
An Examination of Strategic Alignment Mechanisms in Public Service Organisations

Author: Sören Sinz

Supervisor: Joseph McDonagh



Thesis Submitted for the degree of

Doctor of Philosophy

University of Dublin, Trinity College

Trinity Business School

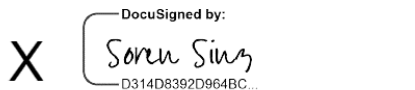
2023

Declaration: Trinity College Dublin

DocuSign Envelope ID: 66877386-C26B-47B9-9B8F-17D16A8E6CEF

Declaration: Trinity College Dublin

I hereby declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work. I agree to deposit thesis in the University's open access institutional repository or allow the library to do so on my behalf, subject to Irish Copyright Legislation and Trinity College Library conditions of use and acknowledgement. Furthermore, I consent to the examiner retaining a copy of the thesis beyond the examining period, should they wish to do so (EU GDPR, May 2018).

 X DocuSigned by:
Sören Sinz
D314D8392D964BC...

Sören Sinz
PhD Candidate

Declaration: Ireland's Department of Foreign Affairs

DocuSign Envelope ID: 1CE6CE22-B92A-414C-840F-AFCAF3329532



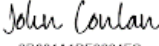
An Roinn Gnóthaí Eachtracha
Department of Foreign Affairs

19th September 2022

To Whom It May Concern:

I have read the case study, prepared by Sören Sinz as part of his Doctoral Thesis, on ICT strategy work in the Department of Foreign Affairs. The details included in the case narrative describe the context and actions that occurred in the Department relating to the ICT Strategy (2016–2019) development process. With regards to the events preceding ICT Strategy (2016–2019), the case narrative presents an account of the Department's history in relation to business-ICT projects. I have read and reviewed the case narrative and I am happy with its inclusion in the Doctoral Thesis.

Sincerely,

DocuSigned by:

00831A1DF0664FC...

John Conlan
Deputy Secretary General,
Chief Operating Officer
Date: 9/20/2022

DocuSigned by:

3947B67AE3F8424...

Eddie McGinn
Director of ICT,
Corporate Services Division
Date: 9/23/2022

Abstract

Strategic alignment (i.e., the alignment between business and information and communications technology (ICT)) has remained a top management concern for decades – evident by the annual ICT issue survey published for executives (Ball & Harris, 1982; Niederman et al., 1991; Luftman & Mclean, 2004; Luftman & Ben-Zvi, 2010; Kappelman et al., 2020). While information systems research reflects deep engagement with the topic of strategic alignment, this thesis argues that the theoretical, methodological and philosophical positions taken have obfuscated the dynamic and complex nature of strategic alignment. As such, the thesis adopts a processual position to illustrate ‘how’ alignment emerges and develops over time as opposed to the dominant content perspective that seeks to answer ‘what’ needs to be aligned. The thesis therefore commences by outlining the concept of alignment delineating the historical footprints of the concept within systems theory, organisation theory, strategic management theory and finally, information systems research. In doing so, a case is made that the concept has been shaped by dominant perspectives in those domains and this influences how it has been adapted and deployed within information systems research. Finally, the conceptual lens adopted seeks to make a distinction between structural, social and technical components of strategic alignment to offer a more holistic perspective on the relationship between business and ICT.

To facilitate the processual inquiry in alignment, a critical realist position is adopted which emphasises process metaphysics and a mechanism-based explanation of phenomena while deploying a single case study method due to its ability to capture context and ‘reality in flight’. The study uses the Irish Department of Foreign Affairs as a case organisation by tracing the development process of its ICT2020 Strategy over time – while also presenting prior business-ICT context spanning two decades to inform the current state of affairs. Grounded theory coding is used to capture themes and identify subsequent mechanisms, which are presented in an explanatory framework that encapsulates structural, social and technical alignment mechanisms across the discovery, formation and execution phases. The final chapter offers both contributions to academia and professional practice. The contribution to academia emphasises the theoretical contribution by offering a processual understanding of strategic alignment and offers a steppingstone for further research as well as the empirical contribution of the case study itself. While the emphasis is to contribute to theory, several relevant actions and ideas relevant to professional practice are identified in the forms of collaborative and democratic approaches to strategising as well as learning and development to shape strategy formation.

Acknowledgements

First and foremost, I'd like to thank Prof Joe McDonagh who acted in the capacity of my supervisor – and to whom I'm forever grateful for having facilitated my research and learning journey, the experience of which, I will take with me to the future.

Secondly, I'd like to express my sincere gratitude to the Department of Foreign Affairs for their willingness to assist in this research project, and who have always been available to answer questions, provide documentation and their time. It was a great pleasure getting to know the diplomatic powerhouse and their people.

Thirdly, I'd like to also acknowledge the Trinity College ecosystem – comprised of PhD colleagues, students as well as professors at Trinity Business School but also other Departments, with whom I've had the pleasure of working and engaging with. A special shoutout to Ben Lynch, Axel Lerro, Kadek Ade Sawitri, Supun Chandrasena, Pia Helbing, Leo Austmann, and Marjan Zhaf! May we meet again soon for a pint.

Finally, I wish to communicate my appreciation to my Friends & Family – who have supported me throughout the entire journey; and apologies, for missing out some of our celebrations!

Table of Contents

List of Tables & Figures	9
List of Abbreviations	10
Chapter 1: Introduction	12
1.1 Theoretical and Practical Domains	12
1.2 Research Justification	13
1.3 Thesis Structure	14
1.3.1 Literature Narrative	14
1.3.2 Methodology	16
1.3.3 Case Narrative	17
1.3.4 Theory Development	18
1.3.5 Contributions, Limitations and Future Research Agenda	19
1.4 Next Steps & Research Question	20
Chapter 2: Literature Review	21
2.1 Introduction	21
2.2 Evolution of the 'Fit' Concept	22
2.2.1 Systems Theory & Fit	22
2.2.2 Organisation Theory & Fit	25
2.2.3 Strategic Management & Fit	27
2.2.3 Information Systems & Fit	30
2.3 Strategic Alignment	31
2.3.1 Social Alignment	32
2.3.2 Intellectual Alignment	44
2.3.3 Criticisms against Strategic Alignment	56
2.4 Strategy as a Process	60
2.4.1 Deliberate and Emergent Strategies	61
2.4.2 Process of Change & Inertial Forces	62
2.5 Aligning in Context: The Nature of PSOs	64
2.5.1. Private-Public Sector Comparison	64
2.5.2. Strategy in PSOs	65
2.5.3. PSOs and Strategic ICT	67
2.6 Discussion	67
Chapter 3: Methodology	69
3.1 Introduction	69
3.2 Processual Discussion	70
3.2.1 Grounding a New Perspective: Departing from Fixity	71
3.2.2 A World on the Move: The Centrality of Time	73

3.2.3 Resolving Tensions for Complementarity	76
3.2.3 Causality and Determinism	79
3.3 Philosophical Position: A Set of Notions	81
3.3.1 Ontology	81
3.3.1 Epistemology	86
3.3.2 A Critical Realist Inquiry	88
3.4 Method	91
3.4.1 Case Study	91
3.4.2 Approach to Inquiry	98
3.5 Replication & Process	101
3.6 Conclusion	105
Chapter 4: Narrative	105
4.1 Introduction	105
4.2 Context	106
4.2.1 Historical Context	106
4.2.2 Institutional Context	108
4.2.3 Organisational Context	111
4.2.4 Technological Context	118
4.3 Top-Down Approach to ICT Strategy Development	119
4.3.1 Building the Foundations (2000 – 2004)	120
4.3.2 Developing the Intranet (2005 – 2007)	123
4.3.3 Austerity (2008 – 2009)	126
4.4 Bottom-Up Approach to ICT Strategy Development	127
4.4.1 Reform Agenda (2010 – 2011)	128
4.4.2 ‘Burning Platform’ (2012 – 2014)	134
4.4.3 A Fresh Start: The New ICT (2014 – 2016)	136
4.5 ICT2020 Strategy Development Process	138
4.5.1 Discovery (March 2016 – March 2017)	138
4.5.2 Formation (April 2017 – April 2018)	145
4.5.3 Execution (May 2018 – June 2019)	154
4.6 Conclusion	164
Chapter 5: Theoretical Framework on Dynamic Strategic Alignment	165
5.1 Introduction	165
5.2 Theoretical Framework	165
5.2.1 Phases of Strategy Development	165
5.2.2 Dimensions of Strategic Alignment	167
5.2.3 Theoretical Framework: Mechanisms of Strategic Alignment	169

5.3.4 Theoretical Framework: Inter-Alignment & Inter-Phase Transitions	170
5.3 Theoretical Framework: Empirical Evidence	173
5.3.1 Discovery Phase.....	173
5.3.2 Formation Phase.....	180
5.3.3 Execution Phase.....	185
5.4 Comparison: Framework versus Extant Literature.....	192
5.4.1 Structural Alignment	192
5.4.2 Social Alignment	194
5.4.3 Technical Alignment	197
5.5 Summary & Conclusion	198
Chapter 6: Conclusion	198
6.1 Introduction.....	198
6.2 Contributions.....	199
6.2.1 Theoretical Contribution	199
6.2.2 Empirical Contribution.....	201
6.3.3 Professional Practice	202
6.3.4 Conceptual Contribution	204
6.4 Limitations	206
6.5 Future Research Agenda	208
6.5.1 Structural Aligning & Strategy as Practice	208
6.5.2 Socio-Structural Dynamics.....	209
6.5.3 Differing Context	210
6.5 Concluding Remarks	212
Bibliography.....	212
Appendices	233
Appendix 1: Interviewee List	233
Appendix 2: Digital First – Event Programme – DFAT	234
Appendix 3: Workshop Results – Analysis of External & Internal ICT Environment	236
Appendix 4: Survey Responses.....	237
Appendix 5: ICT Strategy Development – Review & Draft	238
Appendix 6: Preliminary ICT Issues.....	242
Appendix 7: Thematic Patterns in Workshop (Initial Goal Areas).....	244
Appendix 8: ICT Strategic Framework & ICT Action Plan	247
Appendix 9: Peer Review Conference Programme	252
Appendix 10: Peer Review Conference	255
Appendix 11: Newsletter ICT-SIT (February 2019)	258

List of Tables & Figures

Table 1: Comparison of Private-Public Sector Literature.....	67
Table 2: Critical Realist-Based Approach to Analysis	101
Table 3: Central and Local Government Public Service Reform Initiative in Ireland (Boyle, 2020:8) ..	108
Figure 1: Organigram of DFA in 2021	114
Table 4: Structural Changes of DFA from 1998 to 2021.....	115
Table 5: Civil Servant Classification (Publicjobs.ie, online; Whodoeswhat.gov.ie, online)	118
Table 6: Progress Report from ICT-SIT	160
Table 7: Research-derived Strategy Development Phases	166
Table 8: Theoretical Framework: Strategic Alignment Mechanisms across Strategy Development Phases.....	170

List of Abbreviations

AP	Assistant Principal
A-SEC	Assistant Secretary
BITA	Business-ICT Alignment
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIO	Chief Information Officer
CMOD	Centre for Management and Organisation Development
CRM	Customer Relationship Management
CSO	Chief Security Officer
DBG	Delivering Better Government (1996)
DC	Dynamic Capabilities
DFAT	Department of Foreign Affairs & Trade
DPER	Department of Public Expenditure and Reform
EA	External Advisor
EO	Executive Officer
EU	European Union
GTM	Grounded Theory Method
HEO	Higher Executive Officer
HQ	Headquarters
HRM	Human Resource Management
ICT	Information and Communication Technology
ICTG-SC	ICT Governance - Steering Committee
ICTKM-SC	ICT and Knowledge Management Sub-Committee
ICTSAP	ICT Strategic Action Plan
ICTSDP	ICT Strategy Development Process
ICTSF	ICT Strategic Framework
ICT-SIT	ICT Strategy Implementation Team
ICT-SSG	ICT Strategy Steering Group
ICT	Information Technology
ITG	Information Technology Governance
KMIT	Knowledge Management and Innovation Task Force
KMTF	Knowledge Management Task Force
MB	Management Board
MIS	Management Information System

OGCIO	Office of Government Chief Information Officer
ORP	Organisation Review Programme
PO	Principal Officer
PPO	Policy Planning Office
PRC	Peer Review Conference
PSO	Public Service Organisation
PSR	Public Service Renewal
SA	Strategic Alignment
SC	Steering Committee
Sec-Gen	Secretary General
SGCU	Strategy, Change and Governance Unit
SIS	Strategic Information Systems
SISP	Strategic Information Systems Planning
SMI	Strategic Management Initiative (1994)
SPD	Strategy Performance Division
SPU	Strategic Performance Unit
TMT	Top Management Team
TOR	Terms of Reference
WAN	Wide Area Network

Chapter 1: Introduction

This chapter introduces the research study that was undertaken as part of the doctoral thesis conducted at Trinity Business School. The research is embedded within the Information Systems domain and draws on auxiliary literature on strategic management and public management to inform on the topic of Strategic Alignment (SA) in public service organisations. It should be noted that the strategic management literature plays a significant role in the interpretation and operationalisation of strategic alignment within this research study, while also reflecting public sector contextual components and related strategy interpretations. Section 1.1 outlines the theoretical and practical domains of the research study to provide a preliminary understanding on the emergence of strategic alignment from a historical perspective in both academia and industry, while also delineating how the need for alignment in organisations emerged. Section 1.2 communicates the justification for the research while also briefly indicating the gaps that the research is seeking to address. Section 1.3 presents the structure of the thesis in the form of chapter-level executive summaries, to give the reader initial insight into the major components of the thesis to facilitate a better understanding prior to diving deeper into the various chapters.

1.1 Theoretical and Practical Domains

The concept of ‘alignment’ emerged in business strategy literature in the late 1960s (e.g., Lawrence & Lorsch, 1967). Scholars have suggested that organisations must align structure to strategy (Tichy, 1983) and align their strategy to their environment (Hannan & Freeman, 1977). Both strands of thinking were influenced by discourse on organisational adaptation and environmental selection. While scholars may differentiate between voluntarist or deterministic aligning actions (c.f., Hrebiniak & Joyce, 1985), alignment has underpinned the essence of strategy development and strategic change. External alignment, that is, aligning strategy to the environment, is often classified as actions relating to strategy formulation; whilst internal alignment, often refers to strategy implementation whereby resources are mobilised through specified structures and aligned to the organisation’s formulated strategy. Based on this thinking, all aligning actions are indeed strategy and strategy requires alignment – making the term ‘strategic alignment’ seem redundant. Nonetheless, the term ‘strategic alignment’ has specific value in industry and academia and refers explicitly to the alignment between business and ICT as evident in scholarly publications, consultancy, industry publications as well as industry surveys (Chan & Reich, 2007b).

While strategy is as old as society itself (i.e., survival and military strategy), the need for strategic use of technology emerged alongside the development of ICT systems, software and hardware. The incorporation of ICT in corporate and strategic planning emerged as early as the 1970s – albeit with ICT playing a rather reactive role illustrated through one-way alignment whereby the ICT Unit was to

be aligned to corporate objectives (Mason & Mitroff, 1973; King, 1978; Ein Dor & Segev, 1978, 1982; Lederer & Mendelow, 1987: 89). In conjunction with industry's development of ICT systems, software and hardware, senior management transitioned their interpretation of ICT as playing a more strategic role. In the 1990s, technology solutions providers and consultancy firms started to deploy the term 'strategic alignment' to denote the leveraging of ICT in a strategic capacity to improve performance and competitive advantage. The first and most-widely cited research on the strategic role of ICT began emerging in the *IBM Systems Journal* (Broadbent & Weill, 1993; Henderson & Venkatraman, 1993) and had a lasting impact which eventually resulted in the formalisation of the theoretical conceptualisation of reciprocal alignment between business and ICT within the management information systems domain.

It should also be noted that strategic alignment (SA) is the conceptual successor to strategic information systems planning. SA itself goes beyond the technical aspect of linking ICT objectives with business or corporate objectives, to also incorporating structural and social components. While early emphasis was placed solely on the technical aspect, the inclusion of structural (i.e., governance and control mechanisms) and social (i.e., knowledge transfer and communication mechanisms) offers a more realistic, holistic and fruitful understanding of how alignment emerges and is subsequently maintained. The reason for its emphasis on the other aspects is that ICT within organisations expanded from isolated units towards more significant structures and governance approaches, as well as greater involvement of ICT professionals in strategy making (Merali et al., 2012). Overall, as the integration between business and ICT continues, a more holistic perspective is required beyond simply technical planning to facilitate business-ICT objective and needs alignment.

1.2 Research Justification

The justification to pursue processual research on the topic of strategic alignment in a public sector organisation is to advance the research agenda on strategic alignment, to: 1) contribute to theory by addressing the continued calls for longitudinal, processual and mechanism-based research; and 2) to contribute to professional practice by addressing the fact that SA remained a top management concern for decades whilst assisting public service organisation (PSOs) in achieving and maintaining SA to deliver greater public value.

Justification 1: Contribution to Theory

Scholars have consistently called for processual, longitudinal and mechanism-based research on SA. A review of literature confirms that the major criticisms tied to SA are primarily linked to research that adopted content- and contingency-based studies that deployed cross-sectional surveys with a 'snapshot' timeframe. The criticisms are that: 1) alignment research is mechanistic and fails to capture real life; 2) alignment is not possible if the business strategy is unknown or in process; 3) alignment is

not desirable as an end in itself since the business must always change; and 4) ICT should often challenge the business, not follow it (Chan & Reich, 2007a: 298). The counterarguments and reasoning are outlined in Section 2.3.3, where it is argued that the lack of advancement of strategic alignment from a processual perspective is due to the theoretical, philosophical and methodological positions taken in extant literature.

Justification 2: Contribution to Professional Practice

Scholars have continuously pointed to SA as a major concern for executives in both public and private sector organisations for over three decades – which raises the question: have managers failed to correctly absorb research to deliver alignment or have scholars not produced research that assists managers in delivering alignment? Regardless of the perspective, the rigor versus relevance debate has been significant in management research in general (Hafsi & Thomas, 2005), and information systems research specifically (Mårtensson & Lee, 2004; Costella et al., 2011; Straub & Ang, 2011; Peppard et al., 2014; Avenier & Thomas, 2015). Peppard et al. (2014) suggest that the research adopts inappropriate methodologies. Within strategic management literature, scholars argue that the lack of practical relevance is a result of abstract theorising rather than on ‘strategising’ or ‘doing the strategy’ (Peppard et al., 2014). As such, the research programme set out in the sections below acknowledges the central premise of these arguments and therefore adopts a methodology that seeks to understand how strategising occurs in the context of business-ICT alignment and assist in providing practical guidelines beneficial to executives.

1.3 Thesis Structure

1.3.1 Literature Narrative

This study adopts a narrative approach to reviewing literature to establish research gaps and to develop a frame of reference that is used to guide the inquiry and development of the theoretical framework. The review of literature begins by offering an account of the evolution of the concept of ‘fit’. Due to the narrative approach, tracing the development and deployment of the ‘fit’ concept across the management domains provides insight into the nature of alignment and how it has been interpreted within the strategic information systems domain to produce the notion of aligning business and ICT. While often neglected in discussion, these precursors of strategic alignment promote an understanding of what fit entails. Specifically, the review draws attention to an open-system dynamic interpretation of organisations. These interpretations have informed the modern notion of strategic alignment, and therefore question why prior research has exclusively drawn one-sided conclusions of the process-content debate within strategic alignment, while organisation theory, systems theory and strategic management have provided a more balanced debate. As such, the

characteristics of alignment as a process have been presented, to inform how the dynamics of business-ICT alignment may occur.

After reviewing the evolution of alignment's precursor, 'fit', the narrative begins with the investigation of strategic alignment in the domain of information systems which draws heavily on content strategy research. Specifically, social alignment and intellectual alignment are presented. *Social* alignment is defined as "the state in which business and ICT executives within an organizational unit understand and are committed to the business and ICT mission, objectives, and plans" (Reich & Benbasat, 2000: 82) as well as "the level of mutual understanding of and commitment to the business and ICT mission, objectives, and plans" (Reich & Benbasat, 1996: 58). On the other hand, *intellectual* alignment is defined as "the degree to which the ICT mission, objectives, and plans support and are supported by the business mission, objectives and plans" (Reich & Benbasat, 1996: 56) – and proceeds social alignment. The social dimension seeks to create social capital which is used to generate intellectual capital (Ghosh & Scott, 2009).

This section provides a vital understanding of the factors and variables used to understand and research the concept of alignment and results in the identification of categories that provide the initial mechanism of classification for the theoretical framework. Towards the latter part of the section, the process-based studies – of which there are few – are presented. Here it becomes evident that the majority of past research has focused primarily on content-based studies that have resulted in limitations and criticisms of the research topic. The final part of the SA section address criticisms of strategic alignment in the form of counter arguments – and paves the way to understanding why prior studies have failed to capture strategic alignment in a manner that advances research. Specifically, it was identified that rather than relying on strategy content research, the narrative should review strategy process research to assist in providing a strong processual interpretation of strategic alignment. In order to incorporate strategy process, research methodologies must be adapted to include longitudinal studies with context, to foster understanding of how strategic alignment develops and forms over time. Therefore, the following sections will review strategy process research.

The strategy-as-a-process research domain is a niche within the wider strategy process domain. Strategy process research focuses on "the actions that lead to and support strategy" (Huff & Reger, 1987: 212). While Fahey & Christensen (1986) argue that the juxtaposing of content and process research may be useful (although firms engage in both), Huff & Reger (1987) argue that the distinction is an impediment to the progress of strategic management literature. However, processual scholars acknowledge both differences and incorporate both content and process into their theoretical frameworks. Hutzenschreuter & Kleindienst (2006) identify six streams within the strategy-as-a-process domain. The one adopted here focuses on the organic perspective that deals explicitly with the dynamic nature of strategy and strategising by conceptualising strategy from a specific process

perspective, one that views process as “a sequence of events that describe how things change over time” (Van de Ven, 1992: 169). As such, this portion of the narrative review investigates strategy formation – which covers deliberate and emergent strategising and change – as well as strategic change, which is characterised by alignment and re-alignment efforts to overcome path dependency that leads to inertial forces and barriers. The primary aim is to familiarise oneself with the strategy dynamics from a processual standpoint as it will inform a processual interpretation of strategic alignment and therefore assist in guiding the methodological inquiry and analysis.

Finally, the last component of the narrative review addresses public service organisations (PSOs) to understand the difference between governmental and industry organisations. Furthermore, it focuses on a subsection within the literature – new public management – that draws on strategic management to inform strategising in PSOs. This section also reflects changes within the case narrative, where a series of governmental reforms were aimed at improving management systems within government agencies to reflect industry-standard planning and change management. Finally, a brief section covers strategic information systems in the context of PSOs and found that inter-governmental stakeholders and mobilisation of support are essential to successful alignment initiatives through change and strategy programmes. Overall, while PSOs are increasingly similar to private sector firms, differences remain due to objectives (i.e., public value creation versus profit) as well as stakeholder involvement.

1.3.2 Methodology

The methodology chapter draws attention to philosophical positions adopted that facilitate a processual inquiry as well as the method derived from the ontological and epistemological positions taken. Furthermore, the philosophical and methodological choices are a result of the literature review, whereby gaps were identified that require a processual longitudinal study to further advance the field and contribute to the topic of strategic alignment. The methodology chapter begins by addressing what process refers to from a metaphysical position and then applies process philosophy to the study of organisations by applying both static and dynamic thinking to organisational phenomenon. Through this abstract discussion, themes emerge that suggest that some processual management research is processual in name only, rather than thinking and conceptualisation. As a result, tensions emerge regarding these positions. Often, philosophical argumentation is neglected for pragmatic reasons, but if research were to successfully contribute to practice and provide foundation for further theory – emphasis should be placed on methodology as it’s the central reason for why SA research has stalled. The following sections therefore explicitly outline the set of beliefs and notions adopted where critical realism as a paradigmatic contender arises.

Critical realism is a nascent paradigm, relative to the dominant interpretivist and positivist traditions. Section 3.6 outlines the set of notions adopted based on process metaphysics and outlines how these notions are in fact reflective of a critical realist position. From an ontological process point of view,

critical realism suggests: 1) a 'strong process view' that prioritises process over substance; 2) a transcendental (i.e., stratified) ontology – a multi-layered view of reality comprised of the empirical, the actual, and the real; 3) an open-system ontology – a system-based view that characterises organisations (i.e., actors that organise) as bounded temporalities that are not mechanically combined but are rather an enactment of events; and 4) a mechanistic causal ontology – reflective of mechanisms that produce outputs based on inputs – required for critical realist inquiry. From an epistemological position, critical realism takes a fallibilistic and relativist stance with regards to theory of knowledge, where truth claims are relative. This position is reminiscent of contextualism, where knowledge is specific to contextual settings; however, mechanisms exist regardless of context, but context triggers the specific mechanisms and are therefore empirically observable. As such, the context of the study identifies some mechanisms, that are unique to the contextual setting. Finally, this section concludes by outlining the requirements of a valid critical realist study.

The last major component of the methodology chapter is the method section. The chosen method is a single case study due to its ability to investigate longitudinal processes as well as the singular lens allowing for in-depth contextualisation of the phenomenon and therefore adhering to ontological reductionism. Furthermore, the methodology section delineates how critical realist notions are integrated into the research design.

1.3.3 Case Narrative

The case narrative presents an in-depth contextual explanation of the Department of Foreign Affairs and Trade (DFAT)'s business and ICT development over time from 2000 to 2019, while also providing contextual insight from the 1980s and 1990s to facilitate an understanding of how processes, structures and strategies emerged. Using temporal bracketing, three distinct phases emerged and were segmented into the following time periods that are unique relative to how strategies emerged: *Phase 1* (2000 – 2009) illustrates a top-down approach to ICT Development whereby the ICT Unit was not involved in planning nor strategising and therefore reflects a one-way alignment of ICT to business. *Phase 2* (2010 – 2015) presents a series of events characterised as central government pressure and greater involvement of ICT in strategic decision making and thereby also reflects one-way alignment; however, these processes were primarily driven by central government as well indicating greater involvement of the ICT Unit in being strategic as opposed to simply being a support service. *Phase 3* (2016 – 2019) focused on the ICT Strategy 2020 and is characterised by mutual driving of the strategy development process and reflects the first ICT-focused organisation-wide strategising exercise.

The context section (Section 4.2) outlines the historical, institutional, organisational and technological context of the DFAT prior to 2000 and draws attention not only to internal factors, but also government-wide reforms that had a significant impact on the alignment of business and ICT. The historical context delineates how the organisation i.e., the Department of Foreign Affairs and Trade

emerged in the Republic of Ireland and pinpoints its mandate to understand the corporate and strategic objectives of such an organisation. The institutional context outlines the wider changes occurring in central government and tabulates 17 reform initiatives in the Republic of Ireland from 1935 to 2017 and indicates how these reforms have impacted government departments and agencies. Many of the reforms from 1985 onwards focused on the professionalisation of government strategic and corporate planning, management systems, efficiency and cost measures as well as digitalisation. For example, the Strategic Management Initiative (1996) had a significant impact by the introduction of legalisation that imposed statutory requirements that places greater responsibility on Government departments for resource allocation and driving the 'value for money' of business processes and operations. An outcome of this reform was the Public Service Management Act (1997) that required departments to publish strategy statements and submit them to central government. As of this date, the first 'statements of strategies' from the DFAT emerged – where ICT was also mentioned in the form of hardware-related responsibilities. The organisation context component offers insight into the unique complexity of the DFAT while also having tabulated structural changes from 1998 onwards that indicate shifts in mandate, strategy and management system. Finally, technological context delineates how the ICT Unit within the DFAT emerged – which occurred in the late 1980s and coincided with the 1990 EU Presidency bid – whereby the ICT's first order of business was allocating 20 computers (e.g., word processors) to the two largest line divisions.

