we all live and the goodwill that is generated within that social framework to create information, influence and solidarity (Adler and Kwon, 2002).

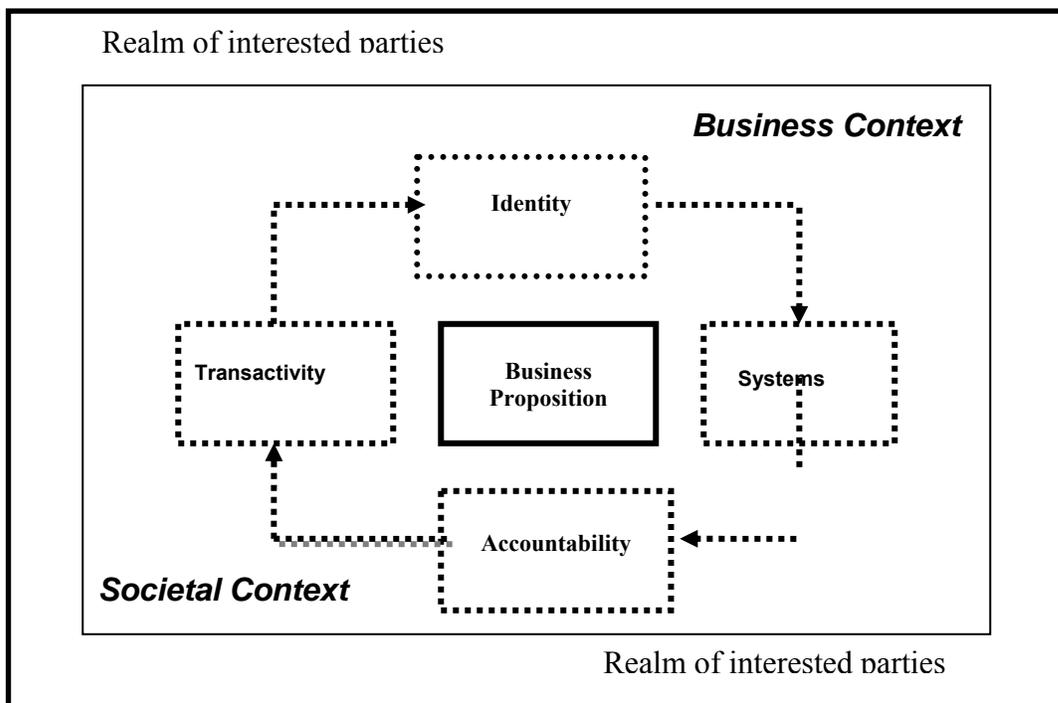
Of course, given that stakeholders and other collaborators get involved on the basis of expected outcomes, an important aspect of quality management is the assurance that one has that the expected outcomes will be delivered. This reminds us of the importance of accountability and its role in maintaining the support of those involved, and brings in an important dimension that has been integral to other quality management thinking.

We are convinced that in order to survive a company should be able to recognize, assess and subsequently organize to address these three management challenges in an integrated way. This should focus on the need to create added value by consciously focusing on both business and societal developments through dialogue and engagement, and by adapting its outputs to these developments. We think that developing this integrated perspective leads to a worldview that is recognizable and really matters for managers, employees, partners and stakeholders. Such an integrated approach based on values (Sharp, 2003) irrevocably shows the way to incorporate wider societal expectations. Still, while this shapes direction it does not help to focus on the actual policies and practices of the enterprise itself.

These ideas can be encapsulated into what we have called a business management model (See Figure 2). The model is structured to reflect all three challenges outlined above (organizational management, interface management and partnership management). The

key components identified in the model are seen as important in the management of the business enterprise as it operates as an open system within an increasingly dynamic context. The identified components of the model are not functional departments. Rather they are organizational responsibilities that will be affected by the strategic decision to engage with or create cooperative networks to produce value in all its forms for those involved (stakeholders). The key issue is how the business enterprise, through each of these components, organizes its relationship with the context(s)¹.

Figure 2: The business management model



There are four important components or responsibilities of management necessary to create value(s) in the context in which it operates. These are:

1. Identity – clarifying who we are and what we stand for. These are the values driving the conduct of the corporation with regards to its societal and business context.

¹ It is important to recognize that the context refers to the realm within which the organization operates. It includes the stakeholders and their interests. Outside this context is the realm of interested parties.

2. Transactivity – the way in which the corporation organizes its interaction with the means of production. This is the way that management mobilizes the entities (stakeholders) and capital(s) that are the basis of value creation.
3. Processes – the way in which the business enterprise arranges its internal operations to transform the capital into goods and or services that represent one aspect of value creation and impinge on others.
4. Accountability – the way in which the business enterprise justifies and reports on company activities that affect those in the context whose support is required for on-going value creation and survival.

These organizational components constitute the main way that the corporation can structure its activities to achieve collective goals and outcomes.

At the centre of the model is the ‘business proposition’, which refers to the way that the business enterprise sees its primary role of producing value(s). It is the overarching strategic positioning of the enterprise to ensure the production of value in its myriad forms for those involved.

This becomes the basis for our claim that quality management has (or is moving towards) a third generation. In this, quality management is about assuring (in a consistent and transparent way) multiple value creation for multiple stakeholders. This is consistent with the parallel work of Foley (2005) who has argued convincingly that “the business aim of sustained success will be accomplished if the enterprise is managed to *optimize the quality of product and service to customers, subject to meeting the needs and expectations of non-customers*” (Foley, 2005: 215; emphasis in original). While it could be argued, as Foley (2005) and Sarasohn (1997) have, that the customer is the quintessential stakeholder, our acknowledgement of multiple value creation places the focus of attention on all stakeholders, irrespective of their rank. Moreover, it places the primary spotlight on the assurance of that value creation. This fits well with the history of quality management.

Before going on to review the issues of the business proposition and strategy development, it would be valuable to relate these ideas (and the model just presented) to a well known management model.

Applying these ideas to the EFQM Model

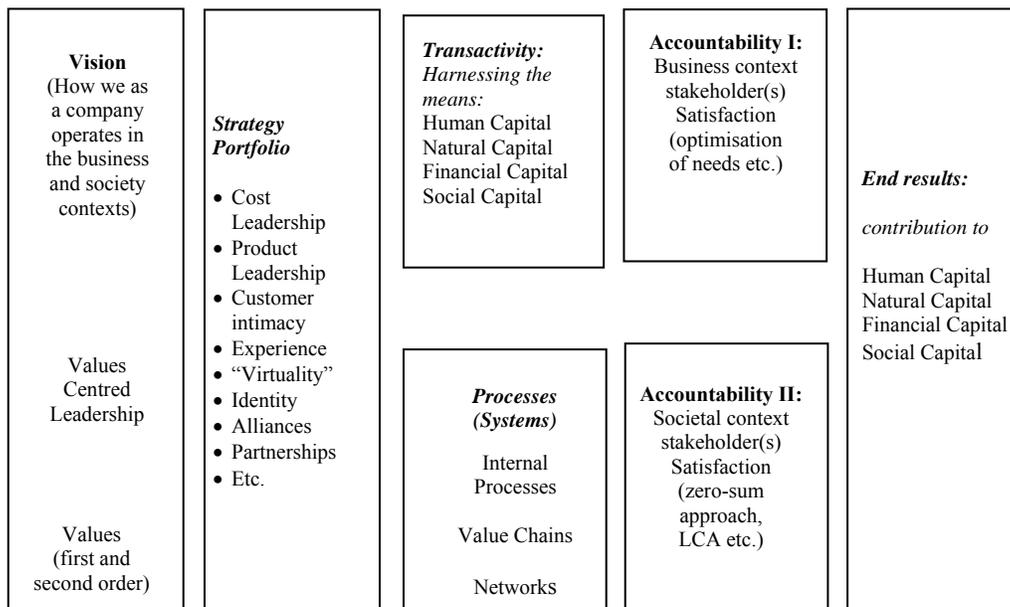
This focus can be further elaborated by using the well-known EFQM Model. (There is no need to elaborate here on the model and its developments - see www.efqm.be for a quick reference). What we propose below (See Figure 3) is an adapted version of this model in order to translate our line of thinking into a holistic framework. This is based on an extensive body of practice and thus recognizable by a vast array of organizations. The departure from the accepted EFQM Framework tries to take into account the developments and reconceptualizations described above.

Starting on the left of the model we think it is essential that a company develops a 'worldview' - a perspective on how they want to position themselves in contemporary society. This will be more than simply creating shareholder value. Developing this vision implies values centered leadership and a recognizable and enactable set of values. These are the values that must be linked to the actual business proposition (first order) and the organization (second order). In this respect it is pleasing to see the recent upsurge of attention given to the role of values in organizations. These concern both the societal and business contexts. This is very similar to 'Identity' in Figure 2.

A company creates value through the use of different types of capital. We make a distinction here between human capital, social capital, natural capital and financial capital. These capitals are seen as inputs hence they are not identified specifically in Figure 2. The important thing for any corporation is the mobilization of these capitals through what we have called transactivity. Having access to these capital types and making sure that they can be harnessed positively for the value creation processes thus become crucial for continuity.

The latter are put to use in a customized business strategy based upon a worldview. Elaborating on Treacy and Wiersema (1995) and Pine and Gilmore (1999) we propose a range of fundamental business strategies. We see a strategy as an intentional operational translation of a company’s philosophy leading to focused action. Choosing elements from these strategies leading to a customized amalgam or adopting one in particular is the liberty of choice of any organization.

Figure 3: EFQM Model revisited



The actual acts of production take place in what we have called the portfolio of processes. Important here is the distinction between on the one hand tangible and intangible process and on the other hand functional and therefore predictable processes verses emerging processes. Furthermore, the scope of processes becomes an important issue. Contributing to various value chains; knowing what in each of these value-chains the contribution is and when it should be created, demands a different concept of how to manage. This becomes even more complicated when acting in dynamic networks. Conventional notions such a controllability, responsibility and manageability thus require a redefinition in order to adapt to this new reality.

On the results side we make a distinction between three categories of satisfaction: business-context stakeholder satisfaction, societal-context stakeholder satisfaction, and contribution to capital creation. The creation of stakeholder satisfaction can be translated into how a company organizes its accountability mechanisms to assure stakeholders that their diverse interests are being delivered in order to create a dynamic level of optimization. Finally, we think the acts of a company can and should be judged on the basis of how its operations contribute in a continuous way to the creation and maintenance of various capitals. This does not imply that creating financial capital (profit) becomes obsolete; the key characteristic of the business enterprise when compared to other forms of organization remains profit making. What changes, and will have a dramatic impact, is that the philosophy behind it moves from profit maximization to profit optimization. The need to take into account various costs that are currently often regarded as external will have a significant impact on the contemporary business model.

Aligning strategies

Any review of the daily papers, trade journals and scholarly literature would suggest that business enterprise's display an increasing interest in many aspects of the societal context in which they operate. This stands alongside their traditional interest in the business context. Freeman's separation fallacy is thus confirmed. Suggestions that the corporation exists in a separate world, isolated from the society (but not necessarily jurisdiction) in which it operates seem to be quite out of step with reality.

There is considerable empirical evidence that companies do respond to the demands of the newer stakeholders which represents interests within that societal context. In the aviation industry, Sir Richard Branson has responded to the criticisms about the high levels of carbon emissions of airplanes by promising to spend over \$US3 Billion on research to address this problem. Over the next ten years he intends diverting all of the profits from his travel firms into a new renewable energy business called Virgin Fuel. In the publishing industry Rupert Murdoch announced in May this year that all of the businesses operating in his vast media empire would be carbon neutral within two years. In the footwear and clothing industries, corporations have responded to criticisms that

they were exploiting workers in developing countries. Perhaps the best known example is Nike which, in response to extensive and consistent criticism of its labor policies, in 1992 introduced a code of conduct which they describe as a “straightforward statement of values, intentions and expectations and is meant to guide decisions in product facilities”.