1.3.4 Theory Development

The Theory Development chapter outlines the explanatory theoretical framework on dynamic strategic alignment within the Department of Foreign Affairs and Trade and is presented in a tabulated matrix that identifies mechanisms across phases and alignment types. While the mechanisms are derived from inquiry and are grounded in data, the phases emerged as part of the case narrative. Furthermore, it should be noted that the phases are cyclical in nature – where the discovery, formation and execution phases are evident within the case narrative's temporarily bounded segments. Within each of these phases, there are distinct mechanisms operating in relation to structural, social and technical alignment.

The theoretical framework presents the discovery, formation and execution phases. The discovery phase is characterised by actions related to scoping, framing and general reflection and precedes the actual formation of the strategy. From a corporate management standpoint, management here seek to reflect from a top-down level whereby existing structures, processes and strategies are assessed, and awareness is raised that change is required. For example, prior governance arrangements are assessed to determine whether they are suitable for the future agenda as well as the drawing on external expertise to assist in understanding the current situation. From a practice standpoint, a series of workshops are typically held to critique the broader organisational system to understand

opportunities and problems as well as wider organisational requirements from a unit-level. The formation phase succeeds the discovery phase and is characterised by the formal acknowledgement to engage in the creation of a strategy. These actions consist of the formation of governance structures, allocation of responsibilities, a democratic approach to strategy work as well as the facilitation of engagement across the organisation to produce an organisation-wide strategy that ensures alignment across business units and with central government. Finally, the execution phase focuses on action aimed at delivering objectives outlined in the formation phase and to produce roadmaps. Furthermore, a series of reviews are undertaken to ensure the strategy is meeting agreed deadlines and deliverables.

The second component of the theoretical framework (Table Presented in Chapter 5) includes the mechanisms identified. The mechanisms are linked to structural, social and technical alignment. The structural alignment mechanisms are divided into governance and control components. Structural alignment focuses on the coordination of activities across business units. Governance refers to mechanisms linked to management systems whereby business and ICT actions are coordinated and create a forum whereby business and ICT employees, managers and leadership interact. Control mechanisms refer to control activities that are used to guide the strategy development process. Social alignment refers to “the state in which business and ICT executives within an organisational unit understand and are committed to the business and ICT missions, objectives, and plans” (Reich & Benbasat, 1996: 58). Social alignment mechanisms are placed into two categories: relational and knowledge transfer. Relational mechanisms refer to the forming of relationship as well as the manager’s use of both formal and informal relational networks. The knowledge transfer mechanism refers to the transfer of both explicit and tacit knowledge through various channels such as talking, meetings, intranets, workshops and others. Finally, technical alignment (termed Intellectual alignment in the literature) is the technical aspect of strategic alignment and refers to the production of strategy artefacts that illustrates goal and objective alignment in plans between business and ICT which is achieved through the planning mechanism.

1.3.5 Contributions, Limitations and Future Research Agenda

Chapter 6 outlines the contributions to theory and practice, the limitations of the research design as well as the future research agenda. Section 6.2 outlines contributions to theory, empiricism and professional practice. The theoretical contributions relate primarily to the development of a phase-based interpretation of strategic alignment across a strategy development process, the extrapolation of strategic alignment from a traditionally singular focus (i.e., on intellectual alignment) to include a dynamic view of structural, social and technical alignment in a singular study as well as the identification of mechanisms. The contributions to practice offer a pragmatic interpretation of the research for a management audience and discuss the impact of a collaborative model of alignment, learning & development processes, external expertise and communications to aid the strategic

alignment process. Lastly, a conceptual contribution was also presented, by offering a methodological approach for the examination of strategic alignment through a strong process lens.

Section 6.3 sets out the limitations within the study – particularly, drawing on research design, data collection method and the use of a narrative review. From a research design standpoint, the use of a single case study reduces the generalisability of the findings, as the sample size equates to one. The data collection method used is interviews and thereby limitations are associated with the medium, retrospective data quality, the researcher's competence as well as the use of post-hoc transcribing. Finally, a narrative review of literature was used, and potential limitations arise due to lack of structure, but it can capture greater auxiliary strands of research associated with alignment.

Section 6.4 maps out the future research agenda based on the contributions of this study. Firstly, greater emphasis on operational-level alignment using a strategy-as-practice lens would prove beneficial to the advancement of the topic. Secondly, investigation into the socio-structural dynamics in organisations is warranted by researching informal networks and applying network theory methodology, churn and job-rotations impact on alignment in organisation as well as researching the use of informal structures to understand how autonomous strategic behaviour shapes alignment in the strategy development process.

1.4 Next Steps & Research Question

To conclude, the introduction chapter provides initial insight into the nature of the doctoral thesis from both a researcher's standpoint, the theoretical domain and the methodological structure. The researcher's primary ambition for pursuing the research domain was to dive deeper into the academic world of management research by pursuing a study of strategic alignment which is at the intersection of strategic management and information systems. Prior to commencing each section, the research sought to examine the domain and its auxiliary domains to facilitate an understanding of the bigger picture, and thereby select strands of thinking that provide an interesting and unique perspective to the topic under discussion. While some researchers prefer a highly systematic and structured approach to scientific inquiry, a more creative and semi-structured approach is taken.

The following chapters are structured in the classical manner. Chapter 2 conducts a narrative review to inform the topic of strategic alignment by incorporating auxiliary topics. The outcome of the chapter are gaps in the research – which lead to the creation of the research question: *How does strategic alignment develop over time in the context of public service organisations?* Chapter 3 engages in a philosophical discussion on process metaphysics. While some scholars are eager to dismiss the merit of ontological and epistemological debate, a central focus of the discussion is to prepare a methodology that adheres to process thinking, and therefore facilitates an inquiry that is aligned to the ontological and epistemological positions. The latter part of Chapter 3 outlines the method –

whereby a longitudinal critical realist single case study approach is adopted - not out of interest or choice, but due to the requirements set forth in the earlier discussion – which itself is based on the literature review’s identification of methodological limitations. Chapter 4 presents the narrative of the Department of Foreign Affairs and Trade over three decades in the form of contextual insight and event mapping. It delineates the alignment dynamics across business units and pinpoints both internal and external pressures that have produced the events – creating the environment for the identification of mechanisms. Chapter 5 presents the explanatory framework in a tabulated matrix format whereby mechanisms are identified that generate structural, social and intellectual alignment across the discovery, formation and execution phase. It should be noted that intellectual alignment (termed in the literature) is better suited to refer to technical alignment, as it reflects a technical process. As such, the following sections use intellectual alignment to refer to literature while technical alignment to the mechanisms uncovered in this research. Finally, Chapter 6 concludes the research programme by providing a summary, outlining the contributions, listing the limitations as well as presenting a future research agenda to further develop the strategic alignment mechanisms.

Chapter 2: Literature Review

2.1 Introduction

The following section reviews strategic alignment research and its parent domains – namely, strategic management and information systems – in the form of a narrative review to identify and present research gaps in existing literature through analysis and critique as well as developing a frame of reference to guide inquiry. Furthermore, public administration research will be examined to facilitate a contextual understanding of how strategic alignment operates in the context of public service organisations. Due to the multi-faceted nature of strategic alignment research, a narrative review is best suited to categorise and map out existing literature while also providing a holistic overview of adjacent notions and concepts to fully inform the inquiry. The literature review also serves to contextualise strategic alignment through understanding strategy (and therefore, alignment) as a process in addition to embedding relevant concepts and models in the context of public service organisations.

First, Section 2.2 presents the concept of ‘fit’ by tracing its origin in systems theory, organisation theory, strategic management and information systems to understand how the concept of aligning in the study of management systems emerged. Section 2.3 begins the examination of strategic alignment - specifically, as it is applied in the Strategic Information Systems subcategory - by pinpointing social and intellectual alignment. The section concludes by providing counterarguments to the criticisms identified within the domain and make a case for further inquiry. Section 2.4 is concerned with defining strategy as a process and primarily draws on the strategic management domain to assist in

conceptualising strategic alignment as a process within the information systems domain. To further develop the frame of reference to guide inquiry, Section 2.5 draws on public administration research to provide contextual insight into the nature of public service organisation and how strategic alignment processes may differ in these settings in comparison to private organisations. Finally, Section 2.6 summarises the key arguments and sets out the research challenge by offering a bridge that connects to the methodology chapter.

2.2 Evolution of the 'Fit' Concept

This section is concerned with the evolution of 'fit' within the wider management and organisation domain and indicates how the notion of alignment emerged. It should be noted that the term 'fit', and 'alignment' are synonymous, but 'fit' is used to denote the historical development of alignment and the research that precedes the construction of the strategic alignment conceptualisation. At a fundamental level, the concept denotes the fit between two components. The aim of this section is to brief the reader on the concept by tracing its origin from systems theory to organisation theory then strategic management, while finally being adopted within the information systems research domain. Each of these domains adapted and advanced the concept of alignment. Furthermore, the conceptualisation of fit is relevant not only for the literature review, but also influences the structure and decision-making process for the methodology, narrative and theory development chapter. Often, neglecting the precise foundation of alignment has resulted in misconceptions and confusion regarding how alignment mechanisms operate. Therefore, prior to furthering the topic of strategic alignment, it is necessary to go back in time and understand the adaptations that took place and to learn from prior literature.

2.2.1 Systems Theory & Fit

Systems theory is well positioned to provide insights into the nature of organisations and their dynamics – as systems are the most basic interpretation of reality whereby both social and natural systems operate with distinct rules (Miller, 1978). The distinct rules were illustrated by Bertalanffy's (1968) General Systems Theory and dictate the way in which systems operate at a general and fundamental level. The rules and related conceptualisation have been incorporated into the study of organisational systems – either the rules and concepts themselves or have been used as a lens to view the organisation and its environment as an integrated whole (Johnson et al., 1964; Astley & Van de Ven, 1983) or the organisation has been viewed as a dynamic open social system (Nadler & Tushman, 1980) as opposed to the traditional closed system (e.g., Taylor, 1911).

2.2.1.1 *Conceptualising Organisations as Systems*

This section seeks to define systems and therefore cover systems and subsystems, parts of systems as well as interrelatedness between those parts within systems. The fundamental definition of a system

is that it is composed of interrelated parts; and that every system contains at least two elements which are interconnected (Kast & Rosenzweig, 1972). The question of what constitutes these *parts* or *elements* is dependent on the researcher's abstraction, namely, they may be physical structures or intangible ideas. Additionally, these *parts* may constitute subsystems – a term utilised by Lawrence & Lorsch (1967) to denote organisational units (sales, research and production) as well as certain sub-environments (a specific industry). It should be noted that what constitutes a subsystem is difficult to define in relation to social systems as opposed to physical and biological systems. Therefore, the research must also theorise to delineate certain system boundaries that help capture and understand the boundaries of interest for the proposed research. As Kast & Rosenzweig (1972: 450) note, “the open system has permeable boundaries between itself and a broader suprasystem”, which makes the distinction more difficult.

The interrelatedness between these systems i.e., organisational and environmental components refer to the synergy, integration or fit between components within the system. As such, the studies adopting a system-based interpretations of organisations typically adopt a lens of alignment to understand the degree of fit between organisational components: for example, the ‘fit’ between a foreign subsidiary and the parent organisation (interorganisational fit), the ‘fit’ between the ICT unit and business units (intraorganizational fit) or the ‘fit’ between the organisation and its environment. The reason being is that equilibrium (maintaining fit between components) has been shown to allow systems to adapt and evolve and are therefore classified as goal-seeking when in equilibrium. Much of management research has focused on organisational alignment as it has been well documented that alignment between organisational components leads to increased performance and offers a theoretical explanation of the firm's competitive advantage (Powell, 1992). Further elaboration on equilibrium is in the latter section.

With regard to achieving alignment between organisational components, it may be useful to refer to Barnard's (1938) *The Functions of the Executive*, who deploys a basic system framework to understand the function of management. Barnard (1938: 65) refers to an organisation as a cooperative system whereby “person and social components which are in a specific systematic relationship by reason of the cooperation of two or more persons for at least one definite end. Such a system is evidently a subordinate unit of a larger system from one point of view; and itself embraces subsidiary systems” and concludes that an organisation is a cooperation of two or more persons (cited in Kast & Rosenzweig, 1972: 448). This systems-based interpretation suggest that systems function based on cooperation and that structures are deployed to facilitate the cooperation to achieve ‘one definite end’ which can be interpreted as the outcome derived from a given strategy.

2.2.1.2 Dynamics of Cooperative and Goal-Seeking Systems

To understand alignment in the context of organisations, the dynamics of cooperation need to be examined. To understand this, two notions need to be examined as they relate strongly to the notion of alignment – as well as strategic change: 1) equilibrium; and 2) equifinality. While both open and closed systems seek to attain a state of *equilibrium* (e.g., commonly termed ‘steady-state’), open-systems tend to be characterised by dynamic equilibrium. Dynamic equilibrium suggests that open systems – such as organisations – never fully attain a steady-state as in closed systems but rather that equilibrium is ‘quasi’ (Bertalanffy, 1968; Miller, 1973). Early management literature (and even more recent studies) incorporated a conceptualisation of alignment as static – through deployment of cross-sectional or content studies that take a ‘snap-shot’ of time. However, recent literature on alignment has proposed that alignment is never fully achieved but rather remains in constant flux (Yeow et al., 2018).

Additionally, this concept has also been proposed by scholars applying chaos theory to the study of organisations who attribute the constant tension between forces of stability and instability as a characteristic of dynamic systems (Thietart & Forgues, 1995). Finally, General Systems Theory (GST) and management research have both indicated that processes (dynamic interactions between system component and elements) possess the property of path dependence (through maximum entropy), where the “lock-in characterises a state of equilibrium with a very low potential for endogenous change” (Vergne & Durand, 2010: 743; Bertalanffy, 1968). This characteristic of quasi-equilibrium also is associated with equifinality, as it suggests external conditions placed upon the system generate constant tensions that do not allow the system to achieve a continued steady-state (Bertalanffy, 1968).

The principle of *equifinality* of GST suggests that in a closed system, “the final state is unequivocally determined by the initial conditions” (Bertalanffy, 1968: 40). In open systems, equifinality has two implications: 1) “final state will be changed if the initial conditions or the course of process are altered”; and 2) “the same final state, the same “goal”, may be reached from different initial conditions and in different pathways” (Bertalanffy, 1968: 132). This concept is vital in management research as it suggests that organisations have their own dominant and independent boundary that seek to attain ‘goals’, and thus often also attempt to resist environmental conditions that force them away from a state of quasi-equilibrium (Rapaport, 1972; in Gresov & Drazin, 1997). Management scholars have used the concept to argue that there is not a ‘one-best-way’ but rather that there are equally viable strategies. For example, Reimann (1973: 462) notes that his findings “conform to the equifinality principle, in that a variety of structural arrangements appear to be equally viable strategies for the various sample organisations”. This approach is shared by the famous Miles & Snow (1978) typology where it was found that different strategic orientations have similar performance implications –

therefore there is no one best approach. Management researchers have also noted that the various approaches can be interpreted using the concept of 'fit' (Doty et al., 1993; Gresov & Drazin, 1997).

2.2.2 Organisation Theory & Fit

Systems theory has paved the way for better understanding of organisation theory – which encompasses the study of organisational systems and how they operate in conjunction with their environment. Central debates and perspectives within this domain therefore influence all areas of management research (Astley & Van de Ven, 1983). Although it is a novel and certainly difficult pursuit to attempt to link all organisational theories and their evolution in relation to the development and deployment of the 'fit' concept, the following section will only touch on the theoretical foundations to elicit a clear and concise approach to understand the subsequent application of alignment. Furthermore, organisation theory and its philosophical and methodological approaches play a vital role in how alignment and organisational systems are conceptualised. Contingency and congruence are two concepts deployed in organisational theory to understand the fit between internal organisational components and the fit between the organisation and its environment (Van de Ven, 1979; Venkatraman & Camillus, 1984; Donaldson, 2001).

Methodologically, almost all management research endeavours can be tied back to Dubin's (1978) Model of Theory Building and therefore it plays a vital role in how modern alignment research emerged. Fry & Smith (1987: 117) note that central to Dubin's approach is "placing congruence and contingency research within an accepted framework for scientific inquiry is essential to understanding and predicting organisational phenomena". Most alignment research in organisation theory, strategic management and information systems research employs either congruence or contingency to understand organisational phenomenon – and forms the basis of empirical research that is presented in the review of literature. *Congruence* (or 'fit') refers to the alignment between the organisational elements whereas *contingency* seeks to understand how various internal or external characteristics affect the alignment between organisational elements. More specifically, Dubin's model requires researchers to define the law of interaction – and therefore congruence and contingency illustrate the interaction between variables (e.g., components) to provide insight into organisational phenomenon.

It is widely acknowledged that the theoretical origins of general alignment research and conceptualisations are derived from the core notions of contingency theory and population ecology (Van de Ven, 1979; Venkatraman & Camillus, 1984; Donaldson, 2001). Building on the principles of systems theory, contingency theory seeks to understand how performance (in systems term: fitness landscape) is contingent on both internal characteristics (e.g., strategic orientation or firm size) and external context (e.g. environment uncertainty or industry type). This research also submits to the notion of equifinality, that performance derived from alignment between organisational components

and/or environment are contingent on different initial conditions placed upon it. Population ecology on the other hand investigates firm survival using the concept of inertia, where long-term alignment with the environment has been used to explain the death of an organisation (Hannan & Freeman, 1977; Hannan & Freeman, 1984). Therefore, in hopes of achieving dynamic equilibrium, firms must constantly overcome inertia (originally, structural inertia – although different types exist) to ensure survival of the firm; as Pascale (1999: 85) on chaos theory notes: “Equilibrium is a precursor to death”.

The following section will explore contingency theory as well as an application of congruence (i.e., population ecology) to provide insight on alignment from an organisation theory perspective.

2.2.2.1 Contingency Theory

The use of contingency theory is dominant within strategy literature (Drazin & Van de Ven, 1985; Ginsberg & Venkatraman, 1985; Fry & Smith, 1987) as well as information systems research – where contingency theory has previously constituted 70% of approaches adopted in the domain (Weill & Olson, 1989). Two literature reviews on the topic of strategic alignment have indicated that this trend has continued (Chan & Reich, 2007; Coltman et al., 2015). From a contingency perspective, the conditions in the environment explain variation in performance and thus the aim of management is to achieve alignment with the environment through designing appropriate organisational structures or strategies (Lewin & Volberda, 1999).

Scholars investigating alignment and employing this deterministic model often investigate contingencies such as firm size, type of industry, strategic orientation and environmental uncertainty. These contingencies are then linked to measures of performance – typically productivity, financial performance and customer benefit. Research in this domain have attempted to operationalise alignment using various analytical methods and approaches (Venkatraman, 1989). Over time, various approaches have been deployed which has created issues such as theoretical controversies and empirical contradictions (Queiroz, 2017; Sinz & McDonagh, 2019).

2.2.2.2 Population Ecology

The population ecology perspective explains the variation in organisational forms and firm survival as a result of inertial pressures (Hannan & Freeman, 1977). The two basic propositions of the model are that: 1) ‘a natural selection process goes on in the environment which determines the structural forms of organisations’; and 2) ‘that organisational forms must either fit their environmental niches or they fail’ (Van de Ven, 1979: 320). The model draws on variation, selection and retention mechanisms. Of key interest is the concept of inertia that is a result of prolonged retention. The reason being, that if firms retain the structure to fit the environment over a long time, they are prone to failure if the environment changes and they are not structurally aligned with the environment anymore. Research within the domain of strategic information systems has started to investigate the nature of inertia (or

misalignment) that is a result of long-term alignment (e.g., Besson & Rowe, 2012). These concepts have led to a paradox: organisations need to achieve alignment to maintain competitiveness and ensure increased performance, but that long-term alignment can lead to inertia. As Tushman & O'Reilly (1996: 24) conclude: "in the short run they must constantly increase the fit or alignment of strategy, structure, and culture.... In the long-run, managers may be required to destroy the very alignment that has made their organisations successful". Although the initial part (short-term alignment) has been studied extensively, the latter has not. Only recently, have scholars began offering a longitudinal illustration of strategic alignment that seeks to understand re-alignment efforts through change initiatives (e.g. Street et al., 2018). Whereas population ecology has emphasised structural inertia, inertia can also result in the form of political inertia (e.g. vested interests), economic inertia (e.g. sunk costs), psychological inertia (e.g. status quo bias), socio-cognitive inertia (e.g. firm culture) and socio-technical inertia (e.g. information infrastructure; Besson & Rowe, 2012: 106). Finally, population ecology has been similarly confronted with issues – different however, from contingency theory. The main criticisms revolve around its level of analysis, it's purely deterministic perspective as well as its conception of change. Population ecology is concerned with the study of populations and has been used to make predictions about internal organisation levels (e.g. individual, group, organisation) – which is fraught with difficulties as it is based on biological systems (Pinto, 2005). This perspective also assumes a deterministic approach to strategy and change where management is viewed as 'passive' and are not able to engage in deliberate activities designed to influence the environment (Astley & Van de Ven, 1983). Rather, organisations and open systems are both selective and adaptive, since "change is not an outcome of managerial adaption or environmental selection but rather the joint outcome of intentionality and environmental effects" (Lewin & Volberda, 1999: 523). Finally, population ecology assumes that organisations change because of structural inertia – a deterministic view – whereas research has indicated that not all firms become inert through making incremental adjustments on a continuous basis as opposed to singular radical changes (Young, 1988).

2.2.3 Strategic Management & Fit

The strategy domain has extensively utilised the concept of fit and draws on central debates in organisation theory (e.g., voluntarism and determinism) for its theoretical developments. For example, voluntarism denotes an active conscious role of management whereby strategic choices are made. From a deterministic perspective, organisations are merely reactive agents and respond to environment changes. Furthermore, the key contribution of strategy to alignment is the distinction between the content and process of strategy. Whereas content of strategy refers to research examining the content of decisions regarding goals and strategies (Fahey & Christensen, 1986), the process of strategy focuses on the events (clusters of actions) that lead to support strategy (Huff & Regner, 1987). This distinction plays a vital role in the examination of alignment as most alignment

research within information systems draws heavily on content-based strategy typologies, models and frameworks. As such, the aim is to delineate alignment conceptualisation to inform the inquiry.

The notion of fit emerged within strategy literature from the design school of strategic management as it “proposes a model of strategy making that seeks to attain a match, or fit, between internal capabilities and external possibilities”; the resulting managerial motto being ‘establish fit’ (Mintzberg et al., 1998: 24). This school suggests assessing the organisation (strengths and weaknesses) and of the external environment (opportunities and threats) and establishing alignment between the internal and external context through strategy formulation and implementation. From a content-process perspective, formulation and implementation are concerned with the content of strategy while strategy formation is concerned with the process of attaining the content of strategy.

2.2.3.1 Strategy Content & Fit

Within the strategy content domain, alignment has taken the form of strategy formulation (fit between organisation and environment), strategy implementation (fit between organisational components) and an integrated formulation-implementation perspective. The strategy formulation school is concerned with aligning the strategy with environmental conditions and draws on Chandler’s (1962) ‘structure follows strategy’ and Porter’s (1980) competitive positioning via the five market forces. This section of strategy literature draws on the industrial organisation paradigm and argues that a firm’s performance is dependent on the competitive nature and characteristics of the chosen industry’s environment (Porter, 1980; Venkatraman & Camillus, 1984). From a practitioner standpoint, the strategy formulation school recommends that managers undertake decisions that reflect environmental conditions – thus aligning the strategy with the environment.

Strategy implementation examines how internal organisational components are aligned with strategy. Of primary importance regarding implementation is the mobilisation of resources to accomplish the chosen strategy through appropriate structures, controls and leadership (Hoskinsson et al., 1999). Themes within this domain have researched the importance of matching managers to strategies (Leontiades, 1982; Szilagyi & Schweiger, 1984), techniques for assuring participation (King & Rodriguez, 1981) and increasing commitment (Schwenk, 1986), and the need to match compensation schemes to strategic decisions (Stonich, 1981; cited in Huff & Reger, 1987: 216). Although early research has disregarded environmental influences, it has now been suggested that implementation is, to some extent, “contingent on the dynamics of the organisation’s environment” (Hutzschreuter & Kleindienst, 2006: 694).

Finally, the integrated approach has arisen based on evidence that organisations take a more complex approach by attempting “achieve a fit between itself and the environment and among its internal structures and management processes” (Miles & Snow, 1980; cited in Venkatraman & Camillus, 1984).

Liedtka & Rosenblum (1996: 142) draw on the concept of 'centrality of strategic intent' to suggest that "strategic approaches aimed only at orchestrating an ever tighter 'fit' between an organisation's environment and its internal competences become less useful" and thus propose emphasising organisational purpose and its creation through learning and implementation through change. Additionally, the rejection of the formulation-implementation dichotomy has led to the need to investigate strategy process (Hutzschenreuter & Kleindienst, 2006). To conclude, researchers in the strategy content domain that sought an integrated focus have found that organisations develop strategic plans (e.g. Grand Strategy) which consider the whole organisational entity where all functional strategies align with the corporate agenda (Hitt et al., 1982).

2.2.3.2 Strategy Process & Fit

Similar to the strategy content domain, strategy process can also be comprised of internal, external and an integrated focus. Scholars within the internal focus have emphasised strategic choice and take a voluntarist approach to strategising by emphasising the role and ability of managers in achieving strategy – based on Child's (1972) work on strategic choice and intent. This approach disregards the role the environment plays in bringing about change (Astley & Van de Ven, 1983). Additionally, this perspective adopts a cybernetic system (closed-loop system – different from closed) through Child's adoption of a 'dominant coalition' and thus disregards the interaction via feedback from the environment. Due to vast limitations of this perspective, research has "shifted the focus from strategic choice to strategic change and provide a much more realistic picture of the actual strategy process in organisations" (Hutschenreuter & Kleindienst, 2006: 698).

Scholars focusing on the external perspective acknowledge that strategy making is dependent on other actors (e.g., organisations) competing within the industry for resources (Venkatraman & Camillus, 1984). Fombrun & Astley (1983: 47) suggest that "companies must begin to view strategy from a collectivist perspective" where actors within an industry must collaborate to overcome threats and take on opportunities. This approach seeks to produce a collective impact based on environmental context: such as, technological (building information systems to transfer and share data), economic (overcoming slow growth and building barriers for competition), social (develop unions or build community infrastructure), or political (collective pressure governments for legislation via lobbying). Therefore, this domain investigates how networks of actors (e.g. via actions, decision and events) lead to a corporate strategy based on the context of the environment.

The integrated approach views strategy as an overarching pattern of aligning both internal and external elements (Mintzberg, 1978; Venkatraman & Camillus, 1984; Mintzberg & Waters, 1985). Scholars in this domain have acknowledged that strategies are subject to unintended consequences – due to emergent actions. These actions are "patterns realised despite or in the absence of intentions" (Mintzberg & McHugh, 1985: 161). Based on this perspective, Hrebiniak (1981: 34) notes that "fit refers

to a broad gestalt – a particular configuration of organisation and environment that is whole and complete” and is heavily associated to the notions of an open system perspective of organisation theory (in Venkatraman & Camillus, 1984). Thus, this perspective views alignment as a pattern of interaction which corresponds to a social system.

2.2.3 Information Systems & Fit

Rather than advancing the alignment agenda from a theoretical standpoint, the information systems domain largely integrates the strategic management domain’s dominant perspective on alignment to form the Strategic Information Systems (SIS) domain. It’s been found that SIS has mirrored developments in the field of strategic management (Peppard et al., 2014) where ‘strategic fit’ has played a major role in its development (Chan & Huff, 1992).

In the early stages of research on SIS, research has sought to prove that ICT can be strategically exploited. This was a result of beliefs put forward that ‘ICT doesn’t matter’ (Carr, 2003), that commoditisation of ICT packages leads to a competitive disadvantage (Porter, 2001), or the fact that ICT investment does not ‘result in supranormal business profitability’ (Hitt & Brynjolfsson, 1996). As advancements have been made with regards to information systems and their employment by organisations, it has been empirically validated that ICT does not only generate value for the firm in terms of competitive advantage, but also improves financial performance, productivity and customer value (Gerow et al., 2014; Peppard, 2018). In order to prove this relationship, authors have employed strategic management models to test the relationship of ICT on performance, using market-based views, resource-based views, knowledge-based views and dynamic capabilities.

To further promote the usefulness of ICT, researchers started deploying alignment models to see whether ICT-related organisational components offer competitive advantages. For examples, researchers have adopted a market-based view that is frequently associated with Porter’s (1980) market forces model. Scholars have found that IS/ICT can be successfully exploited to change industry dynamics and ultimately their strategic position within the industry to become more competitive (e.g., Ives & Learnmonth, 1984; McFarlan, 1984; Banker et al., 2011). Others have adopted a resource-based view and argued that ICT is a resource to be exploited – based on Barney’s (1991) VRIO framework. Authors have proposed that ICT-based resources – both tangible and intangible – can be employed to develop competences that are difficult to imitate and thus lead to sustained advantage (e.g., Mata et al., 1995; Kearns & Lederer, 2003; Wade & Hulland, 2004).

The knowledge-based view conceptualises information and knowledge as a resource – where authors have shown that knowledge sharing and participation between ICT and business departments leads to performance increases and a competitive advantage (e.g., Kearns & Lederer, 2003; Kearns & Sabherwal, 2007). More recently, scholars have incorporated the dynamic capabilities view that builds

on the resource- and market-based views by linking resources (capabilities) to specific industries (markets). Again, scholars found that intellectual alignment represents a capability that increases performance, creates competitive advantage, and can be used to navigate quick paced environments (e.g., Chen et al., 2008; Schwarz et al., 2010; El Sawy & Pavlou, 2010; Lavallet & Chan, 2018; Yeow et al., 2018; Tai et al., 2019). These findings have consistently shown that ICT can be exploited strategically, and that alignment is key to this exploitation.

Overall, the strategic management application to IS/ICT has shown that the strategic use of information systems does indeed offer a competitive advantage as well as enhancing performance – as numerous scholars have mentioned that IS/ICT is used as a ‘competitive weapon’ (Parsons, 1983; Wiseman & MacMillan, 1984; Ives & Learnmonth, 1984; Bakos & Treacy, 1986; Kim & Michelman, 1990). In a concluding remark, Chan & Huff state that “information technology and company strategy are very much intertwined” and that “ICT researchers have a contribution to make in this area” which requires researchers to ground SIS in ‘relevant business disciplines’ such as strategic management (1992: 197). The following section will investigate ‘strategic alignment’ by putting it into the forefront and examining it more closely through the lens of process research.

2.3 Strategic Alignment

This section is concerned with strategic alignment (SA) – and reviews literature that examines the fit between business and ICT components whereby the components can refer to individuals, groups, structures and strategies. Within the literature, four types of SA have been examined: social, operational, intellectual and cross-domain that primarily draw on Henderson & Venkatraman’s (1993) Strategic Alignment Model. The model influenced certain aspects of alignment research such as intellectual, operational and cross-domain. Over the decades of strategic alignment research, several surveys (e.g., Kappelman et al., 2019) have consistently ranked strategic alignment as a top three CIO issue. As a result, research has started to consider informal organisation and social aspects to further understand alignment. Recently, Gerow et al. (2014) have conducted a nomological analysis whereby social alignment has been shown to precede intellectual alignment. The aim here is then to focus the research endeavour on understanding the social and intellectual aspects of aligning to advance the research agenda.

While the focus of this research inquiry is on strategy development, the emphasis will be placed on social and intellectual alignment. For example, strategy is a result of social- and intellectual-capital co-creation (Nahapiet & Ghoshal, 1998) and strategy process is comprised of intellectual and social processes (Horovitz, 1984). Furthermore, organisations are cooperative systems and therefore produce intellectual capital and operate through social networks to achieve goals. Therefore, this

review will endeavour to investigate these types of alignment to make sense of their dynamic and how they contribute to overall strategic alignment.

2.3.1 Social Alignment

Social alignment is defined as “the state in which business and ICT executives within an organizational unit understand and are committed to the business and ICT mission, objectives, and plans” (Reich & Benbasat, 2000: 82) as well as “the level of mutual understanding of and commitment to the business and ICT mission, objectives, and plans” (Reich & Benbasat, 1996: 58). Reich & Benbasat used the framework proposed by Horovitz (1984) in the strategic management domain to differentiate between intellectual and social processes of strategy formulation and implementation. One of the key arguments that Horovitz presented was that strategic planning is a social process, and in order to successfully implement a strategy, the commitment of relevant individuals (e.g., managers and executives) is required to obtain organisational consensus to ensure proper implementation. The following sections are grouped based on the researcher’s interpretation of the strategic alignment literature – as many empirical studies do not explicitly mention the use of ‘social alignment’ but rather include variables or models relating to the social aspects of strategic alignment such as governance and control, communication, social capital and relationships among and between business and ICT organisational components.

2.3.1.1 Governance and Control

Traditionally, top management viewed ICT departments as a service provider: to supply ICT services and products for certain operations within the firm – termed ICT management. From there, IT Governance (ITG) was coined to recognise the strategic role of ICT – and as such, is concerned with managing and transforming ICT for current and future needs of the business as well as various stakeholders such as customers and government bodies (Van Grembergen et al., 2004). The central aim of ITG is to achieve business-ICT alignment (Huang et al., 2010) through the use of structures (e.g., steering committees), processes (e.g., strategic ICT decision making) and relational mechanisms (e.g., shared learning and business-ICT partnership). From a contingency perspective, ITG has been shown to enable the achievement of intellectual alignment (Luftman & Brier, 1999). Based on the aforementioned mechanisms, ITG can be viewed as a management system designed to facilitate the planning and implementation of strategies within the organisation. Therefore, ITG is a good starting point in the investigation of social alignment since ITG facilitates the social aspect of intellectual alignment by gaining organisational consensus and commitment. Finally, it should be noted that while ITG has been studied to a great degree – ITG with respect to alignment has only been studied very recently.

Buchwald et al. (2014) reviewed the literature on ITG and have found various conceptualisations including: structure of relationships and processes to control the ICT (Ali & Green, 2005, 2007); mechanisms for leadership and organisational structure and processes (Nfuka & Rusu, 2010, 2011); an organisational model of decision making (Ribbens et al., 2002) as well as a tool for developing strategic alignment between ICT and business (Lee et al., 2008ab; cited in Buchwald et al., 2014: 131 – 132). Additionally, the review indicated several ‘success determinants’ for effective ITG; such as: ICT steering committees, communication with business departments, relationship management and fostering shared understanding of ICT in organisational departments (Buchwald et al., 2014). These success determinants confirm findings of other social alignment research presented in the latter section. The adoption of ITG in organisations is also a result of external triggers (e.g. market and regulatory pressure) as well as internal triggers (e.g. need for efficiency).

Wu et al. (2015) consolidate intellectual alignment and ITG within a nomological framework to identify ITGs influence on organisational performance. The ITG construct is composed of mechanisms: decision-making structure, formal processes and communication. Wu et al. (2015) found that the mechanisms contributed relatively equally to the attainment intellectual alignment, and resultant organisational performance. Rahimi et al. (2016) investigated ITG capabilities: structures and processes. The structural construct refers to organisation design e.g. management systems and includes mechanisms such as ICT steering committee, project committee, and CIO on the executive board; whereas, the process construct refers to ICT decision-making and Strategic ICT Planning.

The study found that the ITG capabilities induced coordination and collaboration between ICT and business departments that resulted in the development of intellectual alignment – through consistent interaction and liaison (Rahimi et al., 2016). Kude et al. (2017) also address ITG capabilities and categorise them as regulation-oriented (ICT roles and ICT processes) and consensus-oriented (ICT group and relational capabilities). The authors found that ITG capabilities are not only positively correlated with the degree of alignment, but also have strong effects on resource relatedness (e.g. ICT and business process relatedness). ITG capabilities are amplified by shared knowledge between business and ICT units and played a fundamental role in assisting ICT management to make judgment calls about various business processes (Kude et al., 2017). Finally, Heroux & Fortin (2018) investigated the moderating role of intellectual alignment between ITG (conceptualised as: Board ICT competences and Executive Management ICT competence) and innovation. It was found that greater ICT competence of executives enhanced innovation and that intellectual alignment reinforces that relationship (Heroux & Fortin, 2018). Overall, ITG research will inform the organisational context as it pertains to management systems, where mechanisms are deployed – such as steering committees, strategic ICT planning and centralised ICT decision making – to ensure social alignment.

2.3.1.1.1 Steering Committees

Steering Committees (SCs) play a key role in ITG. Scholars note that SCs are a 'obvious necessity' in managing ICT (Earl, 1989) and have been established to: 1) ensuring top management involvement in ICT planning; 2) ensuring the alignment between ICT and business strategy; 3) improving communication with top and middle management; and 4) changing user attitudes to ICT (Ward & Peppard, 2003: 370). It has also been argued that steering committees play a fundamental role in the achievement of intellectual alignment (Mikko, 2011; Ali & Green, 2012). Although steering committees are discussed first, it should be noted that the latter ICT governance mechanisms also aid and work in conjunction with steering committees. For example, it has been shown "that the CEO's participation can improve certain aspects of ICT such as its alignment with organizational plans, its perceived importance, and effectiveness" (Raghunathan, 1992: 83). Therefore, these sub-level mechanisms such as participation, communication and knowledge sharing will be examined individually to provide a deeper understanding.

A Steering Committee "provides a forum where senior managers and users can discuss [business-ICT] direction, match corporate concerns with technological potential, and build commitment to policies" (Nolan, 1982: 76) and is defined as a "formal organisational structure for managing various aspects of business-ICT fit" (Karimi et al., 2000: 210). The SC, or the 'executive steering group' is composed of both business-led strategy/functional groups as well as the ICT strategy group – who have specific responsibilities in developing coordinating mechanisms for the strategic management of ICT (Ward & Peppard, 2006). Additionally, it has been found that initiatives that are started and driven using ICT-SCs were found to be more successful and offer greater performance opportunities at firm-level (Prasad et al., 2010). As such, the aim of a SC is to achieve social alignment, by getting both sides to agree to policies and commit to them.

Raghunathan (1992) investigated CEO participation on ICT-SCs and the resultant effect on business-ICT plan alignment. The authors hypothesised that CEO participation increases the perceived usefulness of ICT and therefore analysed data where the CEO was a member of the steering committee ($n = 23$) and when not a member ($n = 39$). The study confirmed that CEO participation increased intellectual alignment, increased perceived importance of ICT strategic planning, and increased the perceived effectiveness of ICT (Raghunathan, 1992). Additionally, Kearns & Lederer (2003) found that CEO's play an important role on ICT-SCs by validating the strategic usefulness of ICT by persuading various departments and management teams of its importance (Earl & Feeny, 2000). Whereas the previous authors identified the importance of CEO participation, Wu et al. (2015) found that CIOs on ICT-SCs are also essential for promoting intellectual alignment by creating an institutional context for CIOs and Top Management Teams to collaborate in decision making processes.

Karimi et al. (2000) investigated the impact of ICT-SCs on ICT management sophistication. ICT management sophistication (also termed ICT maturity) is a measure of assessing the effectiveness of ICT management within an organisation. Extant literature has identified that greater ICT management maturity within an organisation suggests: 1) ICT managers understand and are aware of an organisation's long-term strategy (Lederer & Mendelow, 1987; Venkatraman & Ramanujam, 1987), 2) the organisation strategy supports and is supported by the ICT strategy (Cash et al., 1988; Earl, 1989) and that 3) ICT performance is measured based on its contribution to the firm's overall objectives and not purely based on efficiency and cost saving (Cash et al., 1988; Venkatraman & Ramanujam, 1987; in Karimi et al., 2000: 211). The authors found that the use of ICT-SCs within organisations is a great predictor of both ICT sophistication (maturity) and intellectual alignment. High ICT maturity also suggests a centralised governance structure of ICT decision making, and that ICT decisions made in ICT-SCs are more effective in allocating strategic decisions to organisational owners which leads to better alignment between business and ICT capabilities (Wu et al., 2015).

2.3.1.2 Knowledge & Understanding

The terminology of 'shared domain knowledge' is rather unique to the setting of information systems research – as opposed to the wider management domain. However, regardless of the terminology employed, the sharing of knowledge and information processing have both a clear and a strong rooted origin in early management scholarship. The foundational origin that pinpoints the need for sharing knowledge stems from the fact that individuals are bounded by their information processing capabilities (March & Simon, 1958). Additionally, Galbraith (1974: 28) proposed that "the greater the uncertainty of the task, the greater the amount of information that has to be processed between decisions makers during the execution of the task" - termed the information processing model. Information and knowledge of a decision maker is limited; however, by sharing knowledge and information among the group (e.g., steering committees or CEO-CIO interaction), the processing capability increases and greater access to information through knowledge allows for better decisions to be made. As such, much research has acknowledged that team heterogeneity leads to better decision making and greater organisational performance (Hambrick et al. 1996). Additionally, it has also been found that sharing of prior knowledge increases the firm's ability to acquire new knowledge that it can utilise regarding strategic decisions – in addition to facilitating cross-functional knowledge transfer (Cohen & Levinthal, 1990). These suggestions have also been noted in the ICT field (Boynton et al., 1994; Nelson & Coopridge, 1996; Ranganathan & Sethi, 2002).

It has been commonly suggested that shared domain knowledge benefits social alignment (Reich & Benbasat, 2000; Hu & Huang, 2006; Kearns & Sabherwal, 2007; Wu et al., 2015). Reich & Benbasat (2000) investigated factors that influence the social dimension of alignment and found that only shared domain knowledge increases both short- and long-term intellectual alignment. As such, the authors

pose the question: “Can we create knowledge through steering committees, job rotation, and elaborate planning processes?” (Reich & Benbasat, 2000: 107). The study shows that shared domain knowledge is an essential part of social alignment and that SCs can facilitate the transfer of knowledge between functional units and the ICT department. Further studies have extended Reich & Benbasat’s (2000) model of social alignment. For example, Hu & Huang extend the model by incorporating relationship management as a construct and found that the relational mechanisms were not only successful in enhancing shared domain knowledge, but also increase the communication flow between ICT and other functional departments as well as increasing the perception of a successful ICT department (Hu & Huang, 2006, 2007).

Kearns & Sabherwal (2007) draw on Reich & Benbasat (1996, 2000) and examine knowledge management as a mechanism to facilitate knowledge integration across the business and ICT units. Regarding knowledge integration, it was found that 1) both ICT and Business managers’ participation in business planning and ICT planning, respectively, is positively associated with intellectual alignment; and 2) that top management’s knowledge of ICT is both positively associated to ICT managers’ participation in business planning as well as business managers’ participation in strategic ICT planning. It should also be noted that the authors found evidence that when organisations emphasise the need and commitment for knowledge management e.g., absorptive capacity, they can increase the employees and managers awareness of business and ICT initiatives and thus support the skill and knowledge requirements for ICT strategies and projects (Kearns & Sabherwal, 2007). While the factors presented above are associated positively with intellectual alignment, Kearns & Sabherwal (2007) suggest other constructs for future research that have the possibility of inhibiting business-ICT knowledge integration such as: knowledge hoarding, self-interest, inertia and social attachment.

Preston & Karahanna (2005, 2009ab) focus on CIO and Executive Management shared understanding and vision. Preston & Karahanna’s (2005) study identified three factors that facilitate shared understanding between the CIO and the CEO. First, a formal CIO position on the board is instrumental in facilitating shared understanding with the CEO. Other scholars have also noted that the appointment of the CIO is more important than direct reporting for communication and shared understanding (Feeney et al. 1992) and facilitates stronger relationships with the CEO resulting in CEOs placing higher priority on strategic ICT plans and greater influence of ICT on high-level decisions (Jones et al. 1995) and that stronger CIO-CEO relations influence the alignment process (Karahanna & Preston, 2013). Secondly, Preston & Karahanna (2005) suggest that ‘CIO educational efforts’ are an antecedent to intellectual alignment – and this requires that CIOs educate members of the executive board about the capabilities that ICT offers. This is essential since lack of understanding has been found to be an inhibitor of business-ICT alignment (Luftman, 2000; Luftman et al. 2006). Finally, the third factor that influences shared understanding is shared language (Preston & Karahanna, 2005). Shared language is

essential as it provides the foundation for shared understanding; for example, an interview extract from Feeny et al. (1992: 435) from a CEO speaking about their CIO stated, “I have a lot of confidence in him, whereas his predecessors used to talk arcane, impenetrable stuff”. This suggests that the CEO had difficulty with previous CIOs due to the terminology they used in meetings to support ICT projects and capabilities.

Preston & Karahanna (2009a) look at shared vision as opposed to shared understanding and propose six visioning mechanisms that enable intellectual alignment. Some of these mechanisms are derived from their earlier study (Preston & Karahanna, 2005). The visioning mechanisms are shared business language, visioning network hierarchy, CIO educational leadership, CIO-TMT commonalities, CIO strategic knowledge, and CIO relational capital (Preston & Karahanna, 2009a). Additionally, the authors make the case that CIOs may not be able to deploy and utilise all the visioning mechanisms due to trade-offs that occur within specific contexts. Also, Preston & Karahanna (2009b) carry out a more advanced study and develop a nomological network of social dimension antecedents for intellectual alignment – this study is the first to offer causal proof (as opposed to significant correlation) that social alignment is indeed an antecedent for SA. They empirically validate that shared understanding is the most vital antecedent for intellectual alignment. In addition, the authors found that shared understanding also mediates the influence of shared language, CIO business knowledge, and TMT strategic ICT knowledge on Business-ICT alignment (Ibid.).

Benlian & Haffke’s (2016) CEO-CIO perceptual congruence model seeks to understand social alignment with regards to CEO-CIO shared understanding. Whereas initial studies have sought to understand social alignment with regards to unitary concepts and measuring a single direction of understanding and perception, Benlian & Haffke (2016: 115) offer a study that “theoretically and empirically differentiates between actual similarity of perceptions (i.e. actual agreement), intrapersonal perception of agreement (i.e., perceived agreement), and the interpersonal ability to accurately predict one another’s perceptions (i.e., understanding)”. Therefore, their study argues that ‘mutual or shared understanding’ may not be as important as previously thought. Their data found that the “CIO’s understanding of the CEO outweighs the importance of the CEO’s understanding of the CIO in affecting collaboration quality – and thus that the effects of understanding are unilateral rather than bilateral” (Ibid: 115).

2.3.1.3 Communication

Mutual understanding and shared domain knowledge, communication is key in the co-creation of social and intellectual capital – necessary for the successful attainment of intellectual alignment. For example, mutual understanding and shared domain knowledge are facilitated by communication which is key to the co-creation of social and intellectual capital (c.f., Nahapiet & Ghoshal, 1998). Communication is essential to the social dimension of strategic alignment (Edwards, 2000) as well as

being a key enabler in developing the foundation for the quest of alignment (Teo & Ang, 1999; Vermerris et al., 2014). Therefore, communication – although mentioned in the earlier section – will be discussed in more detail to offer a more detailed understanding of communication between executives as well as between functional groups and the ICT department.

Authors have noted that communication is vital for social synergy (Edwards, 2000) as well as being a key enabler in developing the foundation for the quest of alignment (Teo & Ang, 1999; Vermerris et al., 2014). Researchers in this domain have examined the quality and richness of communication (Calhoun & Lederer, 1990; Johnson & Lederer, 2006), communication channels (Hu & Huang, 2006) as well as the role of communication as an aligning mechanism (Vermerris et al., 2014).

Calhoun & Lederer (1990) stress the importance of quality of the communication when discussing strategic plans. The data indicated that organisations utilise differing communication tactics, each of which has implications that enable strategic planners to improve the communication of their strategies. The study found that: 1) written, as opposed to oral communication is more effective; 2) summaries of strategic plans are essential and allow for more effective communication as opposed to '5-year strategy books'; 3) executive management were highly effective in communication strategic plans through dialogue; and 4) mission statements are instrumental in sharing the strategic vision at an organisation-wide level (Calhoun & Lederer, 1990).

Similarly, Johnson & Lederer (2005, 2007) also seek to understand the richness of communication between the CEO and CIO using various mediums such as face-to-face, e-mail, business memo or via telephone. The study revealed that both CEOs and CIOs agree that face-to-face is the richest medium of communication. Interestingly, it was found that the frequency of dialogue between the CEO and CIO did not influence the degree of shared understanding regarding the current role of ICT within the organisation. The data also found that communication frequency is increased when the CEO and CIO have a greater shared vision of ICT (Johnson & Lederer, 2007). In another research project, Johnson & Lederer (2005) investigate 'convergence' (i.e. mutual understanding) between the CEO and CIO with regards to frequency and richness of communication. The data illustrates that frequency increased conversations and therefore facilitates greater intellectual alignment while channel richness had no influence on the intellectual aligning process (Johnson & Lederer, 2005).

Within a case study, Hu & Huang (2006) identified various communication channels utilised by CEO-CIO interactions – and found that communication between both executives acts as an organisational driver. Interestingly, the authors found that both formal communication channels e.g. liaison program between business and ICT managers, temporary teams and ICT Steering Committees and informal channels were responsible for driving alignment. This finding reveals that interactions between executives (or other groups) can occur outside the defined scope of the management system.

Vermerris et al. (2014) investigated the role of communication as an aligning mechanism in ICT projects. It emerged that in some ICT project cases, no communication mechanisms were created to discuss the business and ICT interests within the context of a group setting and that this led to difficulties in realised business improvements from the project as a result of it being purely technology driven from the side of ICT. It was also found that ICT projects were more successful through the creation of ICT-SCs as they facilitated communication during the duration of the project which allowed relevant project streams and deliverables to address concerns and liaise with relevant stakeholders. Overall, the authors found that communication is essential in delivering business value from ICT projects by integrating business and ICT needs into the scope of the project (Vermerris et al., 2014).

2.3.1.4 Social Capital & Informal Organisation

This section will discuss alignment with regards to social capital theory as well as the 'informal organisation' (as opposed to formalised structures and reporting channels). Social capital can be defined as "resources embedded in a social structure which are accessed and/or mobilised in purposive actions" (Lin, 1999: 35). Within the informal organisation context, individuals can communicate with others outside their designated work groups through informal socialising ties – this allows 'group members' to create social relationships across organisational units and across hierarchical levels (Oh et al., 2004). As previously noted, Hu & Huang (2006) identified that informal CEO-CIO interactions were also responsible for driving alignment. These relationships allow for resources to be mobilised for specific actions outside the scope of the original strategy. For example, Burgelman (1991) found that within the autonomous strategy process, managers attempt to identify resources outside the regular resource allocation process where managers/individuals can mobilise support for certain initiatives that arise in a bottom-up manner. These statements suggest that from a social perspective, alignment can most likely be influenced from the informal social relationships. To exemplify, Chan (2002: 97) poses the question of: "Why haven't we mastered alignment?" and suggests that "informal organisation structures played a far more important role than expected in improving ICT performance" from intellectual alignment. Therefore, the following section will now provide an overview of literature that seeks to investigate social capital theory and informal organisation in the context of strategic alignment research (Chan, 2002; Reich & Kaarst-Brown, 2003; Karahanna & Preston, 2013; Schlosser et al., 2015; Moon et al., 2018).

Chan's (2002) study found that informal organisational structures play a far more important role for achieving intellectual alignment compared to formal structures – and, one can argue that in reality, formal and informal structures cannot be segregated and are merged in organisational life. The author suggests that informal organisation structures are composed of "various informal structures, connections, and procedures that people use to get their work done, such as social networks, communities of practices, cross-department relationships, unofficial agreed-on processes, flexible

division of work, and such” (Chan, 2002: 107). These structures are quite reminiscent of Burns & Stalker’s (1961) notion of an organic system as opposed to the formal mechanistic system characterised by a defined and enforced hierarchical structure of control, authority and communication. Therefore, the bifurcation of formal and informal structures becomes necessary to understand the informal structure’s relevance – but from a realist standpoint, they are inseparable due to their being intertwined. Chan’s (2002) extracts from interview data follow a more organic approach to organising where executive members of the firm emphasise employees’ competence, empowerment and proactivity. Thus, in providing a summary, the author stated that themes are “better captured under ‘social composition,’ ‘virtual structure,’ or ‘informal organisational structure’” (Chan, 2002: 106). To conclude, the major finding is that formal ICT structure is only one component of achieving and sustaining alignment, and that future research should investigate the influence of informal organisational structure and these ‘social networks’ have on alignment.

Ghosh & Scott’s (2009) research identified organisational practices that facilitate knowledge sharing via social capital. These practices overcome the knowledge gaps that inhibit the creation of social alignment. Their definition of social alignment acknowledges the role of informal organisational structures as well as informal teamwork. Social capital plays an instrumental role in the informal organisation; therefore three dimensions were developed to examine it further: 1) generalised trust: the social aspects that govern types and tones of interactions e.g. increased teamwork among staff, opens to diverse views and flexibility/tolerance to change; 2) identification: the issues that relate to fraternity within the cross-firm work group e.g. ownership of projects, strong group identification and common goals; and 3) knowledge-sharing norms: the rules and norms governing communication e.g. unwritten rules of interaction, common conventions and shared language/experiences (Ghosh & Scott, 2009: 22). These dimensions are imperative as social capital resources only exist within a certain network or set of relationship between individuals, and the resources cannot be separated from that specific social network (Ibid.). As these resources are created through interaction, they can facilitate shared understanding and knowledge that will or can promote alignment. In order to facilitate the development of social capital, it has been suggested that one needs to engage in *bonding activities* to build generalised trust, *linking activities* to encourage ownership of projects as well as *bridging activities* to develop group knowledge and common language that results in work being conducted more efficiently (Baum & Ziersch, 2003; in Ghosh & Scott, 2009). Although Ghosh & Scott’s (2009: 27) research focuses primarily on ICT sourcing regarding social alignment, the guidelines for developing relationship alignment are identified: 1) identify knowledge gaps; 2) involve client staff in building social capital; 3) provide funds for social capital building activities; 4) establish linkages that go beyond day-to-day development activities; and 5) invest in knowledge management systems.

Reich & Kaarst-Brown (2003) investigate the co-creation of social and intellectual capital by looking at ICT career transitions. The authors find that when ICT employees are placed into the business domain social capital is created. Furthermore, the diffusion of ICT employees into business positions led to an increase in the ICT department's social capital – enhancing the shared language, understanding and trust between departments and the ICT unit. This research enhanced the previous section on shared understand and knowledge, as BITA's challenge is to disseminate ICT knowledge through the organisation as well as social networks with the aim of engaging various functional groups with ICT-related projects and strategies (Nelson & Coopride, 1996; Reich & Benbasat, 2000). Although not explicitly mentioned by the authors, these transitions could create and expand relational networks between organisational actors thus forming or influencing informal work groups.

Schlosser et al. (2015) investigate the social dimension of alignment using a model that identifies ITG mechanisms (formal and informal integration mechanisms) as a prerequisite for social alignment – which is conceptualised as the social capital between business and ICT departments as well as ICT personnel's business understanding. The authors define informal integration mechanisms as those concerned with the “development of network relationships by supporting working toward a common goal and increasing dependency among team members” (Schlosser et al., 2015: 121). Additionally, it was noted that these informal mechanisms do not directly influence the formal management system but rather complement it (Schlosser et al., 2015). Interestingly, this study found that informal mechanisms (derived from informal structure – social networks and relationships) had a greater influence and effect on social alignment and performance in comparison to formal integration mechanisms (Schlosser et al., 2015) -thus reemphasising the importance of informal organisational structures and the need for future research. However, this study (and others) are cross-sectional in nature and thus Schlosser et al. (2015) urge scholars to conduct the research from a longitudinal perspective.