These are all admirable initiatives that may or may not have come about without stakeholder pressure. What we do know is that corporations operating in these sectors of industry have faced stakeholder pressure about a myriad of different issues. What we also know is that many corporations have developed new programs or policies about many of these issues. Although it is difficult to establish a direct link between any individual corporation’s actions and the pressure exerted by various stakeholder groups, it is now well established that at least some actions are in response to pressure rather than being a consequence of spontaneous strategic development (Zadek, 2004).

The issue that needs to be addressed, however, is whether these actions are simply programs or projects that stand alongside, rather than being integrated into, the dominant business strategy. Do they simply address the specific issue as though it was disconnected with the primary business function of the corporation? For example, the pressure group ‘TurnUptheHeat’ has criticized Sir Richard Branson’s initiative on the grounds that while the project to develop new bio fuels progresses, the Virgin group of companies will continue to expand its fleet and, in the case of Virgin Atlantic, follow a three year growth plan aimed at attracting the premium end of the market where each passenger takes up more space and generates more carbon dioxide on a per capita per kilometer basis than if they target other sectors of the market. While this may be disputed by the Virgin group, it illustrates the potential problem being raised here. Many corporations address these issues as though they are peripheral to the main business of value generation. A project or program is established to address the specific issue while business continues as usual.

This is reminiscent of what happened in the earlier generations of Quality Management. Despite numerous exhortations that quality was of concern to the entire corporation,

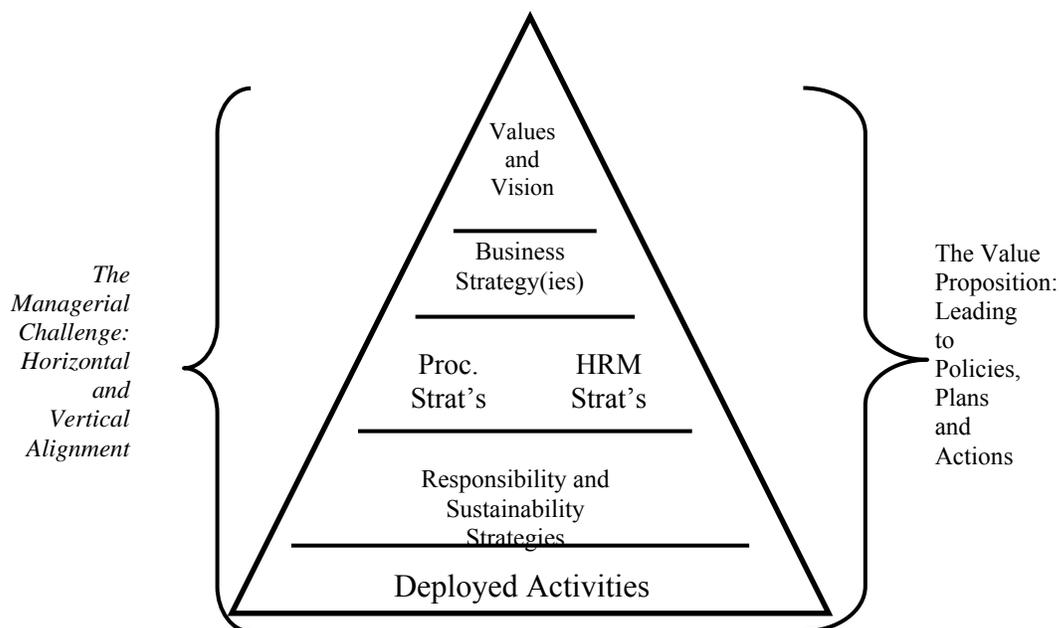
many companies bought into individual programs or used specific techniques such as quality circles, just in time and business process re-engineering. Only those corporations which integrated quality ideas and philosophies into the entire fabric of the operation and aligned their strategies accordingly actually benefited. Is the same thing happening again?

To understand what is going on we need to look in more detail at the nature of strategy and what this means for the models proposed above. We see strategy as being about making intentional choices leading to value creation. It involves the deliberate determination of how the corporation will achieve its value creation goals through the deployment of various resources at its disposal. This is the *how* side of the equation. We have labeled this the 'Business Proposition' – the way that the business will achieve its ultimate goal of wealth creation.

For several decades business texts have lauded the importance of developing strategies to ensure long-term business success. Authors like Miles and Snow (1978), Porter (1985) and Miller (1987) have developed a range of strategies that are all aimed at improving the way in which the business enterprise can improve its performance by responding to changes in their own capabilities and the business environment. The strategies themselves primarily concern actions in the business context. Porter's well-known competitive strategies were all aimed at this. The cost-leadership strategy, the differentiation strategy and the focus strategy were concerned with what needs to be done to compete with other businesses. In other words, they all concern the singular objective of value creation for the limited number of stakeholders who exist in the business context. Moreover, they tend to be deployed across the whole organization. It was assumed that the recognizable components of the business context would all participate in this strategy and benefit through the creation of whatever value is of interest to them. For example, suppliers would gain value by supporting a particular strategy (e.g., competition), by keeping their costs down, and reaping the financial rewards.

When we look for strategies that extend beyond the business context, they are very few and far between. Moreover, they do not relate to the enterprise holistically in the same way as the more traditional business strategies were intended. Many scholars have pointed out that they rarely get beyond philanthropy, or at best, some form of reaction to an immediate social problem. Figure 4 illustrates this by showing the business strategies at a very high level, thereby influencing a range of other sub-strategies, such as Human Resource Management or Procurement strategies – all of concern in the business context. They are linked to the values and vision that are driving the direction of the whole corporation. Strategies that concern the broader societal context (brought about by pressure or interaction with stakeholders in that context), tend to exist at a much lower level (we have labeled these ‘Responsibility’ and ‘Sustainability’ strategies). These relate very much to the lower level deployment of activities, rather than the broader values and vision that drive the whole organization. Yet it is the latter – the values and vision – translated into a value proposition that drive the corporation and lead to policies, plans and actions. Indeed, for most corporations many of the strategies that we have labeled ‘Responsibility and Sustainability’ strategies have very little to do with the value proposition of the whole corporation.

Figure 4: The Strategy Pyramid



Third Generation Quality Management suggests the need for the alignment of the strategies concerning the business and societal context into a coherent whole. If the modern business enterprise does recognize the contemporaneous existence of these two contexts and is aware of the potential hazards of not engaging adequately with both, then this strategic alignment is imperative. Stakeholders are already targeting internal inconsistencies in corporate activity as shown by the example of TurnUptheHeat exemplified above.

We have identified evidence that some corporations are aware of this potential problem and have attempted to address it. This has resulted in what we call a portfolio of strategies that is the result of deliberate choices regarding the deployment of available capitals, competencies and levels of interaction to create multiple values. Instead of the corporate strategy being only directed to those in the business context, it is concerned with value creation for all stakeholders (even those who exist in and have concerns about the societal context). We have chosen the term ‘value’ carefully as this does not mean that these stakeholders will earn a financial reward. Value to them could mean a reduction in greenhouse gases or less exploitation of child labor. This portfolio of strategies is very complex, leads to multiple value creation and - ideally - is directly related to the main business proposition. The latter is the key. Unless this alignment is achieved then the pre-eminence of the singular focus on shareholder value will remain. So too will the increasingly complex, disruptive and negative actions of activists seeking to get their share of organizational wealth.

Conclusion

In this short contribution we have attempted to further develop our ideas that underpin the notion of Third Generation Quality Management. We have done this by deconstructing the nature of the environmental context in which the modern business enterprise operates. This involves highlighting the (artificial) distinction between the business and societal context within which stakeholders operate in a manner that can affect the on-going survival of the enterprise itself. Having done this we argue that while most corporations

have successfully adapted their strategic imperative or business proposition to the business context (as contingency theorists would confirm), the same cannot be said about their adaptation to the societal context. While a few corporations are actively addressing the question of how the complex issues associated with this broader context can be integrated into their overall business proposition, the majority appear to us to be addressing it in a piecemeal way. The result is a number of ‘sub-strategies’ that relate to specific activities or actions that at best bear very little relationship to, and at worst may even be contradicted by the overall business proposition. We still have a long way to go.

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CHAPTER TWENTY

Reframing Quality Management

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Introduction

During the 90s, many writers began to either question the efficacy of quality management, or suggest that the rapidly changing social and organizational environment was raising questions that the traditional form of quality management could not adequately answer. Aune (1998, 1999) was emphasizing the emergence of the multi-stakeholder organization and the need to extend quality thinking beyond the customer. Radder (1998) argued that quality management should adopt a stakeholder perspective; treat each stakeholder as a customer and go beyond customer satisfaction to stakeholder delight. Also Foley, Barton, Busted, Hulbert and Sprouster (1997) began to draw attention to quality management not having an *explicit* theoretical foundation. Stimulated by the works of Foley (2000 a and b, 2001, 2005) on the relationship between quality management and the multi-stakeholder organization, Foster and Jonker (2003, 2007) and Foster (2005) proposed a form of quality management that is sufficiently different to

warrant being described as a new (third) generation. This paper is a continuation of the line of questioning suggested by Aune, Radder, Foster and Jonker (and a growing number of others) and an attempt to identify where those questions have taken, or might take, quality management. To address those issues our paper is presented in two parts.

Part I looks at the history of quality management until 2000 and shows that quality management has been changing since it was first formalized by Walter Shewhart and popularized by Crosby, Deming and Juran. Part II introduces the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) and argues that following its fifth meeting in Sydney in January 2006 it has become possible to identify the principal features of what appears as the outline of the next stage in the evolution of quality management. In Part II quality management is presented as a *theory* of management that can be viewed as an evolutionary step and a formalization of the Aune/Radder notion that customers are one of many stakeholders *that must be satisfied if the organization is to have long-term success*. In this view, customer satisfaction is a *means* to achieving the aim of the organization and may be (and most often is) constrained by the need to satisfy other stakeholders. The development of an *explicit theory* of quality management provides a foundation and reference point that has hitherto been lacking in the quality management literature. The paper concludes with an identification of those issues that must be addressed before third generation quality management can be promoted as a guide to organization success. Although considerable progress has been made to draw quality management back from the brink of extinction and give it twenty first century relevance, much work is yet to be done; indeed the most difficult issues probably remain.

PART I

Like other management concepts, quality management has undergone several changes since its foundations were laid by Walter Shewhart in the 1930s, adopted in post World War II Japan and popularized throughout the world in the books and seminars of American management entrepreneurs in the 1980s. Perhaps the most significant feature of the post-war evolution of quality management was its neglect by management scholars and capture by a few quality consultants, each of whom adopted different views on the quality concept and promoted their particular form of quality management as the “one best way”.

The application of Shewhart’s work on quality control and on the use of its associated methods and statistics-based tools to identify and reduce process variation, later led to Shewhart’s ideas being described as a method for managing the whole organization. This evolution became known as quality management and later popularly described as Total Quality Management, or TQM. Although there were to be many variants, quality management provided the foundation for an international standard on quality assurance (ISO 9000) and many quality and business excellence awards, starting with the Deming Prize in 1951. Few saw it at the time, but those differing interpretations, the often simplistic ways quality management was promoted, and an almost exclusive emphasis on doing and neglect of empirical research, were to lead to its eventual rejection as a management fad.¹

Given the complexity of organizations, the accelerating change occurring in the environment in which organizations operate, and the lack of a clear definition of TQM it is not surprising that TQM met with mixed results. In those circumstances, it is perhaps surprising that TQM had the success it did. Put differently TQM has had a checkered history. Many authors (e.g., Garvin, 1988; Dale, 1999) have traced the evolution of

¹ It is important to here draw the distinction between the suggested ways to work (PDSA, process approach) and the statistical tools of quality management, which have grown in use and relevance, and the whole-of-organization management model that gave pre-eminence to the customer and saw quality of product and service as the guiding strategy for all organizations at all stages in their development.

quality management and used its several distinctive forms for describing that history. Dale, for example, describes four levels of quality management; inspection, quality control, quality assurance and TQM. Although any such classification has its difficulties identifying the points of transition, and our approach is no different in that respect, we have chosen a temporal rather than a characteristics perspective and look at four periods: before 1930, 1930-1980, 1980-2000 and 2000 - to the present.