Moon et al. (2018) develops a model that investigates the influence of the relational leadership of Chief Security Officers on the Business-ICT social alignment as well as the outcome of that alignment in government organisations – specifically in the Korean context. More specifically, their model argues that relational leadership is a prerequisite for structural, cognitive and relational linkage that leads to integrated knowledge (i.e. social capital). Based on Nahapiet & Ghoshal's (1998: 251) model of social and intellectual capital co-creation, the three dimensions referred to are the structural dimension (network ties, network configurations and appropriable organisations), cognitive dimension (shared codes and language, shared narratives) and relational dimension (trust, norms, obligations, and identification). Moon et al. (2018) define social alignment as composed of the three aforementioned dimensions/linkages. Their study reveals that relational management by the Chief Security Office positively influences social alignment, which in turn also affects the integrated knowledge between the CSO and other business executives. Furthermore, integrated knowledge (intellectual capital

derived from social capital) leads to greater information security system effectiveness as well as organisational performance (Moon et al., 2018). Therefore, the findings suggest that the CSO through their relational leadership role should engage in relationship management (develop network ties) within the organisation. Finally, the authors also found that within the South Korean government, informal network ties exist that are derived from institutional ties such as university alumni as well as regionalism – and that these informal ties and relationships have greater influence than formal structure and authority within government organisations (Moon et al., 2018). The authors suggest that a longitudinal observation is required to understanding the influence of strategic and social alignment over time (Ibid: 63).

2.3.1.5 Relationships

Executives, and CEOs specifically, play a fundamental role in promoting ICT initiatives within the organisation – and this adds to the perceived importance that the ICT function plays (Earl & Feeny, 2000). The social dimension has extensively focused on both mutual understanding and shared domain knowledge, which is derived from communication between business and ICT. The following section will delve into the business-ICT relationship by discussing some insights from CIO, CEO and TMT relationships that contribute to the development of intellectual alignment. Therefore, this section will examine the CEO (Jarvenpaa & Ives, 1990; Edwards, 2000; Shao, 2019), the CIO (Chen et al., 2010; Moon et al., 2018), the CEO-CIO relationship (Feeny et al., 1992; Kearns & Lederer, 2005; Preston & Karahanna, 2005; Johnson & Lederer, 2007; Benlian & Haffke, 2016), top (senior) management (Premukumar & King, 1992; Dutta, 1996; Willcoxson & Chatham, 2004) as well as the CIO-TMT relationship (Preston & Karahanna, 2009; Krotov, 2015) and their influence on the social and intellectual dimension of business-ICT alignment.

The CEO takes the role of a communicator whose aim it is to communicate strategies through both formal and informal channels by clarifying and promoting organisational objectives (Gorton & Martin, 2018). Therefore, scholars have been interested in how CEOs promote ICT strategies within the organisation. During the introduction of ICT into the organisation, CEOs primarily viewed ICT as a cost-reduction tool; however, now it has been argued that CEOs must acknowledge the strategic value of ICT and the central role that ICT has in the organisation strategy (Jarvenpaa & Ives, 1990). Therefore it can be noted that ICT's success is based on the perception of ICT by the CEO. Additionally, a study from 1982 to 1987 found that CEOs were more likely to discuss ICT in a retrospective manner by linking it to past events as opposed to talking about ICT for future events and how ICT can shift their strategy (Javenppa & Ives, 1990). Edwards (2000: 47) looked at CEO behaviour (conceptualised as: communication, strategic interaction, resource utilisation and leadership) and argued that the behaviour “has an important role to play as the catalyst for strategic alignment”. The study also confirmed the role of the CEO as a facilitator by interacting with various organisational members to

promote collaboration and a shared vision – which results in a coherent and committed team that can effectively implement ICT strategies and achieve intellectual alignment (Edwards, 2000). This notion is derived from the fact that an organisation is a community where communication is vital in creating networks to gain momentum to engage in strategic change (Edwards, 2000). In a more recent study, Shao (2019) investigated the effect of leadership behaviour on intellectual alignment and found that, controlling for industry and organisation size, idealised influence, inspirational motivation, and a flexibility-oriented culture promoted by the chief executive positively influences intellectual alignment.

While the role of the CEO has been extensively studied in management research, the role of the CIO and their presence on the executive board is a much more recent phenomenon. Since communication is an antecedent for shared understanding, the formal position of a CIO on the executive board has been promoted as an enabler for business-ICT alignment (Preston & Karahanna, 2005; Wu et al., 2015). It has also been noted that the role of the CIO has shifted from a traditionally supply-side approach e.g. exploiting existing ICT competencies to a demand-side role which concerns the exploration of ICT-enabled business opportunities (Chen et al., 2010). It was found that the supply-side approach influenced the demand-side leadership approach which is attributed to greater ICT management sophistication (Ibid.). This finding suggests that firms with a successful history in ICT management are more likely to have CIOs with the ability and momentum to shape the organisation strategy using ICT strategies. In another study, Moon et al. (2018) investigated the role of the Chief Security Officer (responsible for Information Systems Security) with regard to relational leadership and found that the relational mechanisms of the executive (e.g. network ties, informal channels, trust, norms) played a vital role in developing social cohesion amongst departments and thus contributed possibility to intellectual alignment.

The CEO-CIO relationship has also been examined due to its influence in obtaining top management support, commitment, and involvement for the strategic exploitation of ICT. Organisations in which the CIO has established a solid relationship with the CEO seem to have extensive ICT backing (Feeny et al., 1992). Feeny et al., 1992 found that the relationship between the CEO and CIO is stronger when the CIO has a formal position on the executive board, contradicting previous literature stating that a direct reporting line is more productive. This finding was also supported by Preston & Karahanna (2005) who stated that the formal position of the CIO within the organisation is a primary enabler of creating shared understanding. Additionally, it was found that the CIO plays an important role as an educator in that their power and network should be utilised to educate various functional groups on the benefit of ICT and in developing strategic plans that support and is supported by the ICT strategy (Preston & Karahanna, 2005). Benlian & Haffke (2016) offer interesting insights into the relationship between CEO and CIOs. A significant amount of literature addresses the necessity for having a strong

partnership between both executives and its influence on effective SA; however, scholars have not considered “how their ability of mutual perspective-taking affects the quality of collaboration in their partnership” (Benlian & Haffke, 2016: 104). Previous research has adopted a unilateral approach to investigation mutuality. The bilateral perspective taken in this study indicated that CIOs understanding of the CEO is of greater importance in determining and predicting the quality of the relationship and indicates the degree of collaboration – whereas the CEOs understanding of the CIO is not a relevant indicator (Benlian & Haffke, 2016).

While the role of executive management is vital, organisations are composed of employees – which are also deemed to influence intellectual alignment through required social cohesion. For example, the diffusion of ICT personnel into functional departments increased the ICT function’s social capital by strengthening the common language and trust between business and ICT units (Reich & Kaarst-Brown, 2003). Chong et al. (2011) investigate employee alignment to attain synergy between business and ICT- and conceptualise employee alignment as: perceived organisational trust, perceived communication on BITA strategies to employees, perceived employee commitment to BITA strategies and perceived knowledge on SA. The findings suggest that organisational trust, communication and knowledge on business-ICT strategies has a significant and positive influence on the attainment of intellectual alignment (Chong et al., 2011). Wong et al. (2012) investigate how employee alignment orientations impact the implementation of intellectual alignment – by conceptualising employee alignment as employee trust, communication, commitment and knowledge. The authors trained their neural network to revise their model after a series of evolutions using simulations and found that only employee communication has a direct influence on the successful implementation of intellectual alignment; whereas, trust and knowledge influence communication, and commitment influences trust (Wong et al., 2012).

2.3.2 Intellectual Alignment

Intellectual alignment is defined as “the degree to which the ICT mission, objectives, and plans support and are supported by the business mission, objectives and plans” (Reich & Benbasat, 1996: 56) – and precedes social alignment. The social dimension seeks to create social capital which is utilised to generate intellectual capital (Ghosh & Scott, 2009). Therefore, social alignment facilitates intellectual alignment. Pinpointing the precise themes within intellectual alignment literature is particularly challenging, due to the conceptualisation of intellectual alignment. While some authors suggests that intellectual alignment is content-based, others heavily emphasis literature on Strategic IS Planning (SISP) to denote intellectual alignment as a result of planning initiatives.

The following section will begin by reviewing SISP due its evolutionary and historical significance that led to the emergence of the term ‘strategic alignment’. Then, contingency factors will be outlined to

understand contextual influences and triggers that impact the degree of strategic alignment (often used synonymously with intellectual alignment in early ICT literature). Finally, both content and process-based strategic management applications of intellectual alignment will be examined from an equifinality perspective to indicate how scholars within the SIS domain leverage strategy-based models to explain strategic alignment.

2.3.2.1 SISP & Planning Alignment

Early research on the topic of strategic alignment was concerned with aligning the ICT plan with the business plan; hence, studies examined the role of ICT planning. As organisations have evolved in their utilisation of ICT, the concept of SISP was introduced to denote the strategic nature of the planning process. This shift can be explained by the perception of ICT in organisations over three eras.

- Henderson & Venkatraman (1989) observed that organisations were initially engaging in reactive ICT planning by responding to a given business strategy by using ICT to control finances and projects.
- The second era is derived from the recognition of ICT's ability to shape or enable strategy and thus focused on high-level integration between business and ICT strategy and reflected a more externally-oriented competitive perspective (Henderson & Venkatraman, 1989).
- The final era emerged as a result of rapidly changing environments, where SISP was employed and ICT viewed as dynamic. This current state "requires that management must understand the strategic fit between the formulation of an ICT strategy and the implementation of this strategy as an evolving ICT infrastructure" (Henderson & Venkatraman, 1989: 2). Therefore, SISP and intellectual alignment (e.g. strategic fit) are closely knit.

Some authors have stated that intellectual alignment is an outcome of SISP (Lederer & Salmela, 1996; Mentzas, 1997; Grover & Segars, 2005; Newkirk et al., 2008) while others suggest that business-ICT plan alignment is part of the SISP process (Henderson & Sifonis, 1988; Doherty et al., 1999). According to Mentzas (1997), SISP methodologies all tend to make explicit reference to business strategy and ICT strategy; where researchers have attempted to integrate business and ICT strategies or using SISP to identify ways of incorporating ICT strategy within the overarching corporate strategy. These conceptions regarding the alignment between the business and ICT domain is also a result of the perception of the role that ICT plays within the organisation (Premkumar & King, 1992; Earl, 1993; Chen et al., 2010).

The changing shifts in perception of ICT also resembles the evolution of literature on intellectual alignment – where ICT transforms from a support role to a strategic role. Therefore, the following section will chronologically illustrate how literature and theory has changed to fit with the changing environment and perception of ICT.

King (1978) was the first to show that ICT planning is not close to the strategic planning process of the organisation – a process responsible for decisions regarding the future of the organisation. Therefore, King proposes a conceptualisation of ICT strategic planning in which the organisation's 'strategy set' is aligned with the ICT 'strategy set'. The conceptualisation demonstrates unilateral alignment, where the missions, objectives, strategy and other organisational attributes are incorporated with the ICT's system objectives, system constraints and system design strategies (King, 1978). This conceptualisation reflects the support role and a one-way influence.

The support role of ICT has received criticism as user needs (e.g., managers) are not considered in this approach – and thus leads to a deficiency information used for decision making (Ackoff, 1967). Numerous authors have suggested a reciprocal approach between business and ICT (Jackson, 1989; Lederer & Mendelow, 1987, 1989). It has been noted that the one-way approach is not sufficient, since formal plans must be addressed in an integrated manner to ensure objectives are achieved and user needs addressed (Lederer & Medelow, 1987, 1989). Similarly, Jackson (1989: 229) assert that simply developing ICT plans that incorporate aspects of the corporate plan is not practical, since this process is like "shooting at a moving target, in that a dynamic organisation, in responding to a changing environment, must continually adjust its own plans". Therefore, Jackson proposes the use of ICT-SCs to ensure that all organisational needs are assessed in an integrated manner achieve implementation success. The aforementioned studies are theoretical. Zviran (1990) was the first to offer empirical evidence and found that the one-way ICT-business plan alignment based on King's conceptualisation did indeed increase organisation performance via the ICTICT planning process.

Lederer & Kearns (2000) were first to conceptualise planning alignment as reciprocal by measuring two-way alignment. The findings indicated – as also noted by Zviran (1990) – that support alignment improves organisational performance. While both CIOs and CxOs agreed that linking ICT objectives to the business plan creates a competitive advantage, only ICT executives perceived linking business objectives to the ICT plan as a strategic source of competitive advantage (Lederer & Kearns, 2000). Therefore, this study resonates with the argument regarding perception of CEOs and other executives regarding the strategic value of ICT. Drawing on the social dimension, it can be argued that CIOs did not successfully communicate or educate other executives on the potential advantages through fostering shared domain knowledge and dialogue.

Therefore, scholars started to question: how do we formulate and implement ICT plans that contain objectives from the organisation? It was found that the main purpose of engaging in SISP was to align ICT with business needs (Earl, 1993). This has shifted the attention to SISP, defined as "the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals" (Lederer & Salmela, 1996: 237). Lederer & Salmela (1996) were first to propose a model of SISP citing its absence from the ICT field while simultaneously

being important for the organisation. Others have conceptualised the achievement of alignment as SISP success (Segars & Grover, 1998). Various methods can be identified with regard to how organisations engage in SISP (Earl, 1993; Doherty et al., 1999). Doherty et al. (1999) developed a statistical model of methods proposed by Earl (1993) and concluded that most approaches achieve alignment, although to differing degrees. Regardless of the approach, Newkirk et al. (2003) found that firms often spend too much time planning while not focusing enough effort on implementation. This finding explains why organisations are unsatisfied with their SISP efforts. In addition, since SISP success has been used as a measure for alignment – some practitioners may believe their strategies to be unaligned.

While scholars have addressed the effectiveness of various SISP approaches, Grover & Segars (2005) advance the agenda by examining how SISP is accomplished by viewing planning as a learning system. Based on the literature, a three-staged model of SISP was presented: 1) preliminary (policies/procedures for planning emerge with participants having little experience); 2) evolving (procedures are formally developed, some ICT planning experience and process being refined); and 3) mature (firm has long history of SISP and executives have ICT planning experience and formal policies and procedural mechanisms are in place). Grover & Segars (2005) found that all firms go through the three planning stages: preliminary, evolving and mature; however, the data suggests that SISP is unique and context-specific to each organisation since they have different processes, outcomes and context in each stage. Pertaining to the framework, it can be noted that the SISP process (Organisation Context: Management System) is context-dependent and is thus influenced by outer context and outcome. For example, Grover & Segars (2005) note that SISP is an adaptive system as organisations learn based on past experiences (outcomes) as well as by assessing the environment (outer context). In contradiction, Newkirk & Lederer's (2006) study showed that environmental uncertainty and turbulence did not influence the SISP process.

A more recent study incorporates the notion of business and ICT change as a driver for SISP (Newkirk et al., 2008). While they hypothesise that rapid business and ICT change predicts shorter SISP planning horizons, their findings suggest that it predicts longer planning horizons (Newkirk et al., 2008). This finding contradicts Newkirk & Lederer's (2006: 481) conclusion that "more extensive planning is thus not uniformly successful in either environment". Finally, the authors conclude that SISP predicts intellectual alignment for strategic awareness (planning the ICT planning process) and strategy conception (conceiving strategy alternatives by identifying strategic objectives) phases of the SISP process, but not for situation analysis, strategy formulation and strategy implementation (Newkirk et al., 2008). Since situation analysis (analysing the environment) is not linked to the successful SISP and resultant outcome - intellectual alignment, it can be suggested that environmental context has little to no effect on the planning mechanisms deployed by the management system. This indicates a dominant

deliberate approach to strategising where control mechanisms ensure little to no emergent influence (Mintzberg & Waters, 1985).

2.3.2.2 Contingency & Intellectual Alignment

The aim of this section is to review contextual factors that influence intellectual alignment. At a general level, these studies adopt a contingency-based approach by examining contextual factors, their relationship with alignment constructs and resultant performance metrics. The findings presented here can inform the outer and inner context, as well as the reciprocal linkage between outer context and content. The following studies address contextual variables pertaining to the environment (e.g., uncertainty, turbulence, and type of industry) and the organisation (e.g. size, strategic orientation and type of organisation).

2.3.2.2.1 Industry Characteristics

Numerous scholars have investigated the influence of industry characteristics on intellectual alignment and concluded that the type of industry plays a role in determining the successful exploitation of ICT. Tan (1995) investigated ICT responsiveness and found that ICT is more responsive in aligning to the organisation strategy in industries where organisations place a higher priority on innovation in their product/market strategies as opposed to industries that operate in a stable product/market area. Burn & Szeto (2000) found that industries that were highly ICT-dependent (e.g. Banking & Container Terminal Industry) were more likely to be successful in achieving intellectual alignment due to its necessity. Therefore, an assumption can be made that business and ICT managers in ICT-oriented industries are more visionary and thus promote the need to exploit ICT successfully. Peak et al. (2005) examined intellectual alignment in the utilities industry and found that deregulation increases competition within the sector. As such, they linked deregulation as a “powerful motivator for transforming ICT into a strategic role”, where firms emphasise the need for and importance of aligning their business objectives with ICT to be in a better competitive position (Peak et al., 2005: 636). Therefore, governmental pressures from the external context can influence the management system (by redefining the role of ICT) which influences the decisions and actions taken regarding the alignment of business and ICT strategies.

Weiss et al. (2006) present three types of intellectual alignment profiles based on type of industry: 1) ICT as a technical resource (industries: farming, mining, health care and education); 2) ICT as a business enabler (industries: retailing, manufacturing, services and government); and 3) ICT as a strategic weapon (industries: finance, e-business, automotive, and utilities). The use of ICT as a strategic weapon in finance and utilities organisations have been well documented in the literature – where authors note that these industries are highly ICT dependent (Johnston & Yetton, 1996; Rathnam & Johnson, 2004; Peak et al., 2011; Reynolds & Yetton, 2015; Schlosser et al., 2015).

2.3.2.2.2 Private-Public Context

While studies have typically examined contingency factors in the private sector setting, others have used public (hospitals and universities) and for-profit organisations as control variables to see whether previous findings can be generalised to differing types of organisations. Chan et al. (2006) investigated organisation size and environmental uncertainty while controlling for industry by examining academic institutions and commercial businesses. While organisational size positively affects intellectual alignment in businesses, it does not in academic institutions. This finding is attributed to institutional theory since academic organisations typically function similarly regardless of size (Chan et al., 2006). Secondly, the study found that uncertainty in the environment significantly influences alignment in universities but not in business firms (Chan et al., 2006).

Silva et al. (2007: 254) investigated intellectual alignment in the private and public sector and found that both public and private-sector professional organisations face difficulty in achieving alignment – but note that public organisations have greater difficulties that “stem primarily from their bureaucratic procedures, their centralised decision-making arrangements and the challenges presented by learning and assimilating the alignment models”. In a parallel project, Silva & Hirschheim (2007: 328) suggest that “while market forces determine the goals in private organisations, those in the public sector are determined by factors such as political timing i.e., election, regulations, and a mandate for delivery”. Using the notion of deep structure, Silva & Hirschheim (2007) found that public sector organisations in developing countries have major difficulties regarding ICT strategy implementation due to their management systems. The difficulties stem from the political environment and institutional forces. They note that “SIS planning should consider the extant political time, since lengthy bureaucratic procedures and elections are crucial factors that constraint strategic plans and the governance of those organisations” whereas institutional forces derived from deep structures such as values and beliefs led to resistance to change.

2.3.2.2.3 Environmental Uncertainty

Environmental uncertainty (also termed turbulence) refers to the rate of environmental change and instability. Research have hypothesised that environmental uncertainty is linked with rapid changes in products, suppliers, and customers and thus makes business-ICT planning difficult (Vitale et al., 1986). The findings suggest that firms operating in highly turbulent environments while using a topic-down planning approach are “susceptible to wasted efforts, misdirected investments, and low morale” (Vitale et al., 1986: 271). The finding shares support with SISP literature, where authors have noted that environmental uncertainty doesn’t influence the SISP process (e.g., Newkirk et al., 2008). Therefore, authors have suggested are more adaptive approach to SISP planning to ensure intellectual alignment in unstable environments (Grover & Segars, 2005) while in general management literature

authors state that planned approach occurs when management is not able to create a continuous adaptive organisation (Weick & Quinn, 1999).

Others have found alternative explanations and viewpoints. Some have argued that firms in highly turbulent environments require greater information processing capabilities and thus are more likely to exploit ICT to ensure competitiveness (Carrico & Johnston, 1988; Reich & Benbasat, 1990). While Sabherwal & Kirs (1994) confirm this finding, they also note that executives of organisations with low ICT success may in fact be less aware of trends occurring in the environment and may therefore not be able to perceive the environment as uncertain or turbulent. Additionally, Choe (2003) developed a research design that investigates intellectual alignment and turbulence and found that: 1) turbulence has an indirect influence on strategic exploitation of ICT through intellectual alignment facilitators – which suggests that social alignment needs to be in place before a firm can strategy utilise ICT to cope with uncertain environments; and 2) organisations with a high degree of strategic ICT applications and well-positioned enablers (social alignment) perform better in uncertain environments than organisations in certain, predictable and stable environments (Choe, 2003).

2.3.2.2.4 Organisation Size

Authors have proposed a relationship between organisation size and ICT management sophistication (maturity), where other studies have provided empirical support for ICT maturity being a great predictor for intellectual alignment in organisations. Others have argued that smaller firms may also have greater alignment due to greater communication frequencies and interactions. Raymond et al. (1995) found that larger organisations that perceived their environment as more turbulent had higher levels of ICT maturity, and thus have greater alignment between business and ICT to respond to the complexity of the environment. Chan et al. (2006) found that larger business firms had greater levels of alignment, whereas academic institutions' alignment was not influenced by size. Gutierrez et al. (2009) conducted a comparative study of factors that influence business-ICT alignment – where they compared SMEs with large organisations. Their data suggests that there are no differences between different sized institutions. Also, they found that SMEs and large corporations perceived strategic alignment in similar ways, but the way they implement the strategies differed.

2.3.2.2.5 Strategic Orientation

Studies in this domain have adopted Miles & Snow's typology on strategic profiles: analysers, defenders, prospectors and reactors. The typology is used to conceptualise and define the type of business strategy that is aligned with the ICT strategy – as well as categorising sample firms into these profile as each orientation has specific and unique characteristics. Tan (1995: 176) found that "the degree to which an organisation's ICT is explicitly considered in shaping business strategy is linked to the type of business strategy pursued by the firm", which suggest that an orientation such as the

prospector – which emphasises innovation and pursues a strong competitive strategy – are more likely to perceive ICT as strategic and successfully exploit ICT.

Croteau & Bergeron's (2001) study linked strategic profiles with the use of ICT deployment and utilisation within organisations. Prospectors engage in strategic initiatives that effectively deploy ICT and improve performance; however, ICT is not sole driver of performance in this orientation. Prospectors also recognise the need for ICT department's participation in strategic meetings and therefore they value ICT. Analysers also make effective use of ICT where ICT acts as the primary driver for performance. Analysers heavily engage in acquisitions of ICT systems and applications for strategic positioning, specifically using ICT for technological scanning and forecasting. Defenders are linked to weaker performance and these firms do not deploy ICT – as the “defender type is counter-productive in terms of organisational performance as its restraints technology development” – since they aim to reduce cost and maximise efficiency/effectiveness of organisational processes (Croteau & Bergeron, 2001: 95). Finally, reactors are firms characterised by low profitability and their activities are characterised as ‘reacting’ to environmental changes and thus do not effectively deploy ICT for scanning and forecasting. These firms have the lowest performance and no degree of business-ICT alignment (Croteau & Bergeron, 2001).

Sabherwal & Chan's (2001) research indicated that defenders view ICT strategy as a tool for efficiency and thus rely heavily on operational support systems, interorganisational systems as well as decision support systems. Prospectors use ICT for flexibility and emphasise the need for market information systems and decision support systems. Analysers deploy ICT for comprehensiveness due to their strategic profile and thus invest in and utilise all the aforementioned systems. These systems are used to achieve intellectual alignment. Sabherwal & Chan (2001) found that business strategy moderates' alignment and organisational performance. Therefore, prospectors and analysers show a significant relationship between intellectual alignment and performance whereas this relationship was not observed for defenders – as their business strategy emphasises the need for stability, operational efficiency and economies of scale.

2.3.2.3 Strategic Management & Intellectual Alignment

2.3.2.3.1 Content-Based Approach to Aligning

Resource-based View (RBV) and Dynamic Capabilities (DC) are strategy content theories that have been employed to investigate intellectual alignment. The latter differs from the former in that it addresses environmental uncertainty and the utilisation of resources to be competitive in the dynamic environment. Both of these theories focus on the business-level of content strategy that is concerned with strategic positioning and gaining a competitive edge.

From a resource-based view, Kearns & Lederer (2003: 3) argue that intellectual alignment can offer a competitive advantage since it represents a “complex organisational process that is both heterogeneous and immobile”. The argument is derived from the notion that unique management processes cannot be imitable (e.g., Barney, 1991). The authors conceptualise alignment as a resource that is based upon the social (CIO-CEO participation in Business-ICT planning) and intellectual (planning) alignment. The authors suggest that the social-intellectual relationship is attributed to communication through participation, and that knowledge is therefore a valuable resource that can be exploited in achieving alignment. The study illustrates that RBV predicts that organisations that are information-intensive leverage resources (knowledge) successfully in the planning process and thus achieve a superior degree of alignment in comparison to lower information-intensive firms (Kearns & Lederer, 2003).

Peppard & Ward (2004) address sustainable competitive advantage using the RBV, since prior literature has argued that firms have access to the same technological tools and information systems – thus developing a capability-based approach to resource interpretation. The authors seek to distance themselves from earlier conceptualisation of resources, by arguing that resources do not create value but rather that value is generated by a firm’s competency to mobilise and subsequently utilise those resources. Evidence is presented that suggests that the development of the ICT capability (set of ICT competences) is essential in this new era of SIS – where firms are now focused on the development of these competencies based on prior knowledge on successful implementation and ICT investment (Peppard & Ward, 2004).

Post-RBV application in the SIS field has led to a focus on dynamic capabilities. These studies have addressed how ICT capabilities are utilised in response to environmental uncertainty and turbulence (Chen et al., 2008; Fink & Neuman, 2009; Baker et al., 2011; Yeow et al., 2018). Chen et al. (2008) employ a DC-based approach to the alignment process and found that firms employed capabilities (resource mobilisation and utilisation) in narrowing the difference between deliberate and emergent aligning actions. The result suggests that firms employed routines to react to rapid business growth, and that ICT was utilised to adapt to these responses (Chen et al., 2008). Another finding is that existing ICT resources (via prior decisions regarding ICT investment) cause path dependence effects - the reason being that existing ICT resources have a powerful influence on the achievement of intellectual alignment. Therefore, firms must be able to reconfigure the resources to ensure that they sustain alignment in the longer term. Overall, Chen et al. (2008) suggest that dynamic capabilities and their associated organisational routines are a useful approach in reducing the detrimental effect of path dependency. Yeow & Colleague’s (2018) research also uncovered similarly findings, where DC-based aligning actions reconfigured resources in an iterative manner to: 1) refine the business and ICT strategies to respond to internal and external changes; and 2) to reduce tensions between the emergent strategy and the resources.

2.3.2.3.2 Process-Based Approach to Aligning

This section represents all existing literature on intellectual alignment (and some structural alignment) research that adopts a strategy process perspective. While the aim of this research is to investigate intellectual alignment, articles on strategy-structure alignment (e.g. Burn, 1993, 1996; Sabherwal et al., 2001) will still be examined as they can provide some insights into general alignment dynamism. Only two recent articles address business-ICT strategy alignment using a process-based approach i.e. Street et al., 2018 and Yeow et al., 2018. Research in this domain draws on strategy process literature and specifically, strategy formation and change to acknowledge the dynamisms and systemic tensions.

Burn (1993) modelled the alignment of ICT strategy and organisation structure over time and identified four stages of growth, where transitions occur via 'quantum change' that reshapes both the organisational configuration and the ICT strategy. It was noted that firms that engage in incremental adjustments were unable obtain synergy between ICT strategy and structure since structure cannot be continuously configured to match the ICT strategy. The research indicated that change between both components occurred over long periods of time (e.g. 5 -7 years) and that external influences also initiate change (Burn, 1993). Burn (1996) further developed the initial study by developing a lead-lag model where a firm's effort in sustaining alignment was referred to as a 'juggling act'. The cyclical model presented illustrates that organisations alternate between ICT leading change and ICT catching up on change – and that organisations are damaged by maintain either a lag or lead state over long periods (Burn, 1996). Therefore, change is required to maintain constant balance between pull-push pressures and therefore maintain and sustain alignment (Burn, 1996).

Sabherwal et al. (2001) adopted a punctuated equilibrium model of change to interpret ICT strategy and organisation structure alignment. Similar to Burn (1993), the authors also found that the alignment process occurs over long periods of stability that are punctuated by quick and short periods of revolutionary change. In addition, Burn's (1993) assertion of needing 'quantum change' for alignment success has been acknowledged by Sabherwal et al. (2001), who note that misalignment occurs during stable periods and that only deep and radical change are beneficial to the firm from a long-term perspective. However, it was also noted that small and evolutionary changes in alignment are necessary to prevent misalignment shortly after radical change has occurred. The authors attribute the need for deep change to the notion of complacency and inertia, where long-term evolutionary patterns over time (e.g. stability, aligned state) becomes damaging as the organisation fails to adapt to conditions in the external environment (Sabherwal et al., 2001). The authors note that "a high level of alignment may lead to inertia, necessitating revolutions, involving complete transformation of the strategic ICT profile" (Sabherwal et al., 2001: 182) – and specifically, noted cultural and structural inertia as the key threats to long-term stability.

Street et al. (2018) examined the influence of entrepreneurial action on intellectual alignment in new ventures and thus are first to trace the aligning process at the origin of the firm. The study included two case firms operating in differing contexts: a technology start-up and a health care start-up. It was found that alignment decisions taken are related to the founders' perception regarding environmental uncertainty as well as their experiences and background. While the tech firm adopted a 'salvage-innovate-reuse' ICT strategy which led to an emergent, unplanned and continuously evolving alignment process, the health firm opted for a sophisticated ICT system (due to regulation in the health sector) and thus engaged in an intended, deliberate alignment approach with occasional adaptive responses (Street et al., 2018). Overall, the decisions regarding the aligning process were also found to be related to entrepreneurial approaches: causation, effectuation and bricolage.

- The *causation* approach is characterised by traditional rational planning where decisions follow a predictable path and outcomes are anticipated. Here, ventures are typically in mature markets with low levels of uncertainty and therefore can engage in deliberate planning to develop ICT capabilities through SISF. Regarding the alignment process, these firms engage in activities that reconfigure the business and ICT infrastructure by fostering business-ICT partnerships. ICT strategies based on the causation approach are developed and enforced in a top-down manner where business strategy leads the ICT strategy (Street et al., 2018).
- The *effectuation* approach views the future as unpredictable and thus favours a strategy that reduces and mitigates risk by deploying iterative learning to limit losses. Due to the environmental context, the ventures opt for unplanned, evolving and emergent aligning activities to understand and identify opportunities in how ICT/IS can support business activities – where decisions and actions occur on a case-by-case basis. Intellectual alignment occurs in a co-evolutionary or bottom-up manner where ICT strategy potential leads the business strategy, as bottom-up strategising leads to more dominant ICT strategy since the organisation is more responsive to both internal and external user's needs and can therefore successfully operate in dynamic and turbulent environments (Street et al., 2018).
- *Bricolage* represents a hybrid causation-effectuation approach which produces a more 'make-do' approach to planning. Entrepreneurs in this category operate in highly uncertain and nascent industries with severe resource constraints at the start of the venture. Due to large constraints on resources, the venture only develops ICT capabilities in response to 'pressing needs and thus employees and the founder engage in ad-hoc planning – resulting in emergent and bottom-up approach through reciprocal interaction and feedback (Street et al., 2018).

Yeow et al. (2018) adopt a DC-based lens to investigate intellectual alignment. Although this study was mentioned in the content-based section – since it was traditionally a content approach – dynamic capabilities has been utilised in the strategy process stream as well (Burgelman et al., 2018). The

authors develop an aligning action model that is composed of three phases – exploratory, building and extending. By adopting a DC approach to aligning, it was identified that the alignment process is not independent from such capabilities, “but that aligning is enacted through the sensing, seizing and transforming capacities and their attendant aligning actions” (Yeow et al., 2018: 43). Their study showed and confirmed previous process-based alignment studies: that focusing on the aligning process is more helpful and realistic as opposed to investigating the state of alignment. Consistent with other studies in this domain, Yeow et al. (2018) found that their case firm was never in equilibrium, but rather in constant flux derived from multi-level tensions.

Additionally, the study found the following: 1) unintended aligning actions created misalignments derived from tensions between an emergent strategic direction and existing resources. The authors argue that: “while aligning actions in general seek to reduce the misalignment between strategy and resource, in the short-term, as the organisation is going through the process, these same actions can increase misalignment” (Yeow et al., 2018: 56); 2) legacy ICT systems posed challenges for the new ICT strategy due to cognitive inertia where subsidiaries were hesitant to adopt and not open to new ideas and systems that deal with emergent and unplanned changes. The authors found that these legacy systems lead to a path dependent process where over time, psychological inertia was developed due to long-term use of the legacy system (Yeow et al., 2018); and 3) the case firm utilised emergent aligning actions to address misalignments between strategy and resources in an ad-hoc manner due to ‘strong resistance’ occurring from a subsidiary regarding ICT strategy implementation (Yeow et al., 2018).

Overall, this subsection on the processual interpretation of intellectual and structural alignment has uncovered foundational insights. Although only two studies addressed intellectual alignment, the outlined implications are essential for the construction of a framework used to guide the research agenda. First, alignment is not a steady-state or remains in equilibrium – rather the ICT strategy leads or lags when confronted with tension derived from internal or external contexts. This finding acknowledges the findings in the earlier section on systems theory, where open systems do not maintain equilibrium but are instead in quasi-equilibrium. Secondly, the studies confirm that alignment is a continuous process of adaptation and change. This finding also relates to systems theory because organisational components are linked by feedback (adaption) while open systems also face exogenous shocks which requires systems to respond by reconfiguring. Finally, studies indicated that alignment could become path dependent and that the process is prone to pressure for inertial forces that resist change. Therefore, the research framework will integrate these implications and the project will advance these findings.

2.3.3 Criticisms against Strategic Alignment

This section is concerned with presenting criticisms against the concept of strategic alignment identified by Chan & Reich (2007) and offers a counterargument. Furthermore, the outcome of this critique is used to guide the research inquiry while also outlining research gaps. The underlying criticisms suggest that scholars have so far been unable to effectively capture the dynamic nature of strategic alignment by ignoring the messy and complex nature of organisational reality, while others have noted that alignment is undesirable.

2.3.3.1 Criticism 1: Mechanistic Research

Scholars have argued that SA research is mechanistic and fails to capture real life. For example, authors have noted in their SA commentary that the world is messy, and that ‘sophisticated’ models developed on alignment “remain a de-worlded image of the organisation”. Others have reported that SA does not remain constant (i.e., static) due to ‘muddling through’ and tinkering’ (Vitale et al., 1986) or that the use of technology is characterised by improvisations and ‘bricolage’ (Orlikowski, 1996; Ciborra, 1998). Evidence from processual research tends to illustrate that alignment is in constant flux and is characterised by a push-pull relationship (Burn, 1993; 1996; Yeow et al., 2018).

A second reason for the mechanistic nature of SA research is attributed to the dominant employment of contingency theory which is plagued by reductionism whereby scholars attempt to ‘slice their research scope’ to offer simplified interpretations of complex phenomena (Ginsberg & Venkatraman, 1985). Within the contingency tradition, the presented models all have the underlying assumption that context (internal or external) and structure must fit to achieve and maintain performance (Drazin & Van de Ven, 1985). Following this, contemporary fit-based research has sought to understand and measure the alignment between various constructs to determine the influence on performance. Studies employing this approach are reminiscent of the linkage-exploring domain of strategy research, that attempt to understand the link between contingencies, firm performance and alignment (Hutzschenreuter & Kleindienst, 2006) – thus providing insights into the context, content and outcome; however, the process aspect of strategising has been neglected and thus criticisms have arisen.

Contingency-based studies have been criticised in the management field in general (e.g. Schoonhoven, 1981; Drazin & Van de Ven, 1985; Fry & Smith, 1987) as well as in information systems research and strategic alignment literature specifically (Weill & Olson, 1989; Brown & Magill, 1994; Sambamurthy & Zmud, 1999). A major criticism relates to the lack of clarity in theoretical assumptions that are used to guide contingency research. Schoonhoven (1981: 351) notes that the assumptions such as – ‘this structure fits this specific environment’ – are too ‘ambiguous’ and require more precision, suggesting that “it is quite possible that environment and technology are related to distinctly different structural variables rather than to the same unspecified set”. In that manner, contingency theorists also tend to

misinterpret alignment to be contingency effects rather than merely congruent relationships – thus attempting to ‘mix apples and oranges’ to understand and predict organisation phenomena (Drazin & Van de Ven, 1985; Fry & Smith, 1987).

Finally, SA research’s dominant use of contingency theory and cross-sectional variance-based studies has also been associated with vexed conceptualisations, where differing analytical methods have been utilised to measure ‘fit’ between constructs. A review on quantitative methods that seeks to measure ‘fit’ identified six approaches – each with distinct theoretical underpinnings and statistical approaches. In the literature review, it has been found that the type of measurement influences the degree of alignment and resultant performance – which has resulted in contradictory findings. For example, Bergeron et al. (2001: 139) tested each of the six types of analytical approaches to measure alignment and found that differing measures lead to different results regarding the achievement of abnormal returns – and concluded that the inability of research to “specify the exact perspective of fit... often lead researchers to obtain contradictory, mixed, or inconsistent results”. Authors utilising the same construct for alignment and performance, have found a significant relationship using the moderation approach (e.g. Parthsarthathy & Sethi, 1993; Chan et al., 1997; Li & Ye, 1999) while using the matching perspective of fit found a nonsignificant relationship (e.g. Oh & Pinsonneault, 2007). As a recommendation, Bergeron et al. (2001: 138) propose that researchers should adopt “a dynamic rather than a static perspective, with longitudinal rather than cross-sectional operationalisation of fit”.

To overcome the pure dominant mechanistic interpretations of alignment as a result of methods employed, longitudinal processual (case) studies have been promoted. Venkatraman acknowledges the limitations of the various alignment approaches during longitudinal operationalisations of fit and states that alignment “is a dynamic and never-ending task, whereby the organisation is continually “shooting at a moving target of coalignment (Thompson, 1967: 234) [and] it is unclear whether the six perspectives identified here are appropriate for testing them” (Venkatraman, 1989: 441). Weill & Olson (1989: 59) also present a critique of contingency theory, concluding that “research in MIS has been hampered by the use of a naïve meta-theory, conflicting empirical results with low explained variance, ill-defined concepts of performance and fit, and a narrow perspective of researchers”. The authors recommend employing different sets of methodological tools such as qualitative case studies and longitudinal studies to overcome the narrow focus and naïve meta-theory (Weill & Olson, 1989). Indeed, the majority of SA and ICT research in general has adopted a positivist epistemological perspective (Orlikowski & Baroudi, 1991; Chen & Hirschheim, 2004) in contrast to interpretivism and the more recent critical realist approach (Wynn & Williams, 2012; Mingers et al., 2013). The positivist approach has led to numerous assumptions being adopted from the natural sciences where scholars “are in effect attempting to freeze the social world into structured immobility and to reduce the role of human beings to elements subject to the influence of a more or less deterministic set of forces”

(Morgan & Smircich, 1980: 498). Thus, it may be beneficial to adopt a new lens with differing ontological and epistemological assumptions.

To conclude, the theoretical underpinnings need to be altered to accommodate for a dynamic interpretation. Content as strategy has dominated the SIS domain and therefore SA research has been purely cross-sectional as well as contingency- and variance-based. The aim therefore is to adopt a longitudinal approach to inquiry to facilitate a processual understanding of SA.

As such, the case can be made that prior research relied too heavily on the use of cross-sectional variance-based methods to understand alignment – and that this method is unable to incorporate the push-pull dynamic as statistical approaches typically neglect time due to their cross-sectional nature. For example, studies presented in the literature review are commonly survey-based and therefore only capture a ‘snapshot’ of current alignment, rather than illustrate how alignment is formed over time. This differentiation is further emphasised by the dominant theoretical perspective of content strategy whereby business strategies are analysed as an outcome as opposed to how alignment changes over time.

2.3.3.2 Criticism 2: Aligning with Unknown Strategies

The second criticism of SA research is based on the premise that alignment of the ICT strategy cannot occur if the business strategy is unknown or in progress (Chan & Reich, 2007). The criticism is also reminiscent of an older debate within organisation theory that is representative of a dichotomic divergence of assumptions regarding human nature: voluntarism or determinism (Astley & Van de Ven, 1983; Hrebiniak & Joyce, 1985). These two schools directly relate to how one characterises strategy and change, whether it is forced upon the organisation (determinism) or whether the deployed strategy and change initiatives were derived from free-will (voluntarism). The criticism arose out of scholars investigating business-ICT strategy alignment using the voluntarist perspective (e.g., planned approach) where they linked the content of the business plan with the content of ICT plan to determine whether alignment between both strategies exist. Thus, scholars utilising the content-based approach to strategy suggest that if there is no business strategy, or if it is in progress – there can be no alignment.

However, if there are no plans, actors still tend to take actions towards a goal – characterised by a more dominant emergent approach (Mintzberg, 2007). For example, Street et al. (2018) investigated strategic alignment in the context of new ventures – whether alignment still existed although choices regarding the business and ICT strategy were ‘ad-hoc’ and conducted on a ‘case-by-case basis’ in an informal manner. However, most research typically focused on the intended strategy (content matching) while not considering the final realised strategy. The key is to distinguish between alignment in terms of strategic plans (what firms intend to do) and alignment in terms of realised strategy – what

firms actually do (Coltman et al., 2015). As noted in literature, “not all intended strategies are realised, and not all realised strategies were intended. Realised strategy is often emergent in nature” (Moncrieff, 1999: 273). This is supported by Mintzberg & Waters (1985) who suggest that strategies are formed on the deliberate-emergent continuum – thus strategies are neither purely deliberate nor purely emergent. To understand the complex organisation process of strategy, one must study the interplay between intended and realised strategies (Mintzberg, 1978), which is also suggested by ICT Scholars (Chan et al., 1998). This will require “examining the existing documentation (ICT strategy statements, documents, minutes of planning meetings, etc.), coupled with asking questions of key informants regarding the organization’s formal ICT directions and strategic intent” (Chan et al., 1998: 274). Finally, they state that “very little research has examined realised ICT strategy. Also, very little research has addressed the measurement of either intended or realised ICT strategy” (Chan et al., 1998: 274).

The presentation of a counterargument suggests that the criticism is unfounded, as alignment can occur without formal writing on plans. In order to develop a dynamic model of strategic alignment, one has to consider the interplay between intended and realised strategies and to also examine how emergent actions, decisions and events influence the formation. This conceptualisation of strategy allows for a dynamic interpretation and offers an advancement in the quest for understanding strategic alignment. Real organisation strategies “rarely conforms to the ideal of rational decision-making and subsequent planned change” and thus ought to be viewed as a continuous process of change (Mintzberg et al., 1990; Chia 1994; Langley et al, 1995; Laroche, 1995; Hendrey 2000; cited in Sminia, 2009: 98). To exemplify this statement regarding the traditional treatment of planned change, top management may not be aware of strategic change occurring (Burgelman, 1996) due to actions and decisions taken outside the scope of the strategy as well as formal management systems (Burgelman, 1983). Therefore, researchers investigating alignment by interviewing or surveying top management teams will fail to capture emergent influences at the lower levels of the organisation. Therefore, a conceptualisation of strategy as a pattern or stream of decisions acknowledges “the notion that organisations can pursue ‘strategies’ without intending them” (Mintzberg & McHugh, 1985: 162). As such, these patterns of decisions can be characterised as autonomous or induced. Burgelman (1991, 2002: 347) conceptualises induced (deliberate) strategy as one that “exploits initiatives that are within the scope of a company’s current strategy” and autonomous (emergent) strategy as one that “exploits initiatives that emerge through exploration outside of the scope of the current strategy”. To conclude, the criticism is derived from previous studies’ focus on the content of strategy – thereby neglecting the processual aspect of strategising. Therefore, this study will incorporate this conceptualisation as a way of developing a dynamic model of strategic alignment.

2.3.3.3 Criticism 3: Alignment, Inertia and Change

The third criticism proposes that alignment is not desirable as an end in itself since the business must always change – and is based on two components: alignment as an ‘end-state’ and that alignment creates inertia over time. Initially, SA was characterised as an outcome or end state – something to be achieved (e.g., Lederer & Salmela, 1996; Mentzas, 1997; Grover & Segars, 2005; Newkirk et al., 2008). However, scholars now acknowledge that alignment is ‘a moving target’ (Jarvenpeena & Ives, 1993; Sabherwal et al., 2001), a continuous balancing act (Burn, 1993, 1996) and is in constant flux (Street et al., 2018). Therefore, reconceptualising alignment as dynamic counters the argument that alignment is a state that is reached at the end of strategy. The second component, although correct in its assumption requires reassessment. It is a truism that organisations must always change since long-term alignment trajectory results in a ‘lock-in’ which produces inertial forces (Sydow et al., 2009). However, this criticism doesn’t take into account re-alignment. It would be counterproductive to disregard alignment purely on the fact that it leads to inertia, as any ICT routine, activity or strategy carried out over a long period produces inertia – whether structural, political or psychological (see Besson & Rowe, 2012). Rather, the concept of re-alignment needs to be embedded within SA literature (as done with Sabherwal et al., 2001) to understand how firms have managed re-alignment efforts and to avoid undesired trajectories.

Inertia is a function of alignment (Hannan et al., 2002; Schwarz, 2012) – and should therefore be integrated into the research dynamic to offer a dynamic interpretation. Additionally, re-alignment (also termed as strategic change) should be investigated as it examines “the activities a firm undertakes to alter its path dependence” (Volberda et al., 2001: 160). While one study has examined inertia with regards to strategic alignment, the authors state that “a longitudinal design would be desirable to empirically reveal the causal dynamics between ICT alignment” (Liang et al., 2017: 877). To offer insights into the dynamics, a longitudinal processual study will prove useful as history and time play a vital role in its analysis. To conclude, while long-term alignment is seen as undesirable, investigations into how organisations engage in re-alignment initiatives through strategy and change can provide insights into the nature of strategic alignment. As such, strategic change literature will be investigated to discuss types of change as well as path dependency and inertia – and integrate them into the dynamic model of alignment. Inertia offers an explanation for why misalignment occurs.

2.4 Strategy as a Process

As indicated through the examination of strategy literature in the prior sections, strategic management is essential in understanding strategic alignment. However, most literature focuses on a content-based perspective. The aim here is to cement the process perspective of strategising to inform the aligning process and to incorporate strategic management conceptualisations to advance our understanding of the strategic alignment construct. It should be noted that the view adopted here is that strategy and

change are intrinsically linked and therefore synonymous from an alignment definition. To do so, the following section will delve into strategy formation (not *formulation*) and the process of change and inertia.

2.4.1 Deliberate and Emergent Strategies

Prior strategic alignment literature generally submits to the notion that strategies are deliberate. As Mintzberg (1994: 11) notes, “all viable strategies have emergent and deliberate qualities” since all strategies require both a planned approach but at the same time require flexibility for adjustments. Additionally, “not all intended strategies are realised, and not all realised strategies were intended. “Realised strategy is often emergent in nature” (Moncrieff, 1999: 273). Therefore, acknowledging the emergent nature of strategy is essential for understanding how strategic alignment is realised (Chan et al., 1992). Two studies have supported this notion (Street et al., 2018; Yeow et al., 2018). Mintzberg & Waters (1985) propose that strategy lies on a continuum between purely deliberate and purely emergent strategies; however, they argue that no strategy can be pure – as it neglects the forces that shape strategising such as group behaviour and organisation context.

The consideration of deliberate and emergent strategies is important for the inquiry of strategic alignment as it will provide a framework by which attributes and mechanisms can be identified that shape and guide the strategy development process. For example, authors have suggested that the degree of emergent-deliberate actions within the strategy formation process are impacted by context (e.g., Pettigrew, 1997; Slevin & Govin, 1997). The authors note that ‘organic structural attributes’ should foster emergent formation while ‘mechanistic structural attributes’ should be linked to deliberate actions and decisions. The organic structures offer organisations the ability to modify and adjust the strategy due to flexibility, decision-making speed and communicativeness; while the mechanistic structure is characterised by a centralised bureaucratic approach that is designed to reduce uncertainty which allows for a more deliberate planned approach (Slevin & Govin, 1997). Similarly, Mintzberg & Waters (1985: 271) note that “the more deliberate strategies tend to emphasise central direction and hierarchy, the more emergent ones open the way for collective action and convergent behaviour”. In conjunction with Slevin & Govin (1997), it can be said that the organisation context (purpose, management systems and informal organisation) determines the degree to which strategies are more deliberate or emergent. Finally, from a methodological standpoint for studies on strategic change, Pettigrew (1997) suggests that context and process are interlinked whereby context (i.e., management system, environment, informal networks) shape the process as context changes over time and there are natural phases of adaptation to these contexts.

2.4.2 Process of Change & Inertial Forces

It has been argued that strategy formation should be viewed as a process of change (Mintzberg et al., 1990; Chia, 1994; Laroche, 1995; Langley et al., 1995; Hendry, 2000; in Sminia, 2009). Notions have been put forward that suggest strategy and change are intrinsically linked (e.g., Pettigrew, 1992; Liedtka & Rosenblum, 1996). As a result, scholars have shifted the terminology used from 'strategic choice' to 'strategic change' (Hutzenreuter & Kleindienst, 2006) as well as 'strategic renewal' (Huff et al., 1992). Strategic change and renewal are synonymous, characterised by organisations engaging in re-alignment initiatives to "frequently improve its alignment with internal and external demands" (Huff et al., 1992: 55). Strategic change has been defined as "the process that allows organisations to alter their path dependence by transforming their strategic intent and capabilities" (Schmitt et al., 2016: 1). A core notion underpinning this topic is that long-term aligning matters create a trajectory – which over time leads to a lock-in through self-reinforcing mechanisms that result in inertia (Sydow et al., 2009). The notion has also been used as an explanation for misalignment (e.g., Wei et al., 2005; Reynolds & Philips, 2015; Avila & Garces, 2017). In order to resolve this misalignment (attributed with decreases in performance), a renewal is required to re-align organisational components to achieve alignment again (Tichy, 1983; Volberda et al., 2001; Schmitt et al., 2016).

Tichy (1983: 138) notes that the "concept of alignment provides the guidelines for the development of a change strategy. Bad alignment necessitates change". Through the alignment lens, scholars can indicate instances of strategy and change. However, not all change is equal – since some organisations incrementally adjust re-align their actions while others engage in 'quantum-change' that reconfigures the entire organisations. Processual scholars investigating strategy have used characteristics of change to inform and guide the study (e.g., Whipp & Pettigrew, 1992). Change can be characterised by the rate of occurrence, by how it comes about, and by the scale (By, 2005). As with the strategy section, this section also adopts a processual interpretation of change. Scholars in this domain "adopt the view that change is a complex and dynamic process which should not be solidified or treated as a series of linear events" (Burnes, 2004: 990). Rather, the processual approach emphasises a contextualist approach to the study of change by understanding how "context is a product of action and vice versa" (Pettigrew, 1990: 296). Central to the processual study of change are two underlying beliefs: 1) "change is viewed as an ongoing emergent process with no finite end point"; and 2) "change emerges from the actions and decisions of people in organisations" (Dawson, 1994: 386). Therefore, these notions and change characteristics can inform a dynamic interpretation of strategic alignment by identifying contextual forces both initiate and inhibit change.

2.4.2.1 Inertial Forces & Re-alignment

Path dependency (PD) is both a function of alignment and change (Sydow et al., 2009; Sydow & Schreyögg, 2011; Schwarz, 2012). Additionally, path dependence is essential in the understanding and

development of process theory – since it acknowledges that ‘history matters’ and thus prior events or decisions are imprinted into future events and decisions (Sydow et al., 2009). Central to the concept of path dependence is the notion of self-reinforcing mechanisms – a tapering effect that entraps and locks processes into a narrower path over time (Sydow & Schreyögg, 2011). Once the scope has narrowed significantly via a critical juncture, a process enters a ‘lock-in’ which is a result of strong inertial forces that make it difficult to reverse path (Sandelands & Drazin, 1989; Collier & Collier, 1991). As noted by Koch (2011: 338), “strategic path dependence means that an organisation has to cope with a drastically reduced range of available options”. Therefore, it is of interest for researchers to examine how process become path dependent (and ultimately, locked-in) via self-reinforcing mechanisms. It has been suggested that both the internal and external environment can produce inertia and that overcoming inertia requires strategic change (Kelly & Amburgey, 1991); however, it has also been noted that inertia is not always the primary source of change initiatives (Greenwood & Hinings, 1996).

Overall, researchers are presenting the notion of inertia as an explanation as to why firms fail (Huff et al., 1992) and that inertia is an outcome of continuous organisation success (Miller, 1993). In linking inertia and change, it can be said that inertial forces are a precursor to change where strong inertia necessitates the need to engage in large-scale quantum-change to realign organisational components (Mintzberg & Westley, 1992; Burn, 1996; Weick & Quinn, 1999). However, it can also be said that the lack of organisational adaption through incrementalism is a precursor to inertia, since studies found that new ventures and organisations adopting cyclical models of change did not need to engage in radical change (e.g. Cohen & Levinthal, 1990; Burn, 1996; Street et al., 2018).

As the processual school is at the heart of this review – as outlined in the alignment, strategy and change sections – it is vital to emphasise that ‘history matters’. Path dependency is used as a lens to explain how a firm’s history influences the current strategic trajectory by tracing prior decisions and actions. Researchers in the ICT domain have consistently stated that ‘history matters’ – thus acknowledging that an organisation’s current actions and decisions depend on the decisions and actions of prior events (Bharadwaj, 2000; Besson & Rowe, 2012; Fichman, 2004; Henningsson & Henriksen, 2011; Kim et al, 2011, 2012; Lim et al, 2011; Lucas & Goh, 2009; Lyytinen & Rose, 2003; Nolan, 2000; Kuk & Janssen, 2013; Peppard, 2001; Sambamurthy et al, 2003; Zhu et al, 2006; cited in Wenzel et al., 2017: 361). Besson & Rowe (2012) stress the need for further investigation into ICT-related inertia and specifically how these firms engage in re-alignment initiatives to overcome the pressures – as it is understudied.

The study of path dependency has become of interest in recent times by organisation scholars, who have used terms such as inertia, imprinting, institutionalisation, commitment or trajectories (Sydow & Schreyögg, 2011). While these concepts have been explored to some extent as starting points or

process outcomes, the manner in which these processes produce path dependency has been ‘under-explored’ (Sydow & Schreyögg, 2011). To commence the starting point of developing a dynamic theory of organisational path dependence, Sydow & Colleagues (2009: 691) propose diving the process into three phases – each of which are “governed by different casual regimes and constituting different settings for organisational action and decision making”.