Managing for quality before 1930

It is not difficult to find historical examples of practices to assure that customer needs relating to quality are met, and that managing for quality has an ethical component: “do to your customer what you would want others to do to you when you are a customer”. A well-known example of an attention to quality is the medieval artisan guilds, which included crafts such as blacksmiths, weavers, masons, architects, bakers and butchers, with each guild setting and enforcing standards for good workmanship and ethical conduct. Perhaps the best example of quality control measures taken by the guilds is the masterpiece procedure where to gain membership an apprentice had to produce a “masterpiece” for examination by the guild masters. Besides establishing and maintaining product standards, the guilds also determined how much could be expected from a workman - a task later assumed by the trades unions.

With the onset of the industrial revolution and the widespread use of interchangeable parts and machine tools, the role of the guilds declined and they soon disappeared as a major force for achieving product quality.² In 1778, Honoré Blanc began producing firearms with parts that were interchangeable rather than uniquely manufactured for a single weapon (Quinn and Kovalevsky, 2005). This principle of producing parts to a system of pre-constructed filing jigs quickly made mass production viable for all sorts of products, and factories with workers able to do a specific well-defined task quickly replaced the artisan capable of producing an entire and unique product. First the guilds, and later the trades unions regulated such matters as how many bricks a bricklayer could

² Mass produced and interchangeable mechanisms were used in some half a million arbalests in Liang Hsiao Wang's army in 160 B.C (Hansson, 2002, p. 112).

be expected to lay each day, or how much coal a worker should shovel (Taylor, 1911). If workers did more than the regulated amount, piecework contracts would be adjusted so the worker had to do more for the same pay. Frederick W. Taylor had noticed that this arrangement led to soldiering, i.e., to stall and work slowly, and concluded that this would have negative consequences for both worker and employer.

Taylor observed that manual labor could be made more efficient by simplification and standardization of work tasks and proposed separating the functions of execution and control and sharing attendant productivity gains between the workforce, owners and consumers (Taylor, op.cit., p.114):

It does seem grossly unjust when the bare statement is made that the competent pig-iron handler, for instance, who has been so trained that he piles 3 6/10 times as much iron as the incompetent man formerly did, should receive an increase of only 60 per cent., in wages.

It is not fair, however, to form any final judgment until all of the elements in the case have been considered. At the first glance we see only two parties to the transaction, the workmen and their employers. We overlook the third great party, the whole people,- the consumers, who buy the product of the first two and who ultimately pay both the wages of the workmen and the profits of the employers.

Henry Ford further extended Taylor's ideas by adopting large-scale moving assembly line manufacturing to produce cars at a markedly lowered cost.³ Ford identified standardization as central to cost reduction; which he reflected in his admonition that you could have the model T in any color – as long as it was black. Ford's view of standardization was extended not only to how work was to be arranged, but also to production layout; sometimes of entire plants (Ford, 1926, p.82):

We believe (and it was fully developed in *My Life and Work*) that no factory is large enough to make two kinds of products. Our organization is not large enough to make two kinds of products. Our organization is not large enough to make two kinds of motor cars under the same roof.

Great efforts were put into standardization as means to both reduce costs and to increase productivity when mass production was introduced. Production layouts from assembly lines to jigs were developed so high-quality products could be produced by newly hired and untrained workers rather than skilled tradesmen. As was soon to be discovered,

³ Isambard Brunel had used moving boxes between workstations, a forerunner to moving assembly lines with subdivision of labor for production of blocs used in British ship making. Replaceable parts manufacturing had been combined with moving assembly lines for wagon making in the 19th century (Hansson, 2002, pp. 396).

however, scientific management was but one piece of the quality puzzle and the drive for increased productivity could sometimes reduce quality.

Walter Shewhart, who had a similar appreciation of standardization to that of Taylor and Ford (he worked as an inspection engineer at the Western Electric Hawthorne Works in the 1920s) put forward the then radical idea of not inspecting products to maintain quality; he argued that manufacturing processes should be controlled using statistical techniques, so defective parts were not produced. Shewhart pointed out that inspection was costly, the rework of rejected parts was an avoidable expense and that not only could quality be measured, it could also be controlled. If the processes were controlled using statistical considerations, the variability of products could be reduced and quality could be improved (Shewhart, 1931). The genius of Walter Shewhart was to show the relationship between the long-established discipline of statistics and quality of product.

Development of metrics and statistics before 1930

Measurement and the use of data to guide decision-making and improve quality of product is inextricably associated with quality management and no discussion of the history of quality management would be complete without reference to the role of statisticians and statistical methods. Aristotle's causality, the inductive empirical reasoning and empiricism of Galileo Galilei, Francis Bacon, John Locke and other philosophers and experimentalists, Pascal's probability, the recognition that variation attends all activities, and that decisions should be based upon "factual evidence" are defining features of the scientific revolution. One historical example of actions taken to control variation relates to acceptance sampling. The problem of using sub-samples to estimate the quality of a population was addressed in a test procedure of coin weights in "The trial of the pyx". This procedure, dating from the 12th or 13th century, involved placing every fifteenth British coin produced in a box called pyx to be controlled later (Stiegler, 1977).

Another significant milestone in the relationship between statistics and quality management occurred when sampling statistics were exposed to formal significance tests

by William Sealy Gosset, who in 1908, while working on quality improvements at the Guinness Brewery, identified the t-distribution (Student, 1908). Ronald Aylmer Fisher expanded on the t-distribution to develop a testing procedure, and Analysis of Variance (ANOVA) and made many other significant contributions to statistics, including laying the foundations for factorial designed experiments to analyze experimental data (Fisher, 1925).

First generation quality management: 1930-1980

Today few deny that it was the work by Shewhart (1931, 1939), particularly his notion of assignable causes of variation and development of statistical process control, that laid the foundation of quality management, and that its first generation started with the ideas contained in his now famous, May 16, 1924 “one page memo”. It was Shewhart (Shewhart 1931, p.53) who differentiated between an objective and a subjective side of quality and argued that the customer was the only true judge of quality.⁴ The objective side of quality was the properties of an object, the subjective side dealt with the goodness of an object about its use, cost, esteem and exchange. Shewhart stated “*it is the subjective side that is of commercial interest*” (ibid. p.54), but also that the role of the engineer is to transfer these wants into physical measures, and to establish the means to ensure these measures are constantly met. Here it is of interest to note that Ford and General Motors, two of the world’s largest business organizations at that time, used the ideas of Shewhart in different ways - Ford to cut costs and streamline production and General Motors to increase customer value. As Sloan (1964, p.154) commented:

“Chevrolets internal statement of policy at this time was that it was our objective to get public reputation for giving more for the dollar than Ford. As a matter of fact, when Ford and Chevrolet were considered on a comparable-equipment basis, the Ford price was not far below that of Chevrolet. On the quality side we proposed to demonstrate to the buyers that, though our cars cost X dollars more, it was X plus Y dollars better. To, we proposed to improve our product regularly. We expected Ford, generally speaking, to stay put. We set this plan in motion and it worked as forecast”.

⁴ The Danish brewer Carlsberg offers an excellent contemporary illustration of this point by advertising their beer as “Probably the best beer in the World”. Carlsberg argues that while they do everything they can to make the world’s greatest beer, the determinant of whether the beer is the best is made the consumer; not the brewer.

After World War II, companies throughout the world sought to satisfy a market that was in short supply of everything. “Competition, in this period, was largely confined to production – that is, whatever a manufacturer could make, customers were waiting to purchase” (Sloan, *ibid.* p.439). A natural consequence of the thirst for products was that quality was of lesser importance; almost any product, however defective, could be sold. This ambiguity, to on the one hand acknowledge the needs of customers, and on the other, ignore them when customers have to buy what they are offered is symptomatic and reflects the accordion-like demand for customer driven improvement activities. When competition is fierce, customer satisfaction is critical to organization success.

The next, and too frequently overlooked stage in the development of quality management (indeed, the first formal description and *teaching* of quality *management* to industrialists), was the six week courses conducted in 1949 and 1950 for Japanese managers by five members of the staff of Supreme Commander Allied Powers (SCAP) General Douglas MacArthur. Those courses conducted by Homer Sarasohn, Charles Protzman, Wilbur Magil, Frank Polkinghorn, and Gilbert Weeks, and the relationship between MacArthur’s office and the Union of Japanese Scientists and Engineers (JUSE) led to an invitation to Deming (in 1950) and Juran (in 1954) to visit Japan. These invitations had the purpose to extend the work of Sarasohn and his colleagues to a wider selection of managers – Sarasohn, et al., had dealt exclusively with the telecommunications industry. The courses presented by Deming under the aegis of the JUSE focused on statistics, in which field he was an acknowledged authority. Juran on the other hand focused on the use of the quality methods and its statistical tools to manage the *organization*. A key message of Juran was that quality was defined by the customer, while lack of commitment to quality related to lack of commitment on corporate strategy. Graduates of the courses presented by Sarasohn, et al., Deming and Juran were instrumental in spreading the techniques and messages they received (Maclean, Harvey and Hayward, 2001).

Many commentators on this period of the development of quality management in Japan now acknowledge that it was Juran, through his emphasis on the relevance of quality for

top management, who made the most significant impact on Japanese management. Juran's role and the importance of his contribution to quality management and the Japanese renaissance have been obscured by naming the Japanese national quality award after Deming. Written as a standard against which Japanese industry could be assessed for product reliability and quality, the Deming Prize became the first formalization of the quality management methods. Given that the American Society for Quality Control had not been established until the cessation of hostilities in 1946, the creation of a quality management standard in 1951 represented an astonishingly rapid institutionalization. This was a society where, given the destruction of not only much of the industrial infrastructure but also the institutions that supported it, a relative vacuum attracted ideas that were easily translated – or in Sarasohn's case, could be presented in the native language.⁵

Although there will always be differing opinions on the contributions of Sarasohn, Deming and Juran to quality management in general and the industrial recovery of Japan in particular there is little argument they *and JUSE* collectively created the foundation for a management phenomenon that would transform world markets, give new meaning to the word quality and promote quality management as the magic formula for managing all organizations.

⁵ Quality management literature is replete with suggestions that quality management and even quality control were not understood and applied only rarely by US industry in the 50s and 60s – certainly that was the message conveyed by the 1980 CBS television program that brought W. Edwards Deming to prominence. Two matters would suggest that to be something of an exaggeration. First, as mentioned, the American Society for Quality Control was formed in 1946 and in 1953 had a membership of over 4500, in 53 local sections, including one in Canada and another in Mexico. This essentially statistics focused organization chose not to become a section of the prestigious American Statistical Association on the grounds that quality control was wider than the statistical techniques known by that name [Van Rest, 1953]. Second, there is the Van Rest report [ibid] of the visit to the USA in 1953 of a British delegation from the Anglo-American Council on Productivity to study “inspection methods and organization in the light engineering industry”. The leader of that delegation, Edward D. Van Rest, reported:

“To the statistician the most striking development is the wide meaning given to the words 'quality control'. Over here, and indeed there, the name was for long reserved for the statistical technique involved in controlling a manufacturing process by sample inspection at the time of manufacture. The new conception of the meaning and scope of quality control accepts this as one of the tools but applies the name to the wider management function of ensuring that what is made by a manufacturing organisation is what was intended.”

Another seldom recognized source of ideas for Japanese quality improvement was the American technical assistance program to Japan that ran from 1955 to 1962 and took 3,568 individuals in 345 teams from Japan to study business methods in the US. During that period more than 100 American management consultants and engineers crossed the Pacific to spread the gospel of productivity and quality within large Japanese firms. At the same time, the Japan Productivity Council was formed to provide information on modern management methods to Japanese industry. Tiratsoo (2000), argues that the technical assistance program, though long overlooked in the management literature, had a profound impact “...concerning specific techniques and processes, especially those intrinsic to the discipline of industrial engineering ... at the very heart of efficient manufacturing”.