2.5 Aligning in Context: The Nature of PSOs

This section is concerned with the context of Public Service Organisations (PSO). Literature on strategy and information systems are primarily situated in the private sector context. It has been acknowledged that managers in the public and private sector “operate in different contexts that generate distinctive constraints on their behaviours and choices” (Ring & Perry, 1985: 276). Therefore, the aim is to offer insights for the context component of the framework to inform and guide the research agenda in a PSO case study.

2.5.1. Private-Public Sector Comparison

Numerous scholars have addressed private and public sector differences – and the dichotomy has been extensively researched (e.g., Lachman, 1985; Ring & Perry, 1985; Perry & Rainey, 1988; Rainey & Bozeman, 2000; Boyne, 2002; Van der Wal et al., 2008; Jurisch et al., 2013). While it has been argued that the private-public difference is so great that government should not adopt management practices, others have found an increasing convergence between public-private sector practices (Boyne, 2002). For example, Chandler (1991) notes convergence due to private-sector firms becoming more transparent and more accountable and thus executives must be as sensitive to public opinion, government policy or bad practices as the public manager. Additionally, effective public administration in the age of results-oriented management requires public agencies to develop a capacity for strategic management, and a central management process that integrates all major activities and functions and directs them toward advancing an organisation’s strategic agenda” (Poister & Streib, 1999: 308). Several studies have provided evidence of PSOs employing strategic management tools from the private sector to increase public sector performance (Joyce, 2004; Andrews et al., 2009; Poister et al., 2010; Hansen & Ferlie, 2016; Alford & Greve, 2017; Hoglund et al., 2018). Additionally, in an extensive research endeavour, Boyne (2002) compares public-private management and asks: what’s the difference? The author finds that the only differences are: “public organisations are more bureaucratic, and public managers are less materialistic and have weaker organisational commitment than their private sector counterparts” (Boyne, 2002: 97).

While for-profit enterprises are profit-maximising entities, PSO’s purpose are designed to generate public value. Therefore, a central difference is the organisation’s purpose, which influences the content of their strategy. Public agencies have their strategy content imposed on them and are therefore “highly regulated by the political sponsors that provide their funding (Boyne & Walker, 2004: 236). The

purpose influences the management systems to facilitate planning and implementation that fulfils that purpose. In the PSO context, the organisation is constrained by their mandate and thus may engage in a deliberate and planned approach where bureaucratic structures constrain control mechanisms to ensure a deliberate realisation.

2.5.2. Strategy in PSOs

In the public management research domain, strategic management has been “increasingly singled out as one of the primary means through which organisational performance can be enhanced” (Andrews et al., 2009: 2). A result-oriented approach has been emphasised for effective management of public agencies which has driven these organisations to adopt a strategic approach (Poister & Streib, 1999). During the last decade, numerous scholars have investigated how PSOs have adopted strategy concepts and tools – and have provided empirical evidence on how PSOs successfully deployed these strategic approaches (William & Lewis, 2008; Boyne & Walker, 2010; Hansen & Ferlie, 2016; Alford & Greve, 2017; Hoglund et al., 2018). The rise of (private sector) strategy in PSOs has been attributed to government reforms taking place globally (Hood, 1991). The reforms have led to a governing approach that has been termed New Public Management (NPM) – which is used as a ‘loose term’ to categorise a set of governance ideas and reforms – where PSOs incorporated neoliberal and management theories to restructure PSOs towards becoming more efficient (Bevir & Richardsis, 2009). The effects of NPM has significantly reduced the differences between public and private sector (Hansen & Ferlie, 2016).

Overall, the private-sector oriented approach of NPM have shown that strategic management is useful in implementing government-wide strategic initiatives and is important for achieving results in government entities (Andrews et al., 2012). Some scholars have argued that the NPM approach is fraught with issues, mainly its intraorganizational focus and its obsession with objectives and results (Rhodes, 1997; in Bovaird & Loeffler, 2009). As a result, New Public Governance emerged which acknowledges the need for a strategic management capacity as well as emphasising a network-oriented approach to interorganisational governance by inter-dependent agencies which all contribute to the delivery of public services (Osborne, 2006). PSOs are therefore found to be adopting strategy practices to the delivery and collaboration with service providers but opt for engagement with government agencies as opposed to (non-public) independent contractors (Osborne, 2006).

The table below presents key models of strategic management in the PSO context. The comparative review acknowledges significant employment of processual strategy research in the public sector domain. Ferlie & Ongaro (2015: 81) note that a “similar analytical logic can be applied to both sectors [and] both experiencing enhanced pressures for strategic change”. Processual research on strategic change in the PSO context have sought to understand how large and mature institutions engage in

strategic change to revitalise. It should be noted that regardless of whether private-public context, processual scholars view the change and strategy processes as the same (Sminia & de Rond, 2012). Ferlie & Ongaro (2015: 102) suggest that continued focus on this domain “to study how whole organisational systems reconfigure and evolve, perhaps in unexpected or even perverse ways”. Although process-based research within the PSO context is well established, the extensive review carried out by Ferlie & Ongaro (2015) did not identify the adoption of Mintzberg’s school of strategy formation which emphasises learning and emergence. In addition to noting that Mintzberg’s approach has “strong application to public sector settings” (Ferlie & Ongaro, 2015: 81), it should be insightful to incorporate Pettigrew’s and Mintzberg’s approach into the study of alignment as they share significant underlying beliefs on processes and context (Dawson, 2005). An emergent perspective is particularly interesting since PSO’s strategies were found not be formal documents, but rather mere ‘shopping lists’ that did not elicit nor provoke clear future decisions and actions (Langley, 1986; cited in Llewellyn & Tappin, 2003). Rather, “a strategic orientation did emerge as the spontaneous result of professional aspirations, decisions and activities” (Llewellyn & Tappin, 2003: 958).

School	Exemplary Texts	Key Public and Non- for-Profit Sector Texts	Comments
Strategic Design and Planning	Chandler (1962); Ansoff (1965); Andrews (1971);	Bryson (1988, 2011); Fretzel et al. (2000)	Can be adapted for public sector conditions (but note high politicization; pluralist power relations)
Strategic Positioning School	Porter (1980, 2004)	Porter & Tesiberg (2006)	Historically, private sector based and difficult to apply in public sector setting; may be more applicable within strong quasi markets; may still require adaptation
Mintzberg, Learning, Emergent Strategy and Organizational Context	Quinn (1980); Mintzberg (1983); Mintzberg & Waters (1985)	NONE	Strong application to public sector settings; Professionalized bureaucracy and adhocracy.
The (Social) Entrepreneurial School	Mintzberg (1973)	Pettigrew (1979)	Strategy making in smaller scale settings; role of the founder of an innovative social setting can apply to some social enterprises
The Cultural School	Pascale and Athos (1981); Peters & Waterman (1982); Deal & Kennedy (1982)	Pettigrew (1979)	Japanese influence; reaction against structure; quality wave
Resource-based View	Penrose (1959); Wernerfelt (1984);	Harvey et al. (2010) ; Casebeer et al. (2010)	Knowledge-based view of strategy
Strategy as Process	Pettigrew (1985); Pettigrew & Whipp (1991); Van de Ven et al. (1999)	Pettigrew (1992); McNulty & Ferlie (2002); Ferlie et al. (2013)	Broadly similar analytical logic can be applied to both sectors; both experiencing enhanced pressures for strategic change
Corporate Governance School	Jensen & Meckling (1976); Fama & Jensen (1983); Lorsch & MacIver (1989); Charkham (1994)	Ferlie et al. (1996)	A strong influence on NPM reforms.

Strategy as Practice	Johnson et al. (2003); Jarzabkowski et al. (2007); Johnson et al. (2007)	Jarzabkowski & Wilson (2002)	Similar analytical logic applied to both sectors
Public Value School	Moore (1995)	Benington & Moore (2010)	Developed as a public sector model of strategy but influenced by other more orthodox models

Table 1: Comparison of Private-Public Sector Literature

2.5.3. PSOs and Strategic ICT

While public sector entities have developed a capacity for strategic management to ensure successful delivery of services under an overarching ‘strategic agenda’ derived from policy, governments have also transitioned towards implementing information systems to offer better services to the public. In the early 2000s, governments have globally transitioned towards e-Government to better engage with various stakeholders’ contexts; such as: government-to-citizen (G2C), government-to-business (G2B), government-to-employee (G2E), government-to-government (G2G), internal efficiency and effectiveness of e-government systems (IEE), and overarching infrastructure (Lee et al., 2005). These transitions can also be attributed to the reforms taking place known as NPM (Davison et al., 2005).

As Fedorowicz et al. (2009: 51) note, “a necessary precursor to the success of a large-scale e-government project is a thorough analysis of the needs of all affected agencies, organisations and citizen groups.” and that a “strategic alignment approach to the expectations of each of these stakeholders would drive the design and use of the [interorganizational system] and will foreshadow its success”. Mobilisation of support is essential for PSO’s strategic agenda through the promotion of external stakeholder needs and internal communication (Poister & Streib, 1999; Fedorowicz et al., 2009) emphasise the role that social alignment plays in PSO ICT strategy implementation. Additionally, Berry (1993, 1994; in Poister et al., 2010: 528) found that networked organisations and their resultant inter-organisational partnerships lead to more effective strategic planning as well as finding that “agencies were more likely to engage in strategic planning when neighbouring agencies were also doing it”.

2.6 Discussion

The literature review adopts a narrative structure to guide the examination of scholarly work on the topic of alignment. The narrative approach further facilitates the opportunity to cross-examine alignment through the lens of strategic management, organisation theory, systems theory, and information systems. The flexibility of this approach offers the possibility of making sense of the phenomenon as well as guiding the choice of literature to place greater emphasis on processual aspects. The systematic review is restricted by the rules it imposes, such as its search strategy. For example, alignment in general literature is also referred to as fit, synergy, cohesion, and many alternative forms of interpretation and these have been further used in various social, intellectual and

operational alignment research across domains. As such, the systematic review would not have been effective in targeting relevant studies via key word search and inclusion/exclusion criteria to inform strategic alignment while the narrative – through forward and backward tracing – created a topical history of alignment and understanding its adaptation over time through incorporation in various domains and schools of thought.

Through the review, a few thematic areas emerged. Section 2.2 offered an evolutionary perspective of the concept of ‘fit’ and is the precursor to strategic alignment within the information systems domain. Here, it was clear during the strategic management phase that scholars primarily focused on the content-based interpretation of strategic alignment that emphasised the ‘what’. As such, bifurcation did not occur, and this review therefore sought to push back and split of the processual school of thought to obtain a new understanding of strategic alignment. Furthermore, much of the criticisms derived from strategic alignment (Section 2.3.3) are characteristic of theoretical and methodological choices adopted within the organisation theory and strategic management era of ‘fit’ research, and therefore alternative options were explored within Section 2.4.

Strategy-as-a-Process (Section 2.4) targets a specific niche in strategy process research. While often treated synonymously, these two domains are very different and have often led to confusion in strategic alignment research because while stating ‘process’ from a sub-domain perspective, it is inherently not processual from a methodological perspective. Therefore, this section of the review seeks to present a true processual interpretation of strategy to inform alignment. In this instance, strategy and change are the same – in the sense that strategy sets out aligning requirements while change emphasis re-alignment. From this perspective, a dynamic model of alignment can be outlined to guide inquiry.

To provide contextual insight into the nature of alignment within Public Service Organisations, Section 2.5 provides a private-public sector comparison in an attempt to understand whether private and public organisations are in fact different from a management systems and strategising perspective. It emerged that there was greater convergence between these two components starting in the 1990s with New Public Management, which emphasised a private-sector approach to managing organisations – and is in line with the public sector reforms that took place in the Republic of Ireland in the 1990s to achieve the same. However, while there is greater convergence, the difference is in the contextual history as well as greater impact of external stakeholders (public and central government). Interestingly, while private sector studies emphasize industry, public sector organisations emphasis central government – as these are evidently significant influencers through their control, reform or finance agencies.

Overall, what emerged was the need for a new interpretation of alignment from a process point of view – which requires a change in theoretical perspective as well as methodological structure. Therefore, the research asks: *How does strategic alignment develop over time in the context of public service organisations?* While broad in nature, this personally assigned research mandate seeks to understand: 1) what is strategic alignment; and 2) how does it develop over time in public organisations. Research on the first topic found that strategic alignment is not a single alignment type, but rather comprised of multiple aspects – such as social, structural and intellectual; while the research on the second topic sought to understand the dynamics of strategy development – and how this process is guided by aligning mechanisms. The next Chapter will therefore delve deeper into process metaphysics and outline a method that adheres to process thinking with the ultimate aim of providing insight to the dynamic nature of strategic alignment.

Chapter 3: Methodology

3.1 Introduction

This chapter is concerned with scientific method and therefore outlines the chosen paradigmatic position based on the critical realist philosophy of science in addition to the contextualist world view. The overarching aim is to develop a methodological foundation built on a set of core notions derived from process metaphysics that allow for a contextualist inquiry into dynamic social systems that emphasise the centrality of time. The choices and positions presented in this chapter are derived from the literature review – which concluded that a content- and quantitative-based approach to the examination of strategic alignment is dominant. Overall, the chapter also aims to defend the choices taken in relation to the wider choices available to researchers – whereby the philosophical emphasis seeks to act as a precursor to understand why the positions adopted are essential to fulfil the aims of the research objectives.

Section 3.2 briefly seeks to transition from the ‘static’ perspective that is popular in literature towards a more processual perspective from a philosophical standpoint – which has implications for the method. Section 3.3 outlines a set of notions to solidify the philosophical position taken in relation to ontological and epistemological assumptions – while also making the case for a critical realist inquiry. Section 3.4 structures the method and adapts its characteristics to processual and critical realist assumptions. To ensure replicability, section 3.5 sets out the precise steps taken within the research process to ensure that this type of empirical examination can be replicated. Finally, Section 3.6 concludes the chapter and transitions towards the Case Narrative in Chapter 4.

3.2 Processual Discussion

The need for a processual discussion with an emphasis on ontological and epistemological positions is vital in preparing a method that generates an understanding of strategic alignment that is dynamic. As consistently outlined within the literature review, the continued emphasis on content-based and contingency research has not addressed the continued calls for processual and longitudinal research (e.g., Weil & Olson, 1989; Berger et al., 2001; Schlosser et al., 2015; Liang et al., 2017). The following section therefore discusses the process to identify the underlying requirements for the methodology.

The methodological approach adopted is derived from two components: first, the reflection on process using metaphysics to determine how content research on strategic alignment can be extended and contributed to; and secondly, a discussion on the core belief that reality extends far beyond the conceptualisations presented in both positivism and interpretivism – as these encapsulate the metaphysical reality as being singular and flat from an ontological perspective. It should be noted that these methodological choices are not derived from closing methodological gaps or contributions, but rather that the advancement of theory requires a methodology – and specifically, a philosophy – to assist in interpreting a world that is complex, open and dynamic. As such, many implications presented here are based on core foundations of systems theory and process thinking.

Before beginning the discussion, this paragraph will set out some characteristics identified within the literature review, aside from the dominant emphasis on content-based studies of alignment that seek to primarily illustrate ‘what’ needs to be aligned, rather than ‘how’. A key theme within the study is the representation of organisations as open and cooperative systems that exhibit equifinality. Portraying an organisation as both selective and adaptive – alignment (i.e., strategy – to align, change – to realign) is a joint outcome of intentionality and environmental effects (Lewin & Volberda, 1999). Embedding systems theory logic necessitates the ability to illustrate the complex internal and external environment and how these trigger mechanisms that guide the strategy development process.

Often, business units are seen as formally bounded groupings of individuals with a singular mandate; however, business units are also bounded by time – in the sense that they evolve via changes in structure, people and objectives. Additionally, portraying business units as formal sub-system neglects that actors within the units operate outside the scope of the pre-defined structure. For that reason, informal systems are to be considered as actors that transcend formal boundaries through communication and experience and as such, alternative systems emerge and reflect a network arrangement that operates within an organisation but outside the formal hierarchy. Systems theory also introduces the notion of equifinality whereby alternative structural, social and strategic arrangements could be equally viable in differing contexts (Reiman, 1973). As such, the philosophical thought and methodological structure needs to consider that alignment is not outcome based (i.e.,

generates performance), but rather seeks to allow for cooperation within an organisational system to meet the objectives prepared by the control system. Research on alignment has often emphasised that performance increases by aligning certain components, yet it does not capture how these objectives are achieved. For that reason, one may argue that performance is only a secondary effect of alignment, rather than a primary priority. Cooperation is vital in goal-seeking systems such as organisations and therefore alignment research must emphasise how cooperation (between units, people and unbounded sub-systems) is guided by structural, social and technical alignment mechanisms.

Finally, most of management research inquiry is linked to Dubin's (1978) Model of Theory Building – which emphasises congruence and contingency (Fry & Smith, 1987) resulting in the need to investigate and define the 'law of interaction' amongst internal and external organisational components for any given phenomenon. The neatly packed and framed interactions amongst components (in the form of variables) give insight into the phenomenon, but not into the complexity of organisational reality, including the mundane chaos in day-to-day operations.

3.2.1 Grounding a New Perspective: Departing from Fixity

As illustrated through the continued reflection of 'static' treatments of strategy in the ICT domain within the literature review chapter, this section will attempt to examine the 'traditional' assumptions adopted both implicitly and explicitly by organisational scholars. The substance-based view will be presented and critiqued while simultaneously making the case for a processual critical realist research agenda. The critique is based on ontological and epistemological paradigmatic positions taken.

Scholars adopting the 'traditional' paradigmatic approach of positivism and substance metaphysics have adopted the *correspondence theory of truth*. Proponents of the correspondence theory of truth agree with the notion that: truth equates to corresponding with the facts (David, 2016). This representationalist epistemology is problematic from a processism standpoint as it emphasises the 'outcome' of change rather than the process itself – defining change as transitional phases that bridge different evolutionary stages (Chia, 1999). From an ontological viewpoint, this perspective asserts a discrete (time) interpretation of reality, such as Lewin's Ice Cube model of change. However, this thesis posits that strategy and change are continuous, ongoing and dynamic – thus countering the substance (freeze-unfreeze-refreeze) view on change. Finally, the traditional correspondence approach implies contingency as causality through necessity; however, an issue dominant with this assumption is the lack of contextual interpretation (Hernes, 2014). Therefore, the traditional study of organisations – which adopts a correspondence theory of truth – rejects the notion of epistemological relativism and subsequently disregards the notion that truth is dependent on a specific context. To conclude, this thesis argues for a contextualist-based interpretation of truth which promotes epistemic relativism – drawing on coherence theory of truth. As such, truth is viewed in the form of coherence – the

consistency between propositions – which are to be viewed as a whole rather than parts (Cohen, 1978), emphasising context-specific phenomenon.

Scholars adopting the substance view have also fallen foul of what Whitehead (1925/1967: 51) termed *misplaced concreteness*: “There is an error; but is merely the accidental error of mistaking the abstract for the concrete”. It is fallacy concerned with describing organised entities and their respective boundaries (Hernes, 2014). This approach is reflective of reductionism, where scholars seek to view entities as aggregates of their sub-units (Hernes, 2014). In opposition, a dynamic and holistic interpretation is one of meaning and experiences – which requires sensemaking to make sense of events (Hernes & Maitlis, 2010) since from a process metaphysics standpoint, events are classified as ‘one entity’ which reflect ‘spatio-temporal unities’ and as such – “mirrors within itself the modes of its predecessors, as memories which are fused into its own content” (Whitehead, 1925/1967: 72). As such, it indicates that ‘history matters’ and therefore adopts an approach that centralises the role of context. Furthermore, it will require a grounded method and specifically, axial coding to deconstruct and reconstruct the phenomenon.

Additionally, traditional inquiry has sought to employ deduction in the scientific process. However, *deductive logic* is fraught with issues of defeasibility (Nute, 1999) – which has significant implications for the ability to make precise and accurate inferences, by retracting certain inferences when new data arise. As such, a non-monotonic approach to logic is taken to allow for abduction, indicating the ability to retract arguments (consistent with epistemic relativism and contextualism) based on linking and triangulating using various sources (consistent with coherence theory of truth). This logical system is essential when inquiring in situations with incomplete information where the inquirer “must make and subsequently revise assumptions in light of new observations” (McDermott & Doyle, 1980: 41). Therefore, this thesis takes a critical realist position of scientific inquiry utilising grounded theory comparative analysis to overcome the issue of defeasibility in deductive inquiry. This ensures accurate and relevant truth from both an epistemological and ontological position outlined in the contextualist view and processism.

Another assumption is concerned with *stability* versus change. Traditional organisational studies approaches have adopted (mainly implicitly) substance-oriented metaphysics and thus engage in a Newtonian mechanistic interpretation of social reality. The dominance of this approach has constrained our view of social systems and therefore has led to the emergence of viewing social reality as static entities defined by patterns of order and based on principles of discrete time-space placements that can be isolated (Chia & King, 1998). As Chia (1999: 210) notes: “There has been little attempt to understand the nature of change *on its own terms* and to treat *stability, order* and *organisation* as exceptional states. This is because, for most of us, our deeply ingrained habits of thought surreptitiously work to elevate notions of order, stability, discreteness, simple location,

identify and permeance over disorder, flux, interpenetration, dispersal, difference and change” (emphasis in original). The tension derived from the stability-change paradox has been proposed for further investigation to enhance understanding of enablers and inhibitors of strategic change (Mueller & Kunich, 2018). Therefore, adopting the language of organising (as opposed to stable-order organisation; see Tsoukas, 2005) we can provide insights into the dynamic nature of phenomenon. This linguistic alteration is also shared by Weick (1998) who persuades readers that the transition of ideologue offers important implications for how theory is developed in postmodern organisation theory.

Finally, the last hurdle of substance-based approach is one of inert temporalities. Traditionally, “change has been considered timeless, yet understanding of change is incomplete without an understanding of the temporal dimension of change” (Ranson et al., 1980; cited in Hernes, 2014: 32). Typically, this has led to a cross-sectional approach where static entities were characterised as inert. For example, this approach “explains change in terms of relationships among independent variables and dependent variables” where organisations are fixed entities with differing ‘characteristics’ (attributes, variables) where time is immaterial (Van de Ven & Poole, 2005: 1382). The position that this thesis seeks to adopt is one of on-going temporalities which delineate the need for a longitudinal process approach to inquiry. As such, it discards discrete time and opts for a continuous interpretation of process.

3.2.2 A World on the Move: The Centrality of Time

This section is concerned with presenting notions of temporality to inform a dynamic interpretation of social reality and therefore build on the prior section. By acknowledging the centrality of time in process metaphysics, this section will demonstrate some key notions useful for the processual inquiry into the dynamic nature of strategic alignment – by eliciting explicit underpinnings of a world on the move. This section will present the notion confirming philosophical assumptions espoused by processism and the contextualist worldview. Additionally, it seeks to present a framework for understanding a ‘world on the move’.

A world on the move is a world with *ongoing temporalities* – which implies that the “passing of time is an intrinsic quality of the world” (Hernes, 2014:44). This notion puts forth the argument for a longitudinal and diachronic understanding of social phenomenon. Within this debatable interpretation lie two viewpoints, each determined by its processual stance – strong or weak processism. While weak processism acknowledges time, it does so by asserting a periodic temporality (Schultz & Hernes, 2013) – where organisations transition in an evolutionary manner to and from stable to fluid, and vice versa (Al-Saji, 2004). On the contrary, strong processism views organisations as an ongoing process that do not exhibit stability – sharing similarities with notions of quasi dynamic equilibrium from systems

theory, where entities and their components (objects, sub-systems) are constantly in flux. It has been argued that 'temporal flow' should be excluded to remove social reality from research and but by doing so it does not represent organisational life leading to irrelevance of theory for practitioners (Bourdieu, 1990; Zaheer et al., 1999; cited in Sandberg & Tsoukas, 2011). As such, stability with this view is a particular type of dynamic rather than a given (Thietart & Forgues, 1995; George & Jones, 2000). In order to make sense of these temporal dimensions, one needs to consider the six dimensions of process: continuity, magnitude of change, rate of change, trend, periodicity and duration (Monge, 1990).

When reflecting on temporality, context is essential. Traditional approaches have adopted an exogenous interpretation of context – which framed processes in context that assumes stable and rigid contexts (Hernes, 2014). The implications of this is the exclusion of agency causality – where only environment and organisational context influence the strategy development process. This thesis adopts an endogenous interpretation of context which, in addition to environmental and organisational context, emphasises the role of agency where processes are viewed as connectivity (relations between heterogenous elements) and as recursive reproduction (Hernes & Weick, 2007). This perspective draws similarities to Weick's (1979) learning loop model, Burgelman's (1991, 1994) notion of autonomous actions and Luhmann's autopoietic theory of systems. For example, Weick (1979) presents the enactment-selection-retention notion that suggest that actors create and give meaning to their environment. Burgelman illustrates how actors outside the formal management system influence strategy. Also, Luhmann's interpretation of general systems introduces the importance of historicity and path dependence, where organisational systems are: "entities [that] are seen to interact with their own world, rather than with the external [exogenous process perspective] world per se. Since interpretations are formed over time, systems are formed by their own historicity as past choices and the effects of those choices interact to constitute their identities" (Hernes, 2014: 201). This view has also been supported by March & Olsen (1975) and Giddens (1984).

Regarding the exogenous view on context, March & Olsen (1975: 152) note that authors assumed that "context has stable properties that allow unconditional prediction"; however, they have "observe[d] a much more interactive, branching, and contextual set of connections among the participants, problems and solutions in an organisation". Similarly, Giddens (1984: 282) also comments on the 'contextualities of interaction' and its role in the study of social reproduction – by positing the need to understand phenomenon reflexivity in relation to agent causalities. Therefore, this thesis adopts an endogenous view of process from an epistemological standpoint and rejects the substance metaphysics view that claims knowledge and truth to be fixed (Rescher, 1996). From a strategic management standpoint, this notion of agency and context relationships is one of 'adaptive coordination' where the strategy process is influenced by both internal and external context in addition

to agent reflexivity (Farjoun, 2002; Hernes & Bakken 2003). Therefore, this thesis takes a soft approach to determinism and human agency and thus adopts a wayfinding notion of strategy where agents are “intimately immersed in and inextricable from contexts, and, as such, his or her actions emanate from with the constantly evolving circumstances” (Chia & Holt, 2009: 159).

Finally, the last important notions for process-based change research are *potentiality* and *actuality*. As Hernes (2014: 65) notes, “one aspect that sets process views apart from prevailing views in organisation studies is the notion of potentiality coupled with actuality”. Interestingly, these concepts are aligned with that of critical realism, more specifically, the stratified and independent ontology that argues that some generative mechanisms are not observable but do exist outside the knowledge of the observer. Hence, actuality refers to observable process motors within the empirical domain, whereas potentiality refers to mechanisms that exist within the real and the actual but cannot be empirically observed. In process metaphysics, Hernes (2014: 66) notes with regards to Whitehead’s interpretation that “potentiality represents that which provides forward and backward projection of process in time while offering realisation of opportunities” and allows one to “capture the ongoing emergent nature of organisational life”. The aforementioned statement can also be juxtaposed with that of path dependency – since a path dependent process acknowledges that some actions may emerge (potentiality) over time once the patterns gradually become more distinct (Sydow et al., 2009).

From a critical realist standpoint, the researcher considers emergent powers and tendencies – to theorise what structures must be present to warrant such an event. Bhaskar (2008: 222) illustrates the following: “All men (living in certain kinds of societies) possess the power to steal; kleptomaniacs possess the tendency to do so”. As such, all individuals have the potential to do so, but kleptomaniacs exhibit a tendency to actually do so. These concepts of potentiality and actuality have been explored both in philosophy (e.g. Aristotle’s *potentia* vs *energia*) as well as in quantum physics (e.g., Heisenberg’s Principle). These notions are imperative for understanding causality. Since the metaphysical reality is deterministic, events are bounded temporalities within a longer causal chain. This requires acknowledgement of both epistemic and ontological considerations – especially due to the stratified nature of reality. The deterministic view of causality asserts that “everything is determined in accordance with laws by something else, this something else being the external as well as the internal conditions of the object in question” (Bunge, 1979: 26). Therefore, to incorporate the dynamic nature of reality, the study must adopt a longitudinal time horizon for understanding of causality and a critical realist inquiry approach to make sense of potentiality and actuality of strategy process mechanisms.