In the 60s and 70s, the benefits of quality management were beginning to manifest themselves in world markets and many US writers, most of whom had been involved with statistics to identify and reduce variability (usually in manufacturing processes) began to promote quality management as the way to combat Japanese competition. By this time Japanese competition had obliterated entire US industries and threatened to do the same to others. Two of those writers were W Edwards Deming and Joseph Juran. It was the writings and promotions of Deming and Juran that set the parameters that would frame almost all descriptions and applications of quality management for decades and define what we have identified as second generation quality management – a generation that would begin with an explosive growth in the application of quality management (or most often some one or more aspects of it), an equally explosive growth in quality management consultants (Deming, Juran, Crosby and Feigenbaum being widely regarded as management gurus), and quality management viewed as a panacea. The definition of quality moved closer to, or was regarded as synonymous with customer satisfaction and harmonized with the growing consumer rights movement that had been stimulated by Ralph Nader’s 1966 book *Unsafe at Any Speed* [Meeker, 1977].

Although Shewhart had discussed the cost of measures that had to be taken due to poor quality in 1931 (Shewhart, 1931, pp.27-28), Juran popularized the idea into the notion of

cost of poorly performing processes, and questioned the role of the then common salvage department, and argued that process improvements were the route to “extracting the gold in the mine”. To assess the capacity of a process to produce products within specification limits, Juran introduced a statistical measure of the quality of a production process; the capability index, C_p . Another step taken by statisticians to aid process improvement of manufacturing processes was taken in the 1950s when Fisher’s ideas of factorial experimentation (which had been developed for agricultural purposes) were put to industrial use by George Box and his co-workers. Box and his colleagues recognized that in the industrial setting, experiments could be run in much shorter times, allowing for more complex experimental designs and a sequential approach to experimental work. Designs that both compared different treatments and estimated optimal operating conditions were introduced by the response surface methodology of Box and Wilson (1951). Factorial designs were also used when process-variability was targeted by Genichi Taguchi, who popularized the notion of achieving product and process robustness (Taguchi and Wu, 1980).

By 1980 quality control had given way to quality management and the methods and tools that were vital for the rapid acceptance of quality management were in place and well refined. Furthermore, most of those who were to become the impetus behind quality management (with the notable exception of Deming) had established themselves as prominent figures in the quality movement.

Second generation quality management: 1980-2000

When this period started, quality management was in the ascendant. Feigenbaum, Crosby and Juran had published their first works on quality (Juran and Feigenbaum as early as 1951) and an obscure Washington DC based statistician named W. Edwards Deming working from the basement of his home was soon to be the focus of a National Broadcasting Corporation television program titled “If Japan Can ... Why Can’t We.” By 1982 Deming had published his first book on quality and it became increasingly evident that quality management should not be considered as a sub-discipline of business management, shoulder to shoulder with financial management, logistics management,

procurement etc., but a concept for managing the organization. Quality management was sweeping the world and Crosby, Deming and Juran were at the center of an *international* quality movement. However, despite its impact on organization activity, quality management received only scant attention from *management* scholars and as a result the word of the quality gurus went largely unquestioned.⁶

Though many new quality management experts emerged during the 80s (each country generating its own) there was little deviation from the models described by Crosby, Deming and Juran. Somewhere toward the end of the 80s it was becoming evident that perhaps quality management either did not apply to every organization always, or maybe it was more complicated and difficult to implement than its promoters had suggested. That awareness was the result of a growing number of applications proving difficult (and expensive); many not producing the promised results and sometimes a costly disaster.

As reports of quality management failures began to multiply, there were three discernible responses. First, the gurus (particularly Crosby and Deming) continued their promotions in much the same way as before, often suggesting that failure was due to a lack of understanding by managers. Second, an ever-increasing number of organizations rejected quality management as a whole-of organization strategy and while continuing to use its methods sought other management concepts; there were many to choose from. However, the irony was that many of those alternatives were nothing more than cleverly renamed components of quality management. Third, an increasing number of practitioners and management scholars began to look closely at quality management. As a result, negative comment reached a level that could no longer be ignored. One common criticism was that there was no widely accepted description of either quality or quality management. By this time, the position of the gurus and their followers had become so differentiated and so entrenched that it was difficult to find a satisfactory answer to the question: What is

⁶ Here it is useful to distinguish *management* scholars from those mathematicians and statisticians that played a major role in developing what came to be described as quality management technology. In contrast to management scholars and economists working on the organization, and particularly the business firm, the contribution of mathematics and statistics has been profound; indeed it is those disciplines that have essentially defined quality management. It can be argued that those scholars “captured” quality management, with the result that it was widely regarded as a set of tools rather than a whole-of-organization management strategy.

quality management? To some extent that issue was overcome by the “creation” of the term TQM, which had the side effect of uniting Deming and Juran in opposition to it.⁷

About the time quality management was undergoing its first scrutiny (Garvin, 1988; Hermel, 1989) and troublesome issues were being identified, the International Organization for Standardization (ISO) produced a quality assurance standard – ISO 9000. That standard, first published in 1987, was essentially an extension of American military standards (Z1.1, Z1.2 and Z1.3) through the Allied Forces Quality Assurance Plans (AQAP) and British, Canadian and Australian quality system requirements standards. At that time, or marginally later, many countries decided to follow the Japanese Deming Prize example and develop a Quality Award based on a set of criteria that defined high quality business operations. The most notable of those awards were those created by the US government (the Baldrige) in 1987 and the European Foundation for Quality Management (EFQM) in 1991. Both ISO 9000 and the award criteria provided a consistency and a way of assessing the efficacy of quality management that had until that time been difficult if not impossible to achieve – despite an increasing use of the acronym TQM to describe quality management, there was no universally accepted description.

By the mid-1990s, quality management had ceased to be considered the panacea it was during the 80s; the influence of the gurus had waned, failures were being widely publicized, and in 1994 the American Academy of Management focused on quality management and published a special edition of *The Academy of Management Journal* on the subject. This first concentrated attention of leading management scholars offered an explanation to the increasingly frequent failure reports, and the special issue left little doubt that the lack of an explicit theory and empirical support for many of its tenets raised serious doubts about its efficacy. The following extracts from that journal illustrate that far from being a panacea, quality management was considered by those scholars as

⁷ When asked about TQM Deming responded “...there is no such thing. It is just a buzzword. I have never used the term, as it carries no meaning” (Boaden, 1997, p, 156). Juran (1991, p.51) commented: “As far as measuring the [TQM] results that have been achieved, there’s a big information vacuum out there. Hardly anything useful is going on as far as evaluating results”.

seriously flawed and that while the emperor may not have been naked he was looking a little shabby, and certainly not fully dressed.

Grant, et al., (1994, p.30).

TQM, on the other hand, has no explicit theory. Indeed, one of the reasons business schools have been unable to comprehend TQM's power and potential is that *it appears intellectually insubstantial.* Deming's "Fourteen Points", for example, combine seemingly commonsense principles of management ("institute training", "institute leadership", "break down barriers between employees areas", and "end the practice of awarding business on price tag alone") with a number of folksy, yet quirky, maxims ("drive out fear", "eliminate slogans, exhortations and targets for the workforce", "eliminate numerical quotas", and "adopt the new philosophy"). *However, we argue that a set of theoretical assumptions does underlie the principles and techniques of TQM. Together, these assumptions constitute a management paradigm that contrasts sharply with the economic model* (emphasis added).

Wilson and Durant, (1994, p.137)

TQM applications are increasingly viewed with skepticism in the private sector, a skepticism influenced by anecdotal and empirical analyses stressing its decidedly mixed results (Mathews and Katel, 1992; Dumas, 1989; Clemmer, 1991; Mathews, 1993). Despite proponent's warnings not to expect short-term cost savings; many CEOs have grown cynical upon seeing little change in their companies' earnings statements. What is more, Mathews (1993, p.H1) reports that private sector consulting firms in the 1990s are thriving on the "TQM repair work" spawned by TQM "miscarriages and abortions" crafted in the 1980s.

By the end of the 1990s total quality management had lost much of its gloss, and was being widely criticized and rejected as a management fad. As one of the authors commented in February, 2000⁸:

As it has been presented in the early literature and at conferences (and sadly too often presented and promoted today) quality management reminds one of the fable of the blind men and the elephant. Descriptions of the key features, (leg, tail trunk etc – or perhaps only the extremities if those features) is excellent, but the extrapolation from them yields nothing like a meaningful picture of the whole. In the same way that each blind man forms a vision of the whole by examining a part (or a part of a part), promoters of quality management have written books and articles and presented seminars that have been about parts, or visions of the whole drawn from a knowledge of one or a few parts [Ackoff, 1999]. Like the blind men who, despite their care, skill and sensitivity, were unable to accurately describe one of nature's most extraordinary creatures, the literature of quality management has failed to identify something equally extraordinary – a rigorous and coherent management theory, uniquely appropriate to the needs of the contemporary business enterprise. Too often, to borrow from Albert Wohlstetter's remarks on theory and the social sciences [1967, p. 302], maps, brochures, the purchase of compasses, machetes, bush jackets, and rakish tropical helmets have been used as substitutes for an uncertain, hot and sweaty journey.

⁸ Foley, Kevin. (2000), "W(h)ither Quality Management", *Proceedings of the Fourth International and Seventh National Conference on Quality Management*, Sydney, p. 301.

A not insignificant factor in the changing fortunes of quality management in the 1990s is that Edwards Deming died (in 1993), Juran entered his 90s, Crosby his 70s and Feigenbaum was in his 80s.⁹ Accompanying that loss of much of its life force was a steadily increasing critical literature and many reports of high profile organizations either failing after winning a quality award (Wallace), or quality management failing to live up to its promise – Florida Power and Light. Discussing those organizations and their experience with quality management Reed, Lemak and Montgomery (1996, p.202) observed:

It is clear that, similar to other management techniques, TQM is not a quick fix or a “golden egg” solution. TQM is a business-level strategy with components of process and content that both demand attention. As some Baldrige applicants and winners have found out, a slavish adherence to TQM processes, without sufficient attention to content, can not only be a frustrating exercise, but it also can be expensive.

By 2000 quality management was presented in many different guises; as ISO 9000, an Excellence model or Six Sigma, or as TQM. Byrne (1997) observed:

What's as dead as a pet rock? Little surprise here: It's total quality management. TQM, the approach of eliminating errors that increase costs and reduce customer satisfaction, promised more than it could deliver and spawned mini-bureaucracies charged with putting it into action.

Third Generation Quality management: 2000 – The present

Although it is not clear who in the quality management story represents Hans Christian Andersen's “little child” who exclaimed “But he has nothing on at all”, it does seem that by the mid-to-late 1990s it was becoming clear to an increasing number of those that had listened to the gurus and their acolytes that if the emperor were not naked, he was neither fully, nor well dressed.

By 2000 the position had been reached where most (but not all) of those who continued to promote the quality management of the gurus had left quality management behind to promote another management aid, often a variant or part of quality management with another name. The contributors to the Spring Issue of the 1994 *Academy of Management Journal* provided a spark for a revision of quality management, but it was not until 2000 that quality management could be clearly identified as evolving into a discernible new

⁹ Kaoru Ishikawa died in 1989, Crosby died in 2001 and Juran died on February 28, 2008 at age 103.

form. This form was created (by scholars, not consultants) through a combination of either, rejecting or modifying parts of what were previously the defining features of quality management.

The quality management model that was accepted in the 1980s and 1990s had no *explicit* theory, little empirical support, and could be interpreted as assuming customer satisfaction to be a strategic imperative for all organizations at all stages of their development. Often, customer satisfaction was promoted as the organizational aim. Although the failure to understand the importance of theory and empirical research and a misinterpretation of organization reality would be reason enough to either reject the prevailing version of quality management or conduct a major overhaul, the most obvious and compelling reason for leaving the quality management of the 80s and 90s behind was the shift that had occurred in that period from a manufacturing based to a knowledge based global economy.