3.2.3 Resolving Tensions for Complementarity

3.2.3.1 *The Case for a Basic Belief System*

The aim of this section is to adapt – and to some extent develop – a basic belief system that integrates the contextualist worldview with the formally systemised philosophy of critical realism, both of which, share the underpinning ontological assumptions put forth by process metaphysics. The motive for adaptation is to relieve ontological and epistemological tensions derived from the integration of three intellectual traditions. While the said traditions are believed to share generality – where scholars have adopted contextualist-based processual research to identify underlying generative mechanisms based on a critical realist approach. Therefore, the aim of this pursuit is to offer a guiding set of philosophical assumptions that are used to inform the method and nature of inquiry; and ultimately, act as a *modus operandi* that guides the collection and analysis of data as well as indicating its relevance and rigour by acknowledging epistemological relativism (and contextualism: qualitative confirmation) and by rejecting judgmental relativity.

First, the linkages and complementary nature of the three traditions will be illustrated. Secondly, two tensions derived from integration will be addressed:

- A) Tension between Whiteheadian process metaphysics and critical realist transcendental realist ontology; and
- B) Tension emerging from the process logic's epistemological implications in conjunction with critical realist and contextualist epistemological relativism.

Thirdly, the ontological assumptions adopted for the proposed study will be put forth in addition to their implications for method. Based on the nature of reality, the next section will examine the theory of knowledge by setting out epistemological arguments that determine the state of knowledge as well as what knowledge is derived from processual inquiry.

3.2.3.2 *Complementarity*

This section details the paradigmatic examination of the altered basic belief system used to guide the disciplined inquiry set out in the review of literature. The basic belief system acts as a starting point that determines “what inquiry is and how it is to be practiced” (Guba, 1990: 18). The stance taken in this research study is one of pluralism – thus abandoning the constraints placed on inquiry from the traditional dichotomy of interpretivist and positivist paradigms. A pluralist approach – and specifically one of a realist nature – has been asserted to advance research in general social sciences and management research, and specifically within the information systems research domain (c.f. Danermark et al., 2002; Mingers, 2001, 2002, 2003, 2004; Easton, 2010; Wynn & Williams, 2012; Mingers et al., 2013; Mingers & Standing, 2017; Williams & Wynn, 2018; Markus & Rowe, 2018). To begin the integration, it must be formally acknowledged what a belief system constitutes. Morris

(1997: 537), notes that when “epistemology and ontology are formally systematized, they constitute philosophies of science; when they are informal organized, they constitute world views”. From an operational standpoint, both critical realism and process metaphysic are philosophies of science while contextualism is a world view. Worldview, derived from the German *Weltanschauung*, represents a manifestation of individual or group belief – a view and understanding of the world – without rational pretensions (Wolters, 1983). Incidentally, contextualism is one of Pepper’s (1942/1961) Worldview’s. Thus, while Pepper does address root metaphors and engages in logical argumentation – it is derived from one’s own knowledge of the world. As Pepper (1942: ix) reflects:

“Here is the solution that seems best to one man, living in the first half of the twentieth century, who has passed through most of the cognitive experiences we have been subject to: religious creed, philosophical dogma, science, art, and social revaluation. Possibly here is also a present crystallisation of some twenty-five centuries’ struggle and experience with the problem of how men can get at the truth in matters of importance to them”.

Indeed, contextualist theories have been developed as a result of philosophical scepticism and “has been called the ‘relevant alternatives’ view of knowledge” (DeRose, 1992: 918) – and adopts a foundationalist approach to epistemic justification (Williams, 2001). Scholar’s treatment of contextualism has led to controversy – and this controversy, has been compounded due to individuals reading only secondary sources (interpretations) of the contextualist worldview (Morris, 1997). However, Pepper’s treatment of ‘context’ in ‘contextualism’ has great validity and the ability to verify and falsify knowledge through process interventions and case reconstruction (Mjoset, 2009; Easton, 2010; MacFarlane, 2014). Therefore, the assumptions of the root metaphor will be integrated into the formal assertions of Critical Realism and Process Metaphysics to develop a processual contextualism research method to dynamically observe the interested phenomenon.

The traditions are compatible as follows:

A) Pettigrew’s contextualism derived from Pepper’s contextualist worldview subscribes to critical realism due to Pettigrew’s ‘mediativist’ orientation that conceptualises the social world as “mediating between reality and accounts of reality, but not eliminating the effects of reality” (Pettigrew, 1997b; in Sminia, 2009: 106).

B) from an ontological perspective, both contextualism and critical realism subscribe to the process-based view of organisation as they view reality as being constantly enacted – and both emphasise an event-based interpretation by incorporating the centrality of time (Pettigrew, 1985a; Tsoukas & Chia, 2002; Wynn & Williams, 2012); and conversely,

C) process metaphysics from an epistemological perspective subscribes to critical realism and contextualism – to some extent – by suggesting that knowledge is local and historically dependent (Morris, 1997; Mingers, 2000; Mingers et al., 2013) and similar in the sense that external observers understand that truth and meanings change, and therefore counteracts substance metaphysics' notion of static truth and fixity (Rescher, 1996).

3.2.3.3 Resolving Tensions

This section seeks to relieve tensions derived from the integration of said traditions. It should be noted that the philosophies and worldviews are not altered – but rather reinterpreted to allow for mutual cohesion among key elements vital for solidarity without neglecting or rejecting artefacts and propositions that make the traditions unique and rigorous. The tension dyad derived from integration is concerned with ontological and epistemological sub-branches of metaphysics.

The *ontological* dilemma is concerned with the Whiteheadian notion of process which pledges to the process reducibility thesis – and suggests that only processes that can be experienced are seen to exist (Rescher, 1996). This thesis rejects this notion – and adopts a critical realist stance and modern processualism viewpoint to argue that processes exist outside our understanding of them – and therefore accepts an independent reality and a world that is differentiated and stratified (Sayer, 1992; Fleetwood, 2009). The process reducibility thesis posits that processes are 'owned' in the sense that one views processes in terms of the activities of things – referring to weak processism (Rescher, 1996). This thesis takes the position that processes have primacy over substance and therefore takes a 'strong' approach to the priority of process as opposed to Whitehead's argumentation that "things dependent on processes" (Almeder, 2013). A strand of processism has been advanced that rejects the Whiteheadian principles due to its inability to express dynamic relationship among occurrences – referring to 'strong' processualists as ontologically seeing entities as occurring entities (Seibt, 2018). From an epistemological standpoint, the adopted viewpoint is a "view of human knowledge as a combination of elements contributed by the human mind and by the world external to it. Each is essential; neither is reducible or analysable in terms of the other" (Kekes, 1994: 391). This notion submits to the retroductive inference approach between transitive and intransitive domains for knowledge creation (Bhaskar, 1998, 2008). This notion also submits to the research agenda in offering a holistic approach that subscribes to a stratified reality composed of the real, the actual and the empirical. Finally, this position requires the use of grounded theory to offer the retroductive inference (Zachariadis et al., 2013).

The *epistemological* dilemma arises from process logic's epistemological implications in conjunction with critical realist and contextualist epistemological relativism. This thesis posits, however, that processism's treatment of the theory of knowledge is in actuality, a core aspect of the critical realist philosophy of science. The foundation for this position is the notion – as outlined in the upcoming

ontological section – that not all processes and their respective generative mechanisms are observable to the individual. Substance metaphysics emphasises the primacy ‘things’ (substance or ‘weak’ process) and thus treats knowledge and its truth as “something inert and changeless, seeing that the mainstream logical theory of the West takes an approach to truth that is committed to its static fixity” (Rescher, 1996: 123). Rather, the ontological assumptions outlined suggests that knowledge and its interpretation is fluid and unstable (continuously changing) and thus information is seen to be subject to change depending on the given context (Rescher, 1996). This perspective therefore subscribes to epistemic contextualism (Pepper, 1961) as well as epistemological relativism (Bhaskar, 2008) put forth by contextualism and critical realism, respectively. Therefore, the dilemma is resolved by the adoption of an ontological perspective that rejects Whiteheadian processual scholar’s treatment of the primacy of process by acknowledging that knowledge itself based logic of process metaphysics is context-specific and continuously changing as organisations are constantly in a phase of enactment.

3.2.3 Causality and Determinism

This section is concerned with causality – which is of utmost importance in the discussion of process metaphysics and strategy-as-process research, as individuals seek to trace the sequence of events and actions over time. In the quest to identify generative mechanisms, the inquirer must ask themselves: what agent(s) or event (A) caused action or event (B)? The importance of causality is often understated – since it is the foundation for scientific inquiry and subsequent knowledge creation. For example, Aristotle in *Physics* (194 b17-b19) asserts “Knowledge is the object of our inquiry, and men do not think they know a thing till they have grasped the ‘why’ of it... which is to grasp its primary cause”. Furthermore, David Hume referred to causality as the ‘cement of the universe’, defined as “the relation between cause and effect, or the act of bringing about an effect, which may be an event, a state or an object” (Kim, 1999: 125). Also, Weber’s (1947: 88) approach to *Verstehen*, argues that the role of science is to offer “the interpretive understanding of social action in order thereby to arrive at a causal explanation of its course and effects”. While it can be agreed that the aim of science is to understand cause and effect, the critical realist advances the agenda by incorporating the notions of potentiality and actuality – known in the philosophical domain as ‘counterfactual elements’ (Wright, 1974). This allows researchers to theorise about the domain of the real (Bhaskar, 2008).

As Mingers & Standing (2017: 171) note, “[t]he organisational is a constant flux of unfolding events which involve people, technology, materials, money, power, social structures and ideas”; and these interactions – between social and physical structures – produce potential and actual events via generative mechanisms. As such, critical realism adopts a mechanistic view of causality as opposed to positivist and interpretivist views on causality. In fact, the mechanistic view has also been suggested as a useful tool in explaining causation in strategy research – specifically, the adoption of the ‘counterfactual approach’ that “builds on a systematic analysis of ‘what-if’ questions” (Durand &

Vaara, 2009: 1245). While positivism adopts a nomothetic (Humean) view on causation and interpretivists reject causation outright, realism's pure aim is to identify generative structures and causal mechanisms (Durand & Vaara, 2009). Due to its importance, the following section will briefly outline causality in relation to information systems.

Markus & Robey (1988: 582) state that causal agency "refers to beliefs about the nature of causality: whether external forces cause change, whether people act purposefully to accomplish intended objectives, or whether changes emerge unpredictably from the interaction of people and events". Three perspectives of causality in ICT literature have been adopted: 1) the *technological imperative*: a deterministic view where external forces produce change; 2) the *organisational imperative*: a voluntarist view where individuals/actors have 'free will' and accomplish change objectives; or 3) the *emergent perspective*: a hybrid view where change is produced through actor-event interaction (Ibid.). Markus & Robey (1988) found that most research has adopted a deterministic view of causal agency, a variance-based approach to logical structure and has focused on single level of analysis. Therefore, they emphasised the need for process-based theorising that acknowledges the emergent perspective of organisational change across multiple levels of analysis. Twenty years on, Pare et al. (2008) conducted a review of leading ICT journals and obtained a sample of 161 theory-driven articles; they found that: 1) 16.8% of articles (n = 27) adopted an emergent perspective to causal agency; 2) 20.5% (n = 33) adopted a process-based approach; and 3) 13.7% utilised a multi-level approach. Therefore, a processual multi-linear understanding of causality in a social-technical context is still in a relatively nascent stage.

Using a combinatory approach of voluntarism and determinism, this thesis seeks to explain both event and agent causation. Whereas event causation links the causation of one event to another, agent causation links an agents' action to an event. In addition, three dimensions of causality will be used to interpret the two aforementioned categories of causation: causal ontology (mechanisms that connect input to outputs), causal trajectory (multi-level causality), and casual autonomy – the causal effects between actors and technology (Markus & Rowe, 2018). The reason why causation is imperative is its ability to identify and examine mechanisms. Mechanisms are the outcomes of critical realist inquiry; therefore, understanding event, agency and technological causation will allow research to guide the inquiry into identifying social and intellectual alignment mechanisms.

While the research conducted on social and intellectual alignment relies primarily on a static variance-based method, some preliminary causalities can be identified based on the review of literature in Chapter 2. Parts of the organisational imperative – that is, the influence of organisational context on technology – are social and relational mechanisms such as ICT governance, steering committees, shared domain knowledge and understanding, communication as well as communication. Therefore, it can be stated that the organisational imperative is essential and draws stark similarities to research

on social alignment – which itself is a prerequisite for intellectual alignment. On the other hand, the technological imperative – that is, the influence of technology on the organisation – can be referred to as the outcome of intellectual alignment, which from the literature shows increased performance (financial, productivity, customer benefit) as well as a competitive advantage.

3.3 Philosophical Position: A Set of Notions

A paradigm – specifically with regards to social research – consists of four analogous components: ontology, epistemology, methodology and method. Paradigms are a “basic set of beliefs that guides action” (Guba, 1990: 17) and are thus composed of a set of ontological and epistemological assumptions that inform the methodology and the method (Avramidis & Smith, 1999). The following section will explicitly outline the set of assumptions adopted and their implications for the research approach taken. It should be noted that critical realists view ontology and epistemology as interrelated by positing a realist ontology and a fallibilistic epistemology – which argues an independent reality while simultaneously suggesting the researcher’s knowledge itself is socially produced (Bhaskar, 2008; Easton, 2010; Fletcher, 2017). As noted by Bhaskar (2008: xxv): “To be a fallibilist about knowledge, it is necessary to be a realist about things” – things referring to process motors (generative mechanisms). The following section will announce both ontological and epistemological assumptions in a separate format while offering their interrelated dynamics in a concluding manner – to elicit a clear and precise notion of the research paradigm.

3.3.1 Ontology

Ontology and its assumptions are concerned with ‘what is’ and “the kinds and structures of objectives, properties, events, processes and relations in every area of reality” (Smith & Welty, 2001: iii). The ontological aspect of the paradigm takes a manifold position based on process metaphysics of the critical realist philosophy of science:

- 1) a ‘strong’ process view – that is, processual priority and its primacy over substance (Rescher, 1996; Almeder, 2013; Sebit, 2018): assumptions adopted regarding a ‘world on the move’;
- 2) a transcendental (stratified) realist ontology – one composed of the empirical, the actual and the real (Bhaskar, 2008);
- 3) a strong realist ontology – a reality independent of our knowledge of it, which counteracts arguments put forth by positivism (reducibility of reality to the extent that it can be observed and measured) and constructivism (reducibility to the extent of our knowledge; Mingers et al., 2013);
- 4) an open-system ontology – that is, systems (e.g., organisations) are realities composed of sub-systems that are not mechanically combined but rather that enactment of the events can be observed

by their co-determination (Downward et al., 2002) and thus fits with a social-system perspective of permeable boundaries identified in the initial section on systems theory and fit; and

5) a mechanistic causal ontology – refers to the notion that mechanisms are responsible for causality (as opposed to metaphor – directional association; or misnomer – constitutive causality) and thus “causality involves real physical, psychological, and/or social processes that connect inputs and outputs under certain conditions” (Markus & Rowe, 2018: 1263).

3.3.1.1 Process Metaphysics & Implications: Organisation vs Organising

The perspective put forth here is one of ontological becoming – a processism interpretation of organisations as organising, denoting the centrality of time and change (Weick, 1998). Whereas proponents of substance metaphysics (and the variance approach to development and change) view an entity as an organisation, advocates of the processual interpretation of reality see these entities as enacting and therefore organising. As such, scholars adopt a “sociology of verbs rather than a sociology of nouns” (Chia, 1996: 49) to denote the dynamic nature of phenomenon – e.g., alignment vs aligning as it suggests a process (quasi-equilibrium) as opposed to something that can be achieved and maintained (equilibrium, stability). This approach is aligned with the research agenda, one that examines the dynamic nature of strategic aligning in the public sector context. As noted in the review of literature, strategy and change literature that emphasises the third process definition of Van de Ven (1992) was considered due to its treatment of strategy and change in a dynamic manner. While Van de Ven (1992: 169) identified three definitions of the treatment of process, only one – “a sequence of events that describe how things change over time” – subscribes to the ontological assumptions adopted in this study.

While processism can be traced back to Heraclitus’s view, the assumptions adopted here are based on Rescher’s (1996) modification of Whitehead’s (1929) *Process and Reality*. Therefore a ‘strong’ view of process is taken – a view that has been incorporated and discussed in the strategy and change context by notable authors such as Chia, Dawson, Pettigrew, Tsoukas, Langley, and Van de Ven. When adopting this perspective, the organisation is viewed as a secondary accomplishment – from organising expressed deftly as follows: “Organisation aims at stemming change but, in the process of doing so, it is generated by it” (Tsoukas & Chia, 2002: 567). However, many strategy and organisation scholars have attributed the strong view of process to that of strategy-as-practice while strategy-as-process has been associated with a weak processual approach (Bizzi & Langley, 2012).

As noted in the initial section, the practice domain employs the use of ‘levels’ which itself distances it from general process metaphysics. Additionally, Bizzi & Langley (2012) note that strong processism is ‘intellectually attractive’ but poses challenges for empirical research due to the notions of on-going temporality. For example, De Cock & Sharp (2007: 233) note that the adoption of strong processism

has been hampered since authors employing notions of process metaphysics have “revert[ed] to conventional non-process methods... [and] that the cause of this reversion is primarily the challenge of making sense, of fixing the world, propelling us from process into the world of substance”. Others share this view and have noted that the ‘strong’ process view – with regards to ontological status of primacy over substance – has lost its core reference (Olsen, 2011). As such, Olsen (2011) notes that while most studies arguing process over substance have then in fact emphasised a ‘weak’ processual view that adopts some notion of substance metaphysics (Olsen, 2011; Hernes, 2014; Knight, 2015). However, advancements have been made in the area of strategy and change, that allow for scholars to adopt a strong process view when analysing qualitative data (Jarzabkowski et al., 2018). The authors offer three practical guidance notes that allow for process to be captured in qualitative case study research by examining various forms of patterns that emerge (Jarzabkowski et al., 2018). The researchers also note that a grounded analysis of process is required as well as having in-depth knowledge of the process taking place (Jarzabkowski et al., 2018). Due to significant amounts of secondary data and high-level access to the case organisation, this study will adopt a strong view of process.

3.3.1.2 Critical Realism: An Ontological Perspective

Critical realism subscribes to a realist ontology – a reality that is independent of the observer’s knowledge of it. This notion shares similarities with the concept of potentiality and actuality in process metaphysics, where potentiality suggests the existence of generative mechanisms outside our knowledge of the social world. While many have argued that epistemological and ontological assumptions are intertwined from a critical realist position due to the ‘epistemic fallacy’ (fallibilistic realism; Bhaskar, 2008), Smith (2006: 199) argues to start from ontology: “instead of asking how we can know something, a scientific realist asks what the world must be like to generate a particular phenomenon”. These assumptions are based on the notion of a critical realist’s stratified ontology – where the unobservable potential generative mechanism exists in the domain of real (what exists). The stratified ontology is composed of three distinct domains: the real, the actual and the empirical (Bhaskar, 2008). The transcendental realist – through retrodution – attempts to understand how causal powers and structural characteristics enacted specific mechanisms within the domain of reality based on events (actual domain) observed in the empirical domain through experiences (Bhaskar, 2008). The stratified ontology contrasts the assumptions of positivism and interpretivism; where positivism assumes a flat ontology whereas interpretivism suggests reality is socially and individually constructed (Wynn & Williams, 2012).

The critical realist view composed of the following: the real domain (entities and structures as well as the causal powers inherent to them), the actual domain (events that occur when causal powers of

structures and entities are enacted – but may not be observable); and the empirical domain (observable events through experiences via perception or measurement; Wynn & Williams, 2012).

Structures are defined as “sets of internally related objects or practices” that require abstraction to be identified (Sayer, 1992: 92) – and these “real structures exist independently of and are often out of phase with the actual patterns of events” (Bhaskar, 2008: 2). From a systems perspective, structure can refer to the wider suprasystems (e.g. country, industry), organisation systems as well as informal systems and group-level sub-systems. The value from an ontological standpoint are that these structures (and their inherent characteristics and tendencies) are not reducible to their component entities – but rather that the relationship between these systems (structures) have ‘novel properties’ that are unique to the structure itself (Wynn & Williams, 2012).

Bhaskar (1979) makes the distinction from social phenomena (social sciences) and material phenomena (natural sciences) – and therefore, both social and physical structures exist with different properties. These structures have differing ontological characteristics. Social structures “do not exist independently of the activities they govern” and are therefore an outcome of social activity; whereas natural structures are not influenced by their own operation (Mingers, 2006: 25). Social structures are characterised somewhat as interpretivist positions since social structures are based on the agent’s conception whereas natural structures and phenomena occur independent of our knowledge of them (Mingers, 2006). The aforementioned notion is what makes critical realism unique and is derived from the concept of fallibilistic realism – since both social constructions and natural structures exist in reality. Finally, social structures – unlike natural laws – are specific to context, and specifically time and space whereas laws of physics are universal (Mingers, 2006).

In an ontological discussion concerned with the metaphysics of dispositions, Fleetwood (2009: 344) draws attention to three possible ontologies in the critical realist domain: powers as primary, properties as primary or a third ontology where “neither properties nor powers (nor things) are primary, but where all three emerge to form a unity”. Causal powers draw on the process metaphysical assumption of potentiality since it has been noted that these powers possess the potential “to do certain things, but not others (Fleetwood, 2004: 46). Therefore, these powers can potentially generate actual events if their capacities are initiated – but if not, their characteristics are unobservable but still existent. Tendencies are concerned with the classification of ‘things’ and “describe those actions which are characteristic or typical of a given class, species, or type of thing” (Wynn & Williams, 2012: 791). In distinguishing causal powers from tendencies, one must reiterate Bhaskar’s (2008: 222) analogy: “All men (living in certain kinds of societies) possess the power to steal; kleptomaniacs possess the tendency to do so”. As such, tendencies (and therefore generative mechanisms in general) are characterised by potentiality, since they may never be fully realised due to: 1) not being activated; and 2) social and/or physical structures preventing/altering the realisation of a causal effect (Wynn &

Williams, 2012). Not all causal mechanisms can be attributed to agents; therefore, from an ICT context, technological artefacts (e.g., software applications) are a source of emergent powers that can generate events or alter the realisation of a causal effect (Wynn & Williams, 2012).

Events exist in the domain of real and actual – and are defined as “a specific happening or action resulting from the enactment of one or more mechanisms” (Wynn & Williams, 2012: 792). As Bhaskar (2008: 2) notes: “Real structure exist independently of and are often out of phase with the actual patterns of events” – and therefore events are ontological distinct from the social and physical structures that generate them. Researchers adopting a critical realist approach seek to investigate events (outcomes); as well as explaining the “non-occurrence of an event when one is expected” as it can provide insightful findings (Easton, 2010: 120). From a methodological standpoint, this requires researchers to trace how events unfold over time and theorise what generative mechanisms were enacted that caused the transition from event (x) to event (y), and so forth (Fletcher, 2017). While events are not observable, their interpretation through experiences are – as they are situated within the empirical domain.

Experiences are events that are experiences via perception or sensory-enhancing tools (Wynn & Williams, 2012). Indeed, “Scientific work is... to investigate and identify relationships and non-relationships, respectively, between what we experience, what actually happens, and the underlying mechanisms that produce the events in the world” (Danermark et al., 2002: 21). Bhasker terms this analysis ‘vertical explanation’ which seeks to link events and experiences to their generative mechanisms – as opposed to antecedents (Oliver, 2012).

Finally, we must also acknowledge the realist assumption of *emergent powers* which has direct implications for contextualism and method. Critical realists “reflect upon the conditions which must hold if regularities are actually to occur, that is, it asks what a system and its constituent objects must be like for regularities to be true” (Sayer, 1992). It is illustrated that if intrinsic and extrinsic conditions (e.g., internal and external context) do not influence the causal power of mechanisms – and thus producing consistent effects – then no emergent powers are present which suggests the system under investigation is closed (Sayer, 1992). However, organisations are open systems and therefore emergent powers are present and help the identification of mechanisms and therefore the phenomenon overall. As Tsoukas (1989: 554) notes, “Emergent powers are created when some objects or individuals are *internally* related to each other to form a structure (e.g., the relationship between a superior and a subordinate)”. Hence, these emergent powers – while not reducible down to its constituent parts – are properties of the social structure within the organisation. As such, these notions that reject reducibility subscribe to an ideographic ideal: one that considers the whole, as opposed to the positivist nomothetic approach to methodology that seeks to understand variables and their probabilistic dynamic of a given ‘slice’ of a phenomenon. From a methodological standpoint, the

investigation of mechanisms therefore requires an ideographic ideal – one that views phenomenon as a whole and thus requires embedded the phenomenon in context that is inline processual case studies (Tsoukas, 1989; Shaw & Jarvenpaa, 1997; Mjoset, 2009; Dobusch & Kapella, 2012).

3.3.1 Epistemology

This section is concerned with the epistemological assumptions adopted for the study – which are both aligned with and derived from the ontological assumptions put forth in the aforementioned section. It seeks to answer the epistemological question: “What is the nature of the relationship between the knower or would-be knower and what can be known?” (Guba & Lincoln, 1994: 108). Therefore, epistemological realism, fallibilistic realism and epistemic contextualism will be discussed to answer the question. In summation, these positions accept judgemental relativity – thus arguing that not all viewpoints are of equal standing regarding quality or accuracy.

3.3.1.1 *Realist’s Epistemological Stance*

Critical realism’s epistemological perspective is derived from its open-systems ontology (Downward et al., 2002). Additionally, it bridges aspects of both positivism and interpretivism in that it acknowledges that the world is socially constructed (by agents within it) but also exhibits structures that are universal. Hence, truth and knowledge claims are subject to relativity. Due to the realist’s transcendental approach to reality which views ontology as stratified, the observable events (empirical domain) are indeed socially constructed as they are experiences and influenced by agents embedded within it. However, the actual and real domain exhibit structures and conditions (mechanisms) that are universal – thus taking the side of natural sciences and their ‘laws’. Therefore, observations made in the empirical domain are fallible (Easton, 2010: 123) and “it is unlikely to reveal completely and lead to a full understanding of any social situation”. Therefore, critical realists need a multitude of data sources to make sense of the phenomenon and to distinguish between and among competing and alternative explanations (Easton, 2010). From this stance, the epistemological approach is in line with Pepper’s (1942) notion of a contextualist theory of knowledge (via qualitative confirmation; or can be linked with critical realism’s need for triangulation) where context (and resultant conditions) can change the explanation significantly (Morris, 1997). Additionally, Mingers (2000: 1262) notes that “knowledge is always historically and socially located” – where the researcher is concerned with abstraction and theorising as a tool to make sense of various mechanisms that can produce the events through the agent’s interpretation of the events. Apropos case study research, Easton (2010: 124) notes that continuous data collection is required “until epistemological closure, however flawed and temporary, is obtained”. In some sense, this proposition can be likened to that of data (theoretical) saturation – where “no additional data are being found whereby the (researcher) can develop properties of the category” (Glaser & Strauss, 1967: 65; in Guest et al., 2006: 64).