MAAOE and third generation quality management

As mentioned earlier, despite many commentators (and even promoters such as Juran and Feigenbaum) suggesting the need for change, there was no particular force, or coherence to those suggestions until the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) was formed in November 1998. The initiative of forming MAAOE came from Professor Rick Edgeman (Colorado State University) and Professor Doug Hensler (University of Colorado). Edgeman and Hensler shared a concern that on the one hand there was a widespread and growing use of excellence models of management throughout the world, and on the other hand that those models (and quality management on which they were based) had attracted so little critical scholarly attention that they had neither a theoretical foundation nor substantive empirical support. Having easily convinced each other of the nature and importance of the problem, and the need for it to be brought to the attention of other management scholars, Edgeman and Hensler invited several colleagues whom they knew to be researching in the area of quality management and organizational excellence to a meeting at Colorado State University, Fort Collins in November 1998. At that meeting it was agreed that while there

was clearly a need for further research on quality management and organizational excellence the greater need was for a number of scholars, sufficient to establish a critical mass, to address those management models on an ongoing basis. With that objective in mind, those attending the Fort Collins meeting decided to create a formal organization (MAAOE) and under its aegis invite management scholars from around the world to attend a conference in Colorado in 2000.

Agreeing to establish an organization to be called MAAOE, the Fort Collins meeting set as its objective "...to become the premier interdisciplinary organization driving organizational excellence through creation, dissemination, and application of knowledge relevant to the advancement of organizational excellence". The meeting also chose to use "organizational excellence" to span the more common terms "business excellence" or "performance excellence" that were then in more prominent use. Besides establishing an objective for the organization, the meeting elected Rick Edgeman and Doug Hensler as joint Executive Directors of MAAOE, identified three guiding principles and agreed on a definition of organizational excellence. Those principles were:

- Create and identify a critical mass of ideas and foster an international community of interdisciplinary scholarship focused on organizational excellence.
- Disseminate knowledge relevant to organizational excellence for the purpose of positively affecting organizational practice.
- Encourage the application of knowledge relevant to the advancement of organizational excellence through organizational practice, and to ensure and participate in the application of knowledge in practice.

Organizational excellence was defined as:

The overall way of working that balances stakeholder concerns and increases the probability of long-term organizational success through operational, customer-related, financial and marketplace performance excellence.

The first MAAOE conference was organized by Edgeman and Hensler and held at Estes Park, Colorado in August 2000. The conference was opened by Sean Conlan – President, European Organization for Quality, attracted one hundred and twenty attendees, received

keynote addresses from Harry Hertz (Director, Malcolm Baldrige Award Program and Frans Stevens, (CEO, Dutch Quality Institute), and heard 40 papers that were later published as, *Proceedings of the 1st International Research Conference on Organizational Excellence in the third Millennium*. Support for the conference, the high quality of the papers and three days of stimulating discussion left little doubt that the concerns first shared by Hensler and Edgeman, and later with many international colleagues, were widely supported and there was a strong demand for MAAOE to hold at least one further meeting. It was agreed that a second meeting would be organized by Philippe Hermel and held at the University of Versailles in September 2001. Presented in both French and English that meeting attracted one hundred and sixty attendees from thirty countries, heard seventy eight papers on the theme “*Towards A Sustainable Excellence: Strategy, Quality, Innovation*”, and published two volumes of *Proceedings*. Later meetings following the same pattern as the Estes Park and Versailles meetings have been held in Paisley, Scotland and Melbourne and Sydney, Australia. For the Sydney meeting, the form changed from a regular conference call to an invitation only event. A deliberate decision to gather fewer people to the conference was made by Hensler and Foley to provide more time for discussion of each paper. The reason for the change was the feeling that conferences where people attended to *present*, not to *learn* was unsuited for driving the evolution of quality management.

The reason for describing the evolution and work of MAAOE is that the story of the development of third generation quality management and the role of MAAOE in that reframing has not yet been told. However, the principal motive for bringing the MAAOE role in the reframing of quality management to the readers attention is that if quality management is to be revived it is important that this point in its history does not suffer from being untold and obscured as the nodal points of Japan in the period 1946 and 1954 and ISO 9000.

Although many members of the MAAOE group presented papers on quality management at both MAAOE and other conferences after 2000, it was not until the Sydney meeting in January 2006 that those earlier papers could be said to have coalesced into what Foster

and Jonker dubbed “Third Generation” quality management. The model that emerged in Sydney, although in an early stage of development, emphasized:

- The need for an explicit, unambiguous and empirically supported theory.
- Customer satisfaction through quality of product and service is a means and not an end.
- The shift from a manufacturing to a knowledge based global economy where information, not energy, is the fundamental driver.
- The predominance of multi-stakeholder organizations.
- Recognition that organizations are part of society – they impact and influence society by their actions (and sometimes their very existence) and are themselves influenced and impacted by society.
- The need to recognize the existence of increasing returns organizations and industries.
- The strategic imperative of organizations seeking sustained success is the satisfaction of *all* stakeholders.

Although there is little that is contentious in those assumptions, the same cannot be said about the next steps on the path to reframing quality management to become relevant for the twenty first century manager.

PART II

Quality management for the third millennium: Features, issues and directions for further work

The three features that most clearly distinguish third generation quality management from its predecessors are, a) a stakeholder perspective (and identification of the customer as *a* stakeholder rather than *the* stakeholder), b) an explicit theory of quality management, and c) a distinction between quality management as a whole-of-organization *strategy* and the methods and techniques of quality management.

The stakeholder perspective

The organization environment has *fundamentally* changed since the introduction of quality management and this provides the stimulus for a reframing (revivification) of quality management, but the point of departure from TQM is the recognition that organization success depends on satisfaction of the wants and expectations of *all* stakeholders. Stakeholders are that sub-set of interested parties that are capable of causing the organization to fail or of inflicting unacceptable damage if their interests are not satisfied. Stakeholders are distinguished from interested parties by having both the means of bringing their wants and expectations to the attention of the organization, and by their ability to act if those wants and expectations are not met – stakeholders can be viewed as interested parties with *power*. The significance of the stakeholder perspective does not lie primarily with whom the organization identifies as a stakeholder (and what are identified as stakeholder wants and expectations) but in its introduction of the notion that *stakeholders, and their wants and expectations*, are the basis for organization behavior. It is that behavior, which establishes the relevance of a management aid/theory.

A stakeholder perspective adds four features to the discussion of the contemporary organization and quality management that warrant specific mention:

First, it brings the recognition that in whatever way an organization perceives its environment; it must *always deal explicitly* with several interested, affected entities, e.g., shareholders, customers, suppliers, employees and government. Customers are always *responded to* (they purchase product), however, that response is not *necessarily* about customer interests. In many organizations, customers are not stakeholders and the relationship between the organization and its customers is simply that of a transaction. In such cases, individual customer needs could be ignored without adverse consequences.

Second, it focuses on the organization aim, and the importance of distinguishing between the organization aim and organization strategy. For most business organizations, the aim is to create, and sustain, a return (*including* a profit) sufficient to satisfy the needs and expectations of those who put their resources at risk to establish it, i.e., shareholders in the business organization – the actions taken to achieve that aim describe the organization

strategy. When there is more than one stakeholder (as is invariably the case), the pursuit of a return sufficient to satisfy the shareholder, for example, is constrained by the often contemporaneous need to satisfy other stakeholders; or conversely the ability of the business organization to satisfy its non-shareholder stakeholders is constrained by the need to earn a profit sufficient to satisfy shareholders.

Third, it ensures that non-market goods and resources are neither neglected, nor given secondary importance. Non-market goods range from open-access wilderness area recreation to health and safety improvements, and across resources as different as ozone layer and clean water. These resources can become stakeholder interests that are of identical importance to the organization as those relating to market goods and resources.

Fourth, it neither ignores competitors and product markets, nor suggests that sustainable success is achieved *if and only if* organizations always correctly identify their stakeholders and every stakeholder imperative is responded to immediately it is identified – such a situation has probably never occurred in the history of organized activity. The stakeholder perspective suggests that sustainable success will come to organizations that have a stakeholder rather than a competitor perspective; are sensitive to and engage their environment (they make fewest stakeholder/interested party identification errors), can recover quickly from (inevitable) stakeholder/interested party and stakeholder wants and expectations identification errors, and be sufficiently innovative/clever/adaptable to juggle conflicting and often rapidly changing stakeholder wants and expectations. This position is supported by the observation that the social environment in which the organization must function contains many values that are impacted by the organization (some of those values are *created* by the organization) and that competitors do not impact the organization *directly*, but through the values of the organization's stakeholders.

Stakeholders

It is from the numerous interested parties (that would number in the millions for many organizations) that the organization identifies its stakeholders. Stakeholder wants and expectations are often different, interdependent, in conflict, and in flux, and how they are

expressed and met can take many forms, including politics and bargaining (Freeman, 1984; Schrader, 1993; Andriof, Waddock, Husted. and Rahman 2002; Foster and Jonker, 2004 a, b). Stakeholders must be sufficiently satisfied not to act to inflict unacceptable damage on the organization.¹⁰ However, because some stakeholder wants and expectations are regarded *by the stakeholder* as more important than others the failure to satisfy the less important wants and expectations will not prompt a reaction from the stakeholder.

Faced with that reality, and an appreciation that quality of product and service may not always be the organization's guiding strategy, and customers may not always be a stakeholder, a substantive issue to be surmounted in the reframing of quality management is to explain how organizations deal with the demands, wants and expectations of all those *identifiable* (many will remain unidentified) as having an interest in, or are affected by the operations of the organization. To deal with this issue third generation quality management takes its second substantive step away from TQM, the Excellence models and ISO 9000, by *operationally* defining the stakeholder as: *Those interested parties whose wants and expectations must be satisfied if the organization is to achieve sustained success*. Customer satisfaction may still be optimized, but this is limited by the constraint of having to avoid violating the interests of other stakeholders.¹¹

The multi-stakeholder organization that is the focus of third generation quality management can be viewed as comprising five components; a constant (an invariant core element – the aim) and four variables; interested parties, stakeholders, the stakeholders interests, and the organization's (social) environment.¹² Such an organization has been

¹⁰ It is the nature and extent of the impact on the organization *aim* and not the nature and extent of the stakeholder reaction that determines whether a stakeholder reaction is regarded as unacceptable.

¹¹ Garvare and Johansson (2007) argue that organizational excellence, in terms of promoting both organizational sustainability and global sustainability, implies that the organization should aim to satisfy, or preferably exceed, the interests of its stakeholders without compromising the ability of other interested parties to meet their needs.

¹² Although the expressions "stakeholder interests" and "strategic imperatives" are sometimes used interchangeably, not all stakeholder interests (of which there are many) are strategic imperatives. In another of its difficult decisions the organization must (as they must with interested parties) select from the many, those interests that could invoke organization threatening action by the stakeholder – it is those few that become the strategic imperatives of the few that have become stakeholders.

summarized by Hensler and Foley (2007) as a matrix of stakeholders and stakeholder interests (wants and expectations) with the organization environment as a third dimension that shapes the organization aim and is the source from which stakeholders are drawn.

Third generation quality management suggests that a deep knowledge of stakeholders, the universe of interested parties from which stakeholders are drawn (and may return), and the values that shape stakeholder behavior (and their dynamic interaction) is essential for organization success.¹³ Some of the values of interested parties will be directly impacted by the *activities* of the organization, while others will be influenced indirectly by the very existence of the organization. Sometimes, concerns about those impacts may become sufficiently widespread, and articulated in such a way, that existing stakeholders will use *their* instruments to influence the organization, e.g., customers boycotting a product because a company has used child labor. In other situations, those impacts create concerns of such strength and distinction that they generate their own instruments of *direct* influence. Those concerns then enter the objective function of the organization, not as an interest of an existing stakeholder (as in the example of child labor and customers) but as a new stakeholder – the bio-physical environment can be seen as having followed such a path. An interested party (*albeit* one that may have a high public profile and the affected social value might be widely discussed) will remain such, *until its concern is either taken up by an existing stakeholder, or it acquires the force and mechanisms necessary to directly influence the organization.*

Customers

Third generation quality management rejects the notion that expending resources on “the customer,” via quality improvement will always add value to *the organization*. As Rust et al., (1995, p.58) has pointed out, there is sufficient evidence to show that concentration on the needs of the customer can inhibit the development of new products and services

Organizations do change their aim; however, that does not appear to happen often - and for many not at all.
¹³As mentioned earlier, the task of identifying stakeholders is decidedly difficult and organizations often get it wrong. However, despite those difficulties an organization’s stakeholders remain relatively stable – in the broad description if not in membership. Establishing the interests of those stakeholders has a difficulty several magnitudes higher – these can change quickly and in quite fundamental and unpredictable ways.

(innovation) not yet conceived by the customer, yet when produced cause existing products and services to become redundant:

...the quality revolution is not without its casualties...And firms that have been lauded for their quality orientation have run into financial difficulties, in part because they spend too lavishly on customer service. For example, the Wallace Company won the Malcolm Baldrige National Quality Award in 1990. However, the high levels of spending on quality that enabled them to win the Baldrige also produced unsustainable losses, and within two years they were bankrupt (Hill, 1993). Similarly, Florida Power and Light spent millions to compete for Japan's prestigious Deming Prize (Wiesendanger, 1993). Inattention to rising costs caused a backlash by ratepayers, resulting in its quality program being dismantled (Training, 1991).

From the experiences of these companies, and common sense, it is clear that there are diminishing returns to expenditures on quality. Improving quality helps up to a point, but past that point further expenditures on quality are unprofitable. Of course, many quality improvements result in a reduction in costs that more than makes up the quality expenditures (Bohan and Horney, 1991; Carr 1992; Crosby 1979; Deming 1986). However, such improvements are more prevalent in manufacturing and the more standardized services (e.g., fast-food restaurants) than they are in the highly customized, big-ticket services that constitute the growth industries of the information age (e.g., electronic information services) (Fornell, Huff and Anderson 1994). This is because customization inhibits economies of scale and thus makes individual improvements less cost-effective (Anderson, Fornell and Rust, 1994).

Campbell (1996, p.706) is less subtle in his warning to those who do not see the customer as one of many stakeholders that must be satisfied if an organization is to succeed.

The past 25 years have seen a swing of the pendulum to surplus capacity. Customers have unrivalled choice; suppliers must be competitive to survive. However, as ...was explained in ISO 9004-1: 1994, satisfying customers must be balanced by operational efficiency to ensure that competitive prices and delivery of the goods or services can support the continuing existence of the organization. *"Delighting customers" is a popular phrase but has a hollow ring if the company bankrupts itself in the process* (emphasis added).

Although we have on several occasions indicated that third generation quality management is far from a form that can be presented as model for achieving organization success, the reader could easily get the impression that it is near to that stage of development. While we think the third generation quality management glass is "half full" many would believe it to be "half empty". For example, the stakeholder notion that underpins third generation quality management, while having both strong intuitive appeal and substantial empirical support, is not as simple and straightforward as might first appear.¹⁴ The first complication is that not all individuals or entities identified as interested parties (and usually grouped together as customers, shareholders, employees,

¹⁴ Our view of the stakeholder differs from what currently passes for stakeholder theory. The principal difference is that we interpret stakeholders from the perspective of the organization. We describe stakeholders as we believe *organizations* see them.

etc.) are stakeholders. Furthermore, each stakeholder will have many wants and expectations that range from the imperative (if not met the stakeholder would act against the organization; e.g., take legal action; not buy the product) to the trivial or minor. In which case the organization must make a judgment (as it must do to classify interested parties as shareholders, customers, etc., and identify the stakeholder element of each category) as to which stakeholder wants and expectations are “imperatives”, and which can be either ignored, or put aside for consideration at another time. When an organization adopts a “quality first” strategy, it may well be that although every stakeholder has quality of product included among their wants and expectations, it is only those of the customer (and then only *some* of those) that must be responded to as a strategic imperative – *if the customer is a stakeholder*.¹⁵

Another difficulty with the stakeholder notion is its ambiguity. At any time, at least four individuals or entities may be described as a stakeholder. There are those that are, a) self declared, b) identified by another entity, c) are able to influence organization behavior, and d) are identified as a stakeholder by the organization. Self declared stakeholders and those identified by another entity may be *real* stakeholders (i.e., are able to influence organization behavior) and they may also be identified by the organization as a stakeholder, or they may have no power to influence and be treated by the organization as a non-stakeholder interested party. From the perspective of the organization, however (and that is the perspective taken in this paper), the only interested parties that influence the strategic decisions of the organization are those that *the organization identifies* (correctly or incorrectly) as stakeholders. It is those entities (who may identify themselves or be identified by others as stakeholders, and may have the influence attributed to them by the organization) that we call stakeholders.¹⁶ Ideally, organizations strive to identify all entities with the ability to impede their aim if their interests are not

¹⁵ Those entities treated as customers are not always the final consumer of the product and service. In many cases (perhaps most) the interests of the customer (who may be the distributor or wholesaler) may be different from the final consumers.

¹⁶ A measure of the significance of this difficulty, and the need for empirical research, is that the author’s themselves are yet to reach a consensus.

met, i.e., stakeholder c and stakeholder d would be identical – but organizations do not function in a certain world and mistakes are made.¹⁷

Besides those issues there is the matter of the latent stakeholder identified by Garvare and Johansson, (2007). It seems likely that while identifying stakeholders as they have been described in this paper, organizations would also identify those entities likely to become stakeholders. Unfortunately, we do not know whether such identification occurs (or, indeed if there are other classifications of the non-stakeholder universe) and were it to occur we have no evidence of the role that exercise and those potential or latent stakeholders play in organization decision-making.

A theory of quality management

Foley, Hensler and Jonker [2007] have described the management theory that supports third generation quality management as: *Organizations that identify the need to adopt quality of product as their guiding strategy will achieve sustainable success if the stakeholder imperatives encompassed by that strategy are optimized; while satisfying all other stakeholder imperatives, at least cost.*

Besides being explicit, that theory differs from other “theories” of quality management in many ways.¹⁸ For example:

1. It is expressed succinctly as a theory, and not as a definition, or a set of principles, points, steps, etc.
2. Quality of product and service appears as an explicitly constrained optimum.¹⁹
3. It can be unambiguously linked to a widely accepted theory of organization behavior.

¹⁷ The task of identifying stakeholders (and also their interests) is often assisted by those who identify themselves, or are identified by others as stakeholders. Such identifications direct the organization to interested parties that should be examined to determine whether they are stakeholders.

¹⁸ By deriving a theory of management from the stakeholder-satisficing behavior of the multi-stakeholder, knowledge based organization, and *explicitly* identifying that theory as the theory of quality management, third generation quality management overcomes what has until now been a major impediment to the understanding and effective application of both traditional (Crosby, Deming, Juran) and contemporary descriptions of quality management.

¹⁹ The pursuit of ever-higher levels of quality may be curtailed for reasons unrelated to constraints set by other stakeholders. For example, the perceived optimum may be achieved before any other stakeholder constraints are met, or expenditures on the quality process may incur diminishing returns.

4. It does not rely on the ideas of one author; rather it is drawn from an extensive management, economics (particularly the theory of the firm) and quality management literature.
5. It distinguishes between the organization aim and the strategies necessary to create and perpetuate (sustain) the organization – *quality of product is not the aim, it is a means of achieving the aim.*
6. It distinguishes between quality of product and service as an organization's guiding strategy and the methods of quality management, which may be used to support an organization strategy other than quality.
7. It suggests that although quality of product and service is likely to be a strategic process in most organizations (i.e., one of the rows in the Hensler, Foley, 2007, matrix) it may not always be a strategic *imperative*. Furthermore, if it is a strategic imperative it may be such because of a want or expectation of a stakeholder *besides the customer*. Just as customers are not the only or most important stakeholder, the customer is not the only stakeholder concerned about quality of product and service.
8. Applies only in those circumstances where the organization has adopted a quality first strategy.²⁰
9. It *follows* strategy. It is the whole-of-organization strategy that establishes the criteria for selecting a management theory.

Quality management and the organization/society interface

While highlighting the universal applicability of the *methods* of quality management, the distinction drawn by third generation quality management between those methods and quality as an organization strategy also draws attention to the need to distinguish between

²⁰ Contrary to the view promoted in the TQM literature there are many organizations that *do not* identify the customer as a stakeholder, and furthermore there are also many that identify the customer as a stakeholder but choose to use a strategic imperative besides quality of product and service as the *primary focus* of their management system. However, that is not to say that many of the values, methodologies and tools of first and second generation quality management, are invalidated by other strategies. On the contrary, the PDCA methodology, the process approach, and statistical process control have *universal* validity. It is the magic of the methodologies and tools of quality management that they *concomitantly* enhance quality and reduce cost. Which is very different from the proposition (as was too often made with first and second generation quality management) quality, as a whole-of-organization strategy, has universal validity.

sustainable success of the *organization* (which application of the theory is presumed to achieve) and bio-physical sustainability, and its handmaiden, corporate social responsibility. If, as the theory suggests, organization success is achieved by satisfying only those stakeholder wants and expectations identified as imperatives, and stakeholders represent only *some* of those whose values are negatively impacted by the organization, the quality strategy is perhaps *less* likely to reduce impact on the bio-physical environment and/or lead to greater social responsibility than strategies that give primacy to those issues. If sustainable success can be achieved without responding to the interests of non-stakeholder interested parties and some stakeholder interests are not effectively articulated by those affected (some are not detected until long after a violation has occurred) and many (those regarded as non-imperative) can be, and *are*, ignored by organizations without adverse effect, it seems that irrespective of the strategy (and methods) adopted to achieve the organization aim, the sustainable success/violation of social values anomaly will persist.

However, although third generation quality management is not the answer to reducing the gap between societal expectations and organization performance it *does* offer a different way of addressing that profoundly important concern.

Unlike other social entities such as the family, organizations use resources to create a product; and to do that they must recompense the providers of those resources. The nature and extent of that recompense is a function of the social values (which differ from culture to culture and within cultures over time) that prevail in the environment in which “payment” is made. Put differently, the lower and the upper limits to what investors, managers, employees, customers etc., may expect for their services is dictated for the most part by the values prevailing in the society in which the service is provided. Organizations that do not meet the interests (specifically those regarded as imperatives *by the stakeholder*) of any one of their stakeholders will not achieve sustainable success. Even if organizations *do* satisfy all those interests regarded as imperatives by stakeholders (even in the improbable situation where all interested parties are stakeholders) an organization performance/society expectations gap will still exist

because, as mentioned above, non-imperative interests would be unmet. There would be no gap only in the impossible to imagine situation where all interested parties could be identified, all were stakeholders, all interests were imperatives, and the organization could satisfy those interests, *and remain successful*.

One conclusion to be drawn from this third generation quality management perspective on the organization/society interface is that due to the inability of the organization to identify and satisfy all interested party interests, and the delayed impact of some organizational outputs on social values there is little gain to be had from moralizing about the *existence* of the organization performance/society expectations gap. Similarly, that perspective suggests it is misguided to place the entire blame (as some have) for the existence of that gap (and the responsibility for correcting it) on the organization.

Viewing the organization from the perspective of third generation quality management suggests that efforts to reduce the organization performance/society expectations gap are much more likely to be effective if it is accepted that such a gap will *always* exist and attention is directed to examining the *content* of that gap and finding ways to minimize the extent to which it contains organization-related interests that are held to be of relatively major importance to interested parties.²¹ While the objective of the gap minimization approach is the same as that which focuses on the social responsibility of organizations (reduction of the organization performance/society expectations gap), third generation quality management identifies a different source of the gap, proposes a quite different way of achieving that objective and shifts responsibility for closing the gap from the organization to society - and does not apportion blame. Furthermore, that view identifies the issues to be addressed (the unfulfilled interests of stakeholder *and* non-stakeholder interested parties) and shows how those issues can be addressed, and by whom. Attention is also drawn to the fact that the socio/economic consequences of stakeholders increasing their power and non-stakeholder interested parties becoming stakeholders is not always (or even usually) society positive, even in the long term. Such changes in the relationship between the organization and society can and do have a

²¹ Of course this raises the question of who determines what are “major” interests, i.e., whose values are used.

negative effect on some sections of society, e.g., products and services become uneconomic to produce and unemployment and social hardship occurs for some as organizations close, relocate, or use new technologies.

Of the many lessons to be learned from the third generation quality management perspective on the organization, the key one is that whatever the size of the system under examination, be it the individual organization, an industry, or bio-physical earth, it is neither meaningful nor accurate to use such terms as best, optimal or sustainable without qualification and without the caveat that all “solutions” are sub-optimal. As we have seen, the sustainable success position of most, if not all, organizations is almost certainly sub-optimal when viewed in the industry/region/country in which it operates – see Goldsmith et al., this volume for an example of sub-optimization in the Victoria (Australia) water industry.

Conclusion

Although it may appear otherwise, a strong case can be made that most of the ingredients for third generation quality management are not new (and may well have been used by one or more of the first and second generation promoters) and have been available in the various and varied forms of quality management for forty or fifty years. While those ingredients often produced very different products, and were not put together to deal expressly with the contemporary multi-stakeholder organization, quality management has *always* encompassed many stakeholders (although not always clearly identified), *and* focused on the customer, see Klefsjö et al., (2008). In every one of its manifestations, quality management has sought to maximize customer value; albeit most often without explicit constraint.

One illustration of the ease of moving from second generation quality management (particularly the version associated with Juran) to its third generation, is to remove references to quality and replace “customer” with “stakeholder” (as we have done below) in the table used by Bisgaard in Chapter Two to describe *Juran’s Trilogy*.

<i>Quality Management:-Juran's Trilogy</i>		
<i>Quality Planning</i>	<i>Quality Control</i>	<i>Quality Improvement</i>
<ul style="list-style-type: none"> • Determine who the customers stakeholders are; classify customer stakeholder segments • Determine what the needs of each customer stakeholder segment are • Design products with features and specifications that satisfy the needs of the customer stakeholder segments • Develop products and processes that are capable of delivering the product or service • Develop metrics and control mechanisms for monitoring and control • Provide training in the delivery processes 	<p><i>Planning for Control:</i></p> <ul style="list-style-type: none"> • Develop an understanding of what needs to be controlled relative to customer stakeholder needs • Develop a process flow diagram • Choose what and where to control; control points • Establish measures • Establish goals and standards of performance <p><i>Executing Control:</i></p> <ul style="list-style-type: none"> • Evaluate actual outcomes • Compare actual outcome to goals • Take action on the difference 	<ul style="list-style-type: none"> • Establish infrastructure for improvement • Identify improvement projects • Establish improvement teams • Provide teams with resources, training and motivation: <ol style="list-style-type: none"> 1. Diagnose root causes 2. Find remedies; Improve 3. Establish controls to institutionalize and hold on to the gains 4. Disband the team

Some fifty years ago the quality management concepts (particularly SPC and PDSA²²) developed by Walter Shewhart were presented as a new, exciting aid to managing organizations in an environment where the customer took on an unprecedented importance – in an ever increasing number of markets the customer was emerging as a stakeholder. After an initial acceptance and widespread application by many organizations throughout the world, quality management went into decline (particularly that form associated with the works of US quality gurus: Crosby, Deming and Juran).

From its earliest days, quality management had several features regarded as its strengths and the principal reason for its rapid (explosive) growth and almost universal acceptance. For example, it eschewed theory and emphasized pragmatism. It was presented by consultants (several of whom had acquired guru status) in a simple, readily understandable language, reduced to a simple formula or slogan (e.g., “Quality is Free”)’ presented in a “standards” format, and its directions for use were a series of simple steps.²³ Quality management was focused on the customer and manufacturing industry – many saw customer focus as the principal reason for the success of Japanese products in US markets. Though not obvious at the time, (indeed for a long time) those apparent strengths were indeed a source of its failure. The failure to appreciate the importance of an explicit theory led quickly to a proliferation of definitions of quality management and an inevitable confusion as to what it was. The lack of an agreed foundation (theory) also allowed parts, such as statistical process control to be promoted as the whole and encouraged the view that quality as a whole-of-organization strategy and its methods were inseparable. This added further to the confusion as to the true nature of quality management. The problems associated with the consideration of only “bits and pieces” of a complex issue have been described, most tellingly, by Joseph Schumpeter (1943, p.82) when commenting on the way economists had described economic development:

Both economists and popular writers have once more run away with some fragments of reality they happened to grasp. These fragments themselves were mostly seen correctly. Their formal properties were mostly developed correctly. But no conclusion about capitalist reality as a whole follows from

²² The improvement cycle, described by Shewhart, became the Deming cycle in 1950 when despite Deming’s reference to the Shewhart cycle in his first lectures in Japan, the Japanese chose to call it the Deming cycle.

²³ For further discussion of this aspect of quality management see, Foley, Clegg and Castles, (2005)

such fragmentary analyses. If we draw them nevertheless, we can be right only by accident. That has been done. And the lucky accident did not happen.²⁴

Focus on the customer correctly identified the emergence of customers as stakeholders but that concentration distracted attention from two other equally significant trends – the decline of manufacturing (and its replacement by the knowledge economy) and entities besides customers (suppliers, employees, non government organizations) becoming stakeholders.

Third generation quality management is predicated on the view that the reasons why quality management has failed in so many of its applications and is often rejected today as a management aid (particularly in its TQM guise), are to be found in its lack of an *explicit* theory (every promoter seems to have their own *implicit* theory) and the rigor, coherence and empirical research that necessarily attend a management model that has an explicit theoretical foundation. Furthermore, unlike its predecessors, this form of quality management distinguishes between quality as an organization strategy and its methods and as a consequence does not purport to apply to all organizations at all stages of organization development – it applies only in those situations where “quality first” has been adopted as the organization guiding strategy. Though *not* universal in its application the management theory that underpins third generation quality management applies to a large (and rapidly growing) proportion of the world’s organizations – large, small, public, private, profit and not-for-profit.

With its explicit theory (derived from a view of the world that recognizes the contemporary organization to have a multiplicity of stakeholders) and a qualified notion of customer sovereignty, third generation quality management holds the prospect of a management model especially suited to the 21st century organization.

²⁴ The parallels between the economists of the period to whom Schumpeter was referring and the many purveyors of quality management are too obvious to require further comment. For further discussion of this issue see Singhal and Hendricks, (1999).

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CHAPTER TWENTY ONE

Epilogue

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The theory of probabilities is at bottom nothing but common sense reduced to calculus.

Pierre Simon de Laplace

The chapters in this book represent the continuation of the endeavors of a small assembly of disparate academics from around the world who possess strong interests in quality management and business excellence. The chapters in this book were presented and discussed at the Sixth International Conference of the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE) held in Versailles, France in June 2007. Since MAAOE V in Sydney, the conference has become more a workshop with an unusual approach. Each article is given an hour for discussion and presentation. The hour begins with a discussant presenting an analysis of the paper, then the author presenting his or her comments, followed by open discussion. This approach has proven to relinquish the workshop assembly from advocating to open and free exchange. In the sense of Peter Senge's *The Fifth Discipline*, the assembly moves from discussion to dialogue. Often the dialogue is very spirited.

To provide additional background, the following paragraphs from the epilogue to the previous MAAOE book are included here.

This format, and its subject, while delayed from the original suggestion, emanates from the first International Conference of MAAOE held in Estes Park, Colorado in 2000. At the conclusion of that conference a core group of participants, reflected in the current participants group, called for a challenge to current thinking and a call to arms to take a different approach. The challenge to the attending academics was to cease the churning and develop true theoretical and empirically validated foundations for quality and, by extension, business excellence. That no unified theory for quality and business excellence exists is obvious. The challenge, then, was that those in

attendance “get busy” with the task at hand. Because the attendees represented some of the most schooled and highly regarded academics in the world the conclusion of that conference was also a call to arms to accept the challenge and get serious about change. The challenge and call to arms, along with a general consensus that participants yearned for more time with open discussion led to the workshop some years later.

With roots profoundly embedded in the conclusions from the first MAAOE conference, the efforts of the Sydney workshop clearly produced the aim of bringing to bear, and bare, a new paradigm for work in quality and business excellence, actually two new paradigms. The paradigms by their nature are intended to take the participants out of their comfort zones for the purpose of shaking things in a way that yield truly new thought and new contributions. The first paradigm represents a change in the way we think about quality matters, matters of business excellence, and the aim the participants in MAAOE hope to achieve. That aim is to develop a renewed process of scholarship, one not oriented toward another notch on the list of refereed publications, rather one that is steeped in exploration, creativity and innovation. There are far too many instances in the literature of authors rehashing old research with a different dataset or different title and a few different statements. The quality and business excellence literature, as well as others, is rife with that type of shallow content; it is *churning not learning*, and just like cream it yields a gooey, fat-laden spread that, while tasty momentarily, makes us sluggish and slothful. In part, it is this laziness that MAAOE is attempting to stamp out in the second paradigm.

The second paradigm is a demand for those engaged in the study of quality and business excellence to return to the tenets of the Theory of Knowledge. When one examines what has transpired over the years, one cannot resist a smirk upon reflecting that two of history’s gurus in the quality arena, Shewhart and Deming, repeatedly admonished us to use the Theory of Knowledge through the learning cycle, PDCA and PDSA, respectively. All the time, however, for the better part quality scholars have eschewed the wide and deep cache of research in disciplines that have a profound effect on quality principles, disciplines such as anthropology, economics, political science, psychology, sociology, and the physics of natural variation, numbers and entropy. As a specific example of a missing component, quality and business excellence are subjects most normally found in business schools; as often as we hear quality discussions centered on corporate culture, why is it that we do not find anthropologists teaching in business schools? The theory of anthropology is well-developed, yet how often is it cited in quality and business excellent papers addressing culture and trust?

And so, at the second workshop in Versailles our efforts continued, as they will in Aarhus, Denmark at MAAOE VII in October 2008. This, the second edited book of workshop papers, represents the continuing commitment of this small group of dedicated quality/business excellence students. We have yet to create a unified theory of quality and business excellence but our endeavors continue.

The Versailles papers continue the wide-ranging approach to many issues, which here are parceled into internal and external contexts, and a third integrating context. In general, these can be regarded as forces, constraints, initiatives, and perspectives that emanate either from inside or outside the enterprise.

Internal Context

From inside the enterprise, Clegg, Hermel and Foley examine the power issues in a social context that are associated with quality efforts in organizations. This is a highly important issue as many failures in implementing quality and business excellence transitions have at their core enterprise culture and power sharing, decision making, problems. Corbel and Terziovski examine the knowledge-based view (KBV) of enterprise leadership, including the principles upon which KBV is built, along with the obstacles that prevent KBV from developing into a theory that is useful in research and in practice.

Does and van den Heuvel investigate healthcare organizational excellence by examining Lean Six Sigma implementation at several Netherlands and Belgian hospitals. Bartoli and Trosa analyze public management in the context of strategic management and the alignment of management and policy. They posit that if management is strategic, in addition to operational, improvement processes are enhanced. Isaksson, Hallencreutz and Garvare take a process management and systems approach to sustainable development. They argue that much can be accomplished if universal shared vision is present.

Bisgaard analyzes quality management as innovation management. He argues that quality management addresses the organization of incremental innovation akin to the PDSA cycle and the creation of knowledge, therefore value creation. Drew reports on the gender perspective in business excellence leadership, in which the leadership qualities of women have been ignored. The paper draws on an international study of gender differences in leadership.

External Context

Foley, Karapetrovic and Wraight scrutinize the paradox that, while ISO 9000 has very widely affected worldwide management practice in an unparalleled way, ISO 9000 has had miniscule affect on management thought. They propose some answers.

Jonker and Eskildsen use a benchmarking approach to discover fifteen new management models from leading companies worldwide. With the assumption that most models include responsibility, accountability and sustainability, they develop a “road ahead” for future research in academia and a set of models for practice to use as a foundation for improvement.

Terziovski and Hermel examine the function of strategic quality management in advancing the integrated supply chain. They find that the attributes of strategic quality management including “strategy, structure, culture, and behavior,” are implications of an effective implementation of an integrated supply chain.

Eskildsen, Kristensen and Steensen address the connection between market strategy and customer satisfaction. Their analysis exposes whether or not market structure affects customer satisfaction measurements, including cross-industry differences.

Foster and Jonker investigate Third Generation Quality Management (3GQM) and how it is aligned with the enterprise business proposition, strategies, and value creation in the context of external forces from the business environment and the social environment, which the enterprise does not control.

Heras Forcada, Ramis Pujol and Guerrero-Cusumano analyze nine performance measurement systems using a comparative approach, including the Malcolm Baldrige Model, the Balanced Scorecard, the EFQM Excellence Model, and the Performance Prism. They identify some interesting relationships among the nine systems.

Azaryeva, Stepanov and Shaposhnikov examine modernization and quality assurance in Russian higher education institutions (HEI) and the Bologna Process. At issue is which external model to use and how best to harmonize Russian HEI with various quality models.

Integrating the External and the Internal

Zink and Steimle explore the role of corporate social responsibility and corporate sustainability in organizational excellence. In connecting a stakeholder approach to the resource-based view, they argue that the external and the internal perspectives are aligned and complementary. Isaksson, Hallencreutz and Garvare take a process management and systems approach to sustainable development. They argue that much can be accomplished if a universally shared vision is present.

Donnelly uses a complexity science perspective to evaluate quality management in the public sector. The complexity derives from three worlds interacting; the providers' world, the politicians' world, and the citizens' world, which calls for acceptable fora for resolution and improvement activities.

Within the context of the water industry in Victoria, Australia, Goldsmith, Samson and Robertson examine the excellence issue associated with moving from organization excellence to whole-of-system excellence. They answer the question, "Can excellence be applied to optimize whole-of-system performance?"

Hensler examines differentiation and commoditization in the global marketplace and its significance for the enterprise and for the individual. The lessons are stark for enterprises and individuals in developed countries and encouraging for developing economies.

Bergquist, Foley, Garvare and Johansson ask the question of whether third generation quality is too little too late or just in time. They conclude that the work of MAAOE has produced four defining differences that hold optimism: a stakeholder perspective that views "customer satisfaction is *a means* to achieving the organization aim and may be (and most often is) constrained by the need to satisfy other stakeholders"; "an explicit *theory* of quality management"; "a distinction between quality as a whole-of-organization strategy and the methodologies and tools of quality management"; and "the evolution of quality management by management scholars rather than management entrepreneurs".

This book is but a small part of the work that lies ahead. The idea of integrating, a small part here via the external and internal contexts, is at the forefront if we are to attain a consistent and unifying theory of quality management and business excellence. This defines the work of MAAOE that will take us far into the future. As the quote at the lead of this epilogue implies, the group must never lose touch with common sense as it endeavors to reach that unifying theory.

With these things in mind, the workshop has moved aggressively to “restock” the intellectual capital of the group with younger participants. The old hats hopefully provide some wisdom, but it is the young who will bring the energy and drive to carry this work forward. Such is the case for MAAOE VII in Aarhus.

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Doug Hensler joined Wichita State University in June 2008 as Dean of the W. Frank Barton School of Business. Prior to that he served as Dean and Sid Craig Endowed Dean's Chair in the Craig School of Business at California State University, Fresno. Before that appointment, Doug served for eight years at the University of Colorado at Boulder as the W. Edwards Deming Professor of Management, a joint appointment to the College of Engineering and Applied Science and the Leeds School of Business. Prior to returning to the academic community, Doug served in several management capacities in the nuclear and aerospace industries. In 1998, he co-founded the Multinational Alliance for the Advancement of Organizational Excellence (MAAOE). Doug serves on several editorial boards of international journals. He holds a BSE in Aerospace and Mechanical

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Jaap van den Heuvel was born in 1955 in Nieuw Lekkerland. He passed the first-year exam in Chemistry in 1977 and became a MD at the University of Leiden in 1984. In 1988 he obtained his MBA degree at the University of Rotterdam. In 2003 he became a Certified Public Controller at the VU University Amsterdam. In 1985 he was member of the medical team of Alarm Centrale Euro Cross. Then he worked three years as a house officer in Thoracic Surgery and Internal Medicine. After that he became IT consultant specialized in electronic medical records. In 1992 he became management consultant at Bakkenist and worked as interim manager in the radiology department of the academic hospital in Utrecht. During the same period he was the general manager of the nursing home Amstelhof in Amsterdam. In 1997 he started as general director of the Red Cross hospital in Beverwijk. In this hospital he introduced an ISO 9001 quality management system and Six Sigma. In 2005 he became president of the board of the Canisius-Wilhelmina hospital. In 2007 he obtained a PhD on the subject Quality Management in Healthcare. Since 2008 he is president of the board of the Reinier de Graaf hospital.

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Peter Johansson is performing his PhD studies at Quality & Environmental Management, Luleå University of Technology in Sweden. He received a Licentiate of Technology in Quality Technology in 2007. His interests lie in the fields and integration of Quality Management, Stakeholder Management, Environmental Management and Sustainable Development. Peter is currently working as a Supplier Quality Engineer at Sony Ericsson Mobile Communications in Lund, Sweden. The work includes the approval of supplier processes before volume production. The approval is based on a number of quality tools and methodologies such as risk analysis, process FMEA, Design of Experiments, Gauge R&R, Capability Studies and Statistical Process Control. The work also includes external audits of suppliers' quality management systems, environmental management systems and CSR-performance. The purpose of Peter's research is to contribute to the knowledge of how organizations may be managed in order to promote both organizational and global sustainability. Peter's current position at Sony Ericsson brings valuable international business and practical quality management experience to his PhD research.

Jan Jonker works part-time at the Nijmegen School of Management (NSM) of the Radboud University Nijmegen [RU - Holland]. Jan worked for more than ten years in the wine- and food service industry before joining the university in the late eighties. He has now run his own consultancy practice for over fifteen years. His research interest lies on the crossroads of management and corporate social responsibility (CSR) in particular in relation to the development of business concepts and strategy with a strong emphasis on implementation. Key in all this is to contribute to the new roles and functions of the business enterprise in contemporary society.

He holds an MSc from Leiden University and a PhD from Nijmegen University. Over the years he has been teaching courses on organizational theory, organizational change, research methodology, Total quality Management (TQM) and – for the past ten years – courses related to Sustainable Development (SD) and Corporate Social Responsibility (CSR). More recently he started developing executive education programs in the field of CSR and SD – on a national (Dutch) and European (France) level. He also holds the educational and organizational responsibilities for a University Diploma Formation Continue on CSR at the University of Toulouse 1 (IAE). Jan has written seventeen books alone or with others and published over a hundred and fifty articles. Recent books are “CSR across Europe” (Springer Verlag, 2005), “The Challenge of Organizing and Implementing CSR” (Palgrave, 2006), “Management Models for CSR” (Springer, 2006), and “Management Models for the Future” (Springer Verlag, 2008). Since 2006 he has also taken the initiative to develop a series of websites for students of CSR. The aim of all the sites together is to create a global internet community of students from around the world. The first of these sites (www.mvoscripties.nl in Dutch!) has been online since January 2007 and has so far attracted 60.000 visitors. More recently the sites www.cscenter.net (English) and www.csr-blackboard.de (German) came online. New sites are planned in French and Spanish. The goal is to have all these sites online by the end of 2009. Besides his ongoing research, subsequent teaching and academic entrepreneurial activities Jan has been a business consultant for the past fifteen years. Starting with projects related to organizational diagnosis and change, his focus is now concentrated on CSR and Business Strategy.

Stanislav Karapetrovic is a Professor of Mechanical Engineering at the University of Alberta in Edmonton, Canada, where he leads the Auditing and Integration of Management Systems Research Laboratory, and teaches quality and engineering management. Stanislav's widely published and cited research has been funded by government agencies and corporations alike. He has received a number of international awards for his research publications, and is often invited to deliver keynote speeches at international conferences. A registered professional engineer, Professor Karapetrovic is heavily involved in national and international standardization work through the Standards Council of Canada, Canadian Standards Association and the International Organization for Standardization. His most recent such international appointment is Customer Satisfaction Liaison for ISO/TC176/SC3.

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Sergey has published many articles on university international co-operation and quality assurance in engineering education. He was also a speaker to many international conferences and symposia on quality assurance and internationalization of higher education. In 2002-2006 he took part in accreditation visits to several Russian universities, in 2007 he was an international observer to the accreditation visit to York University, Toronto, Canada. In 1997-2006 he was a project leader of several international and national projects on internationalization of higher education, university library development, university strategic management. In 1996 he was a visiting researcher at Ford Motor Company Scientific Research Center in Dearborn, Michigan.

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Ulrich Steimle earned his PhD in Management (Dr. rer. pol.) from the University of Kaiserslautern and holds a master's degree (Dipl.oec.) in business administration and social sciences from the University of Augsburg. From 1999 to 2001 Ulrich was assistant researcher at the Chair of Applied Psychology, University of Augsburg. From 2001 to 2005 he was a member of the academic staff at the Chair of Industrial Management and Human Factors, University of Kaiserslautern. Since 2005 he is Managing Director and Research Associate at the Research Institute for Technology and Work, University of Kaiserslautern. During spring 2006 Ulrich was Visiting Scholar at the Center for Quality and Productivity Improvement, University of Wisconsin-Madison.

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G. Geoffrey Vining is Professor of Statistics at Virginia Tech. From 1999 – 2006 he served as department head. He holds a BA from the University of Tennessee at Knoxville (1981), and a M.S. (1986) and PhD (1988) from Virginia Tech. His primary areas of interest are experimental designs and their analysis for quality improvement, response surface methodology, statistical process control, and regression. Dr. Vining has significant consulting experience in industry. He has received research grants from Alcoa and Shell. From 1988-1999 he served on the faculty of the Department of Statistics at the University of Florida. Prior to going to graduate school, he was a Process Engineer with the Faber-Castell Corp. His responsibilities included technical support to the pencil lead operation and the development of a company wide Deming based quality improvement program.

Dr. Vining has authored or co-authored three books, two with multiple editions. He was the editor of the *Journal of Quality Technology* from 1998-2000. He received the 1990 Brumbaugh Award from the American Society for Quality (ASQ) for the paper published in an ASQ journal that made the greatest contribution to quality control. He received the 2005 Lloyd Nelson Award from the Statistics Division of the ASQ for the paper published in the *Journal of Quality Technology* that made the greatest immediate impact for practitioners. He has been elected a Fellow of both the American Statistical Association (ASA) and the ASQ and has been elected a member of the International Statistics Institute. He has been Chair of the Quality and Productivity Section of the ASA and Chair of the Statistics Division of the ASQ. He is the current Chair of the ASQ Publications Management Board.

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Klaus Zink studied Technical Business Management at the University of Karlsruhe and then worked as an Assistant Professor at the Institute for Production Economics and Human Factors (University of Karlsruhe). In 1975 he finished his PhD studies and received the "Fritz-Giese"-Award for his doctoral thesis. After his habilitation at the School of Economics and Business Engineering, University of Karlsruhe in 1978, he became Professor at the University of Wuppertal. Since 1980, Klaus Zink is Professor at the University of Kaiserslautern (Chair of Industrial Management and Human Factors). Besides his lecture activities, he is head of the Research Institute for Technology and Work at the same university.

Klaus Zink serves on the editorial review boards of several journals, among others Total Quality Management & Business Excellence and The TQM Magazine. He has been a member in numerous national and international organizations and committees, for example, member of the Jury of the European Quality Award, President of the Jury of the German Quality Award and member of the Academic Board of the European Masters Program in Total Quality Management. Klaus Zink has been involved in various international research projects covering issues in the area of Quality Management and Organizational Excellence.

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