3.3.1.2 A Fallibilist Epistemology

Critical realists take a fallibilistic stance with regards to theory of knowledge, where truth claims are relative. As Miller & Tsang (2011: 140) note with regards to the critical realist approach to testing management theories: “Critical realist philosophy acknowledges the potential fallibility of all knowledge claims and supports modesty regarding verification and falsification alike”. This is essential for validity, as verifications and falsification are not absolute (except mathematical and logical truths) and thus our epistemological approach “involve[s] judgements of superiority and inferiority” (Sayer, 1992: 2006). In furthering our answer to the epistemological question of what the nature of the relationship is between the knower (or would-be knower) and what can be known – the critical realist argue that the knower’s knowledge of the world is always socially produced – and can therefore be judged due to its non-absolute nature. As Sayer (2000: 70) explains: “Just as assessing truth or practical adequacy is not an all-or-nothing affair, neither is falsification. In practice it is messy, provisional and often partial, and the empirical observations are theory-laden – or at least conceptually mediated – though this does not make it impossible for the theory in question to be contradicted”. This notion is derived from the critique of positivism which Bhaskar rejects for promoting ‘epistemic fallacy’ and being theory-determined (Fletcher, 2017) – rather, realist see observation as theory-laden.

The fallibilistic stance has traditionally come under pressure due to identified generative mechanisms being prone to later falsification or modification as opposed to positivist causalities. However, Williams & Wynn (2018) note the usefulness of mechanisms due to their epistemic value since over time, a collection of mechanisms in combination with various contextual settings allows for fruitful theorising in the ICT domain that can be later verified and tested for generalisability.

3.3.1.3 Epistemological Relativism: Retroduction as Knowledge Creation and its Validity

Critical realism “allows for a degree of epistemological relativism where the process of scientific knowledge is viewed as historically emergent, political, and imperfect” (Zachariadis et al., 2013: 857). Bhaskar (2008) posits two domains of knowledge creation due to this relativist standing – both of which are used to understand the empirical domain. These constitute the intransitive and transitive domains and require a retroductive approach to identify and validate generative mechanisms.

According to Bhaskar (2008: xvi), “The transitive dimension is the creative praxis driven process of production of scientific knowledge or the epistemological process” – where causal mechanisms in the domain of real (and therefore scientific knowledge) have two types of objectives: an intransitive objective (structures and mechanisms that are universal) and transitive objective (existing theories and concepts or social practices). Retroduction is a technique utilised to create knowledge by using an iterative and simultaneous approach of theorising between existing literature and empirical data (Bygstad et al., 2016). As Bhaskar (1998: xvii) states: “theoretical explanation proceeds by description of significant features, retroduction to possible causes, elimination of alternatives and identification of

the generative mechanisms or causal structure at work". Therefore, critical realism rejects the hypothetico-deductive approach of inference and adopts abduction and retroduction for scientific inquiry (Danermark et al., 2002). While the aforementioned approach to inference and knowledge creation is fundamental to the natural sciences (positivism), Bhaskar (1998) furthered the notion of retroduction in the domain of critical naturalisms – and argues that its approach puts social science validity and falsifiability on par with the hypothetico-deductive logic. While there is no criteria or definite way to assess the validity of an abductive and retroductive approach (as opposed to induction and deduction), both induction and deduction have limitations where: 1) deduction is purely analytical and cannot "say anything new about reality beyond what is already in the premises"; and 2) the inductive approach is limited to the empirical level (Danermark et al., 2002: 81).

However, Zachariadis et al. (2013) offer an approach to tackling the validity issue generated by the lack of criteria to assess the critical realist approach to inference – and maintain that construct validity as well as internal and external validity can be maintained. Additionally, one may note the epistemological and ontological standing of process metaphysics and the contextualist worldview – which emphasise the role of context in determining the validity of a claim. Since observations are tied to context, the critical realist approach is limited with respect to the inductive/deductive approach as it cannot achieve the level of generalisability. However, the process of abduction and retroduction utilise existing knowledge derived from prior literature (and therefore from deductive and inductive approaches) and can therefore maintain validity at the construct (e.g., generative mechanisms) level. The utilisation of abduction and retroduction also overcome the issues of formal logic employed by positivists as they rely on deducing from universal laws that suppose a determinist metaphysics (Popper, 1935/2002). Furthermore, this approach suggests that casual explanation requires support for universal laws (Donagan, 1964). However, critical realism acknowledges the notion of indeterministic metaphysics whereby social reality (and thereby messy reality) can influence the physical structures within the domain of real.

3.3.2 A Critical Realist Inquiry

This section is concerned with outlining the approach to inquiry based on the critical realist philosophy of science, and more specifically, the critical naturalism approach to social science. Several authors have proposed a formal process for critical realist inquiry (Bhaskar, 1998; 2008; Danermark et al., 2002; Mingers, 2006; Wynn & Williams, 2012; Hoddy, 2019). While various approaches have been formalised – each with a differing number of stages – a common foundation is present: 1) Description (Explication of Events); 2) Analytical Resolution (Explication of Structure and Context); 3) Abduction (Theoretical Description); 4) Retroduction; 5) Empirical Corroboration of Mechanisms; and 6) Triangulation. The following section will now provide a more in-depth examination of the specific requirements of the

critical realist inquiry based on both ontological and epistemological conditions. This will provide a rigour foundation for methodological consistency and begin the discussion for the choice of method.

Description demonstrates the initial stage in explanatory social science analysis – and usually begins in the ‘concrete’ (Danermark et al., 2002); that is, beginning with a description of events based on the exploration of prior literature (frame of reference, existing concepts, arguments, studies and historical evidence) as well as on the exploration of the empirical data (Hoddy, 2019). The explication of events is based on the notion of the ‘real’ aspect of stratified ontology and is required due to the relativist epistemology. As such, this phase of inquiry prepares for the upcoming phase of retroduction, by mapping out the transitive domain of knowledge to abstract in the intransitive domain of knowledge for subsequent knowledge creation (Bhaskar, 2008). The outcome of the initial analysis is twofold: 1) a case narrative comprised of actions and outcomes; and 2) an abstracted sequence of events that includes the social constructions of the participants (Wynn & Williams, 2012). These events may differ with respect to temporal dimensions and can include things such as “a bad year, a merger, a decision, a meeting, a conversation, or a handshake” (Langley, 1999: 693). Additionally, the production of a narrative and a sequence of events are fundamental to processual studies using a contextualist worldview (Pettigrew, 1985; Dawson 1997; Langley, 1999).

Analytical Resolution seeks to “separate or dissolve the composite and the complex by distinguishing the various components, aspects of dimensions” (Danermark et al., 2002: 109). As such, the researcher explicates the structure and context by identifying both the social and physical structures of the phenomenon as well as the contextual environment embedded within it; in addition to recognising and delineating the relationships among these components (Wynn & Williams, 2012). As with the description phase, the analytical resolution also seeks to prepare the researcher for the retroduction phase.

Abduction (Retrodiction) is concerned with theoretical description and refers to a mode of inference; specifically, one which “interpret[s] and recontextualise[s] individual phenomena within a conceptual framework or a set of ideas” (Danermark et al., 2002: 80). Hoddy (2019) refers to this as confronting data with theory. From a processual standpoint, the abduction state will utilise the ‘frame of reference’ derived from the literature review and will be used to guide processual analysis (Pettigrew, 1987). Abduction and retroduction have been used interchangeably; however, they are distinct (Danermark et al., 2002; Williams & Wynn, 2018). While both terms denote a mode of inference without explicit fixed criteria to assess the conclusion of inference – they differ with regards to their literature-data relationship (Danermark et al. 2002). Additionally, drawing on Bhaskar’s original work on realism – authors have noted that both retroduction and retrodiction are abductive processes, but that retroduction refers to the development of new mechanisms without a prior literature knowledge while

retrodiction utilises the application of theory (transitive knowledge) to infer mechanisms (Williams & Wynn, 2018).

Retroduction is the process of abstracting within the transitive domain of knowledge and seeks to identify in a counterfactual manner possible powers and tendencies of structures that interacted to generate the event within the domain of empirical – the intransitive domain (Bhaskar, 2008; Durand & Vaare, 2009; Wynn & Williams, 2012). Both retroduction and abduction are required from an epistemological standpoint of both process metaphysics and critical realist standpoints – considering potentiality/actuality and relativisms, respectively. The outcome of retroduction is twofold: 1) the identification of possible causal mechanisms; and 2) analytical and logical support for proposed mechanisms that link the structure to the events (Wynn & Williams, 2012).

Empirical Corroboration “seeks to use data from observations and experiences to ensure that the proposed mechanisms adequately represent reality, and have both sufficient causal depth and better explanatory power than alternative explanations for the focal phenomenon” (Wynn & Williams, 2012: 801). As noted, both abductive modes of inference – retroduction and retrodiction – do not have fixed criteria to assess the validity of conclusions derived from the process; therefore, corroboration is utilised to validate the existence of generative mechanisms (Wynn & Williams, 2012). The outcomes of retroduction are therefore tentative hypotheses (e.g. potential generative mechanisms) that need to be validated – in order to understand the mechanisms within the domain of the real (Sayer, 1992). Additionally, this stage has also been termed **concretisation and contextualisation** and seeks to examine how structures and mechanisms manifest themselves - by seeking to investigate how mechanisms interact at different levels to produce events (Danermark et al., 2002).

Triangulation is a stage unique to Wynn & Williams (2012) development of CR-based development and is not part of Bhaskar’s initial and original work on critical realist inquiry. While the former stage seeks to corroborate using case data, triangulation seeks to “employ multiple approaches to support causal analysis based on a variety of data types and sources, analytical methods, investigators, and theories” (Wynn & Williams, 2012: 796). While triangulation has been introduced recently in the domain of CR-based research, it has been commonly used qualitative and mixed-methods research to ensure comprehensive understanding and validation (Carter et al., 2014). While primarily proposed for mixed-methodologies (e.g. Jick, 1979), triangulation in qualitative studies can also be interpreted in linking various data (secondary and primary) to ensure consistency among the observation and the sequences of events.

The process of critical realist inquiry has specific requirements with regards to methodological approach – based on ontological and epistemological assumptions. Scholars have proposed the adoption of case study design (e.g. Easton, 2010; Wynn & Williams, 2012; Miller & Tsang, 2011; Tsang,

2014) for rigorous critical realist theorising and have proposed grounded theory analysis for the phases of retroduction and retrodiction (Danermark et al., 2002; Oliver, 2012; Hoddy, 2019). Additionally, since the explication of events requires a case narrative and a sequence of events – one can employ process sensemaking strategies to trace events (actions, outcomes, etc) over time (Langley, 1999; Van de Ven & Poole, 2005). Finally, since process studies and critical realist studies require and emphasise the use of context, a contextualist approach to qualitative studies requires a case study design (Mjoset, 2009). The following section will explore the approach to design as well as data collection and analysis from a contextualist process and critical realist perspective to ensure methodological fit and relevance.

3.4 Method

3.4.1 Case Study

A case study is an empirical inquiry that seeks to investigate phenomenon in context (Yin, 2003). Additionally, a case-based inquiry relies on multiple sources of evidence and “benefits from the prior development of theoretical propositions to guide data collection and analysis” (Yin, 2003: 14). Indeed, the case study design is the primary and dominant approach to contextualist, process-based and critical realist inquiry in a qualitative setting. The truism is based on the fact that the depth of context and focus obtained from case study research fulfils the requirements of contextualist processual studies as well as following the critical realist inquiry. Specifically, the need to embed phenomenon in context, the need to identify sequence of events over time within that context as well as the need for multiple data sources to validate mechanisms. The following section will now uncover the processual and realist implications, as well as subsequent design principles derived from those implications.

3.4.1.1 Processual & Contextualist Implications

This subsection seeks to outline the processual and contextual implications for case study research. The duality of process and contextualist interpretation is one of synergy – philosophically speaking. From an ontological position, both emphasise the centrality of time, while from an epistemological position, the need for context. The case study design is attractive due to its ability to portray ontological reductionism – by reducing the phenomenon into events, a specific unit of analysis. Contextualists term these *incidents* and that these “acts or events are intrinsically complex, composed of interconnected activities with continuously changing patterns” (Pepper, 1961: 233). Therefore, case studies need the ability to make sense of these incidents – and thus context and time are central. Simultaneously, process and contextualist studies are holistic in nature, and therefore also denote the need for case reconstruction to link the units of analysis using causal relationships (Mjoset, 2009). Overall, the following section will draw on prominent process-context scholars with the aim of understanding the requirements and prerequisite for proper case work conduct. These will have implications for the method.

As per Pettigrew (1985a: 238-239), contextualist analysis requires four prerequisites: 1) a set of levels of analysis (vertical and horizontal); 2) a clear description of the process or processes under examination; 3) a motor (generative mechanism; set of theories) that drives the processes; and 4) the contextual categories must be linked between the levels of analysis. Additionally, contextualist process studies need to be longitudinal (Pettigrew, 1990) with regards to the time horizon. Finally, Pettigrew (1997: 343) notes that “[p]rocess research is best characterised in terms of cycles of deduction and induction” – which reflects an abductive iteration of inference, similar to retroduction and retrodiction in the stages of critical realist inquiry.

Furthermore, in attempting to answer ‘What is Process Analysis’ – Pettigrew (1997: 388) notes that the purpose is “describing, analysing and explaining the what, why and how of some sequence of individual and collective action”. The purpose driving the requirement for processual conduct of research is underpinned by many assumptions outlined in the philosophy section that argues that the world is not static – but rather dynamic. Therefore, the aim of processual analysis is to ‘catch reality in flight’. Pettigrew (1997: 340) offers guiding assumptions required in the method for conducting processual research: 1) embeddedness – studying process using multi-level analysis; 2) temporal interconnectedness – studying processes in a longitudinal manner; 3) the centrality of context; 4) a search for holistic as opposed to linear explanations of process; and 5) the need to link processual analysis to the location and explanation of outcomes.

Another process-context scholar, Dawson (1997), offers critical reflections on the conduct of processual research and analysis. Apparent from the reflections on the nature of process research is the centrality of time and context. Process research by nature adopts a longitudinal time horizon which allows organisational phenomenon to be analysed in a retrospective and real-time manner – which has implications for both data collection and subsequent analysis. Dawson (1997) draws on three main facets of processual research. Firstly, processual research requires ‘getting your hands dirty’. Dawson (1997) notes that this type of research approach is based on tacit knowledge and therefore requires being fully immersed in the case organisation. Secondly, longitudinal design needs to be implemented into the case design – and has implications for data collection and analysis. Finally, Dawson (1997) points to the multifaceted nature of case study data – outlining the need for combining observation techniques with in-depth interviewing to aid processual analysis.

Finally, it should also be noted that case studies require a case narrative to illustrate the process over time. However, caution should be exercised. Buchanan & Dawson (2007: 696) argue that monological research accounts of organisational change fail to account for the dynamic and polyvocal narratives of strategic change phenomenon – and therefore call “for more fully informed case studies that combine elements of a narrative approach with processual/contextual analysis”. Monological narratives are problematic in three areas: 1) “the concept of language as merely mirroring reality has been

undermined by the view of discourse as constituting meaning, challenging the notion of unbiased researchers producing impartial accounts” (Hatch, 1996; Van de Ven & Poole, 2005); 2) “several studies reveal how different stakeholders provide contrasting versions of the same change events” (Brown, 1998; Fincham, 2002); and 3) “research narratives can be authored with different voices or styles” (Hatch, 1996; Rhodes, 2001; cited in Buchanan & Dawson, 2007: 673). In line with CR-based thinking, multiple sources are required to offer a multi-perspective approach within the narrative – which will draw on both secondary and primary data. Two practical insights are offered: 1) interpretative process theory is proposed to ‘expose multiple realities’ – to identify various perspectives on the social construction of the organisational change phenomenon; and 2) normative process theory is proposed to ‘codify practical guidelines’ – to guide the researcher in identifying irrelevant (e.g., unhelpful, confusing, unverifiable, un-codifiable, non-cumulative) data (Buchanan & Dawson, 2007: 680).

3.4.1.2 Realist Implications

This section is concerned with outlining the realist implications for case study research. It should be noted in advance that several authors have specifically addressed the advantages of the use of case study methodology in the critical realist and information systems context (Easton, 2010; Wynn & Williams, 2012; Tsang, 2014). Additionally, Perry (1998: 787) notes two reasons why critical realism is the preferred paradigm for case study research: 1) case study research is pre-paradigmatic, in the sense that it requires both inductive theory building and deductive logic – and therefore is aligned with the abductive processes of retroduction and retroduction; and 2) realism is not prone to the limitations of relativism posed by constructivism and critical theory as it maintains an objective external reality. The following section will outline: 1) realist implications for method in general and case method specifically; and 2) issues concerning generalisability.

Sayer (1992) notes that critical realism offers flexibility with regards to methods adopted – but commonly are categorised into two parts: extensive and intensive research designs. Termed by Harre (1979), these distinctions determine the type of research question adopted as well as the method employed to test the question – as well as determining the boundary of the phenomenon under investigation. While the extensive research design seeks to discover common properties and general patterns of a whole population, intensive approaches to design seek to ask questions concerning the causal process within a particular case or limited number of cases (Sayer, 1992: 242). The study will adopt an intensive approach, and will therefore ask: “How does an organisational change emerge, develop, grow or terminate over time?” (Van de Ven & Huber, 1990: 213). Furthermore, this approach will impose causal groups over taxonomic groups and therefore provide explanation of causality by identifying the production of certain events (Sayer, 1992). In conducting a study of agents in their causal contexts, a qualitative approach will be taken that emphasises the use of interviews and tests the validity through empirical corroboration (Sayer, 1992).

Easton (2010: 123) notes that a “critical realist case approach is particularly well suited to relatively clearly bounded, but complex, phenomena such as organisations, interorganisational relationships or nets of connected organisations”. As such, the design will require clear units of analysis (boundaries) within the larger suprasystem – which will also guide the interorganisational relationships between those units/groups and their respective interaction that produce certain actions and events. Another implication of this approach is the retroductive approach to the collection data – cycles of deduction and induction until epistemological closure – where multiple entries into the case organisation(s) are required until the phenomenon is fully understood (Easton, 2010).

Regarding generalisability, findings derived from case study design are questioned regarding their legitimacy. However, Tsang (2014) offers insights by arguing that critical realism (as opposed to positivism and interpretivism) enables case study research to generalise at the empirical and theoretical level as well as offering the ability to test theory. Walsham (1995ab) offers insights into generalisability of interpretive ICT case study research by drawing on Bhaskar’s scientific process – which argues that social sciences can achieve generalisability using a similar methodology as the natural sciences. Four types of generalisations are proposed: development of concepts, generation of theory, drawing on specific implications and contribution of rich insights (Walsham, 1995ab). Using examples, Walsham demonstrates that ICT case studies have developed concepts and generated theories that are applicable in the wider domain of research and can contribute concepts to differing domains – therefore, suggesting that interpretive ICT case study research does offer generalisability at the levels of theory. Thus, these arguments are based on the notion of ‘transferability’ – where Lincoln & Guba (1985) illustrate that generalisability is impossible in interpretivist research; however, an accumulation of ‘working hypotheses’ through the idiographic approach can offer great understanding of differing versions of social reality (Lincoln & Guba, 1985, Denzin, 2001).

Finally, Tsang (2014) discusses case study generalisation using the critical realist perspective in the context of information systems research – and makes the case that critical realism acknowledges the role of case study research in generalisability; especially, when considering the ontological and epistemological positions. As Tsang (2014: 183) clearly outlines: “The aim of empirical generalisation is to study the demi-regularities observed in the empirical domain while that of theoretical generalisation is to understand the generative mechanisms in the real domain that produce the regularities. Fallibility of knowledge implies that once a theory is created we need to subject it to further empirical tests, and case studies are a suitable way of conducting such tests”. Therefore, case study research is useful in testing prior mechanisms identified in literature – if they are valid mechanisms, they hold up in various contexts.

3.4.1.3 Design

As outlined in the earlier section, the research design is one of a critical realist longitudinal case study that seeks to explain the dynamics of strategic alignment in the public sector context. Therefore, the following section will examine the nature of longitudinal research to explicate the study's time horizon, level of analysis as well as unit of analysis.

3.4.1.3.1 Time Horizon

It has been acknowledged throughout the methodology section that this study seeks to incorporate the centrality of time. Therefore, this research is by nature longitudinal. Longitudinal research is defined as: "research emphasising the study of change and containing at minimum three repeated observations (although more than three is better) on at least one of the substantive constructs of interest" (Polyhart & Vandenberg, 2010: 97): three is a prerequisite for longitudinal research as a single observation is static (cross-sectional) while two observations (T_1 to T_2) is linear. The longitudinal design will adopt both a retrospective lens of past events as well as real-time approach to allow for increased accuracy in the reconstructing of events in addition to causality of events (Leonard-Barton, 1990) – since the ICT2020 Strategy Development process is on-going. The primary aim of longitudinal field studies is to generate and develop theories of change processes (Ahlstrom & Karlsson, 2016). The following section will now discuss: 1) longitudinal time frames; and 2) the notion of time.

Longitudinal field studies, as noted by Ahlstrom & Karlsson (2016), are particularly well suited to research change processes and answer the question "How does organisational change emerge, develop, grow or terminate over time?" (Van de Ven & Huber, 1990: 213). As such, the research focus and research question are fundamental for the subsequent study that is being conducted. Additionally, this type of research requires a framework – not for the creation of pre-formulated theoretical propositions; but rather used as "a telescope, pointed towards the organisation to direct the researcher's attentions towards some particular aspects" (Berg, 1974; cited in Ahlstrom & Karlsson, 2016: 207). Contextualist process studies that are longitudinal in nature adopt a 'frame of reference' to guide the inquiry (e.g., Pettigrew, 1979). The proposed study will use the 'frame of reference' and literature on social-intellectual alignment to narrow the scope of the study as well as to guide the data collection and subsequent analysis. No formal propositions are made. Rather, key components of the phenomenon are acknowledged based on prior literature – useful for informing the agenda. Setting up a longitudinal field study also requires the need to outline units of observation (Leonard-Barton, 1990). Since this study is focused on strategy, as a process composed of decisions and events, the unit of observation will seek to map out the events and decisions as they unfold over time in context.

Time in the study of change takes two forms: 1) time as setting; and 2) time as sequence; both of which infer about the nature of causality. These two interpretations are grounded in the time-space relationship and offer insights into the casual relationship between events and actions. The first

interpretation (time as setting) “refers to temporally limited structural patterns” where the “emphasis is on a configuration of many patterns within a particular time period” (Heirich, 1964: 388). The analytical value of the time as setting interpretation is its ability to evaluate individual events or actions in relation to the larger pattern as opposed to treating events individually and unrelated. The second interpretation (time as sequence) seeks to “establish a relationship in the context of consecutive time periods” and allows one to distinguish between unordered sequence (sequence of events without causal relationship), ordered sequence (causal relationship between sequence of events) and configurational sequence (multiple events occurring simultaneously (Heirich, 1964: 388)). These two perspectives on time are essential for change research, since it allows one to understand how organisations transitions from periods of ‘stability’ to periods of chaos. From a GST perspective, this refers to bifurcation and is consistent with the quantum change theory as well as the emergent perspective on strategic change and development (Thietart & Forgues, 1995). Additionally, this lens can assist in understanding progression, whether unitary, multiple or convergent processes (Van de Ven, 1992). Research on strategy and change has consistently showed that the process is not linear, and thus is composed of multiple and simultaneous development processes occurring at multiple levels. Acknowledging these statements also allow for non-linear tracing through linking micro-level process with macro-level outcomes and vice versa (Kouame & Langley, 2018). To conclude, a dynamic interpretation of organisations requires the centrality of time and can be used as an anchor point to pinpoint the unit of analysis for analytical purposes. It can also embed agency and event causality to specific ‘incidents’ and outcomes to allow for sensemaking of processual data (Langley, 1999).

3.4.1.3.2 Level & Unit of Analysis

This thesis seeks to adopt a multi-level approach to conduct and causality investigation; seeking to examine the individual (micro), group (meso) and organisation (macro) levels. Longitudinal processual research by design argues that diachronic process inquiry needs to recognise embeddedness – thus “studying processes across a number of levels of analysis” in “search for holistic rather than linear explanations of process” (Pettigrew, 1997: 340). The following section will now introduce concepts vital to the execution of multi-level research, clarify the ‘levels’ based on systems theory as well as communicate the micro-macro bridges.

Central to multi-level research are the notions of focal level, level of measurement and level of analysis (Rousseau, 1985). The focal level of interest in this research is at the group level – specifically, the groups (e.g., Steering Committees and Development Groups) responsible for strategy formation. While group-level (meso) is of primary interest, the individual (micro) and organisation (macro) levels will inform the group-level. The framework for this approach requires the acknowledgement of interaction mechanisms, which are comprised of top-down and bottom-up mechanisms (Costa et al., 2013). For example, micro-meso interactions are bottom-up, where the individual behaviour can (potentially)

influence group dynamics and outcomes. In contrast, the macro-meso interaction is a result of top-down, where power dynamics and institutionalised values and knowledge can influence group dynamics, and subsequently determine and alter the social and intellectual aspects of alignment. The level of measurement (and therefore, analysis) requires to both primary and secondary data that can be attributed to characterise and inform the specific levels of interest. The data analysis section will classify specific themes and datapoints into levels to provide a concise approach to interpretation and reflection.

3.4.1.4 Case Selection

This section is concerned with 1) examining the utility of utilising a single case-based approach; and 2) arguing for the selection of the *Department of Foreign Affairs and Trade* for the case study. Due to the nature of the research approach, namely one that seeks to trace the longitudinal nature of strategy formation over time in context, a case-based approach is highly relevant and suitable (Pettigrew, 1990, 1997; Dawson, 1997). Additionally, a critical realist-based approach to scientific inquiry has also recommended the use of case studies to best investigate underlying mechanisms (Easton, 2010; Wynn & Williams, 2012; Tsang, 2014). Finally, several scholars in the domain of information systems have also stressed the unique insights gained when employing case studies (Benbasat et al., 1987; Orlikowski & Baroudi, 1991; Walsham, 1993; Carroll & Swatman, 2000).

In order to explore the dynamics of social-intellectual alignment, an in-depth understanding is required. Indeed, the rise of qualitative case study designs has arisen due to the necessity of understanding organisational reality that is typically overlooked positivist-based approaches to inquiry (Orlikowski & Baroudi, 1991; Street et al., 2018); such as, ‘muddling through’ and ‘tinkering’ (Vitale et al., 1986), improvisation and ‘bricolage’ (Orlikowski, 1996; Ciborra, 1998). This argument has also been pushed forward in the strategy domain, where scholars have argued for the use of contextualist case studies to understand the processual nature of strategizing – which incorporates dynamic features such as emergence and inertia – where an extensive review on strategy process research has declared that “longitudinal research gains more and more momentum offering a better understanding of causal relationships” (Hutzschenreuter & Kleindienst, 2006: 702). Case study research is therefore imperative as it allows for in-depth longitudinal investigations.

However, single-case study designs have received criticisms due to their lack of generalisability. Many researchers taking a positivist approach have argued that an N=1 sample is small; for example, Eisenhardt (1989) proposing the utilisation of four to ten cases. It infers a positivist epistemological stance in that it relates the number of cases to the quantitative research notion of sampling – as a way of explicating the generalisability of findings across multiple cases (Easton, 2010). Dyer & Wilkins (1991: 614) note that Eisenhardt endorsement of using ‘mini-cases’ to allow for “comparisons across organizational contexts, the classic case study researcher tends to focus on comparisons within the

same organizational context” – thus leading to a trade-off between deep understanding a particular phenomenon (e.g., SA) against the advantages of insights derived from case comparison. However, this need not be a trade-off at all since these arguments were put forth from the interpretation of traditional paradigms. Tsang (2014) takes a critical realist perspective in ICT case-based research and recognises that scholars using this approach can significantly allow for generalisations – both theoretical and empirical – as well as a creating a tool for theory building. The reason being, single-cases designs can allow for generalisation through the identification of ‘rigorous and defensible mechanisimic explanation’ (Volkoff et al., 2007; Bygstad & Munkvold, 2011) as well as identifying new theoretical constructs (cited in Tsang, 2014). Similarly, Lee (1989) identifies that the MIS field has a strong tradition for single case-based research where he offers solutions for previously suggested issues related to single cases – such as deductions, replicability and controlled observations. The proposed research program will make use a single-case study as it allows for a more in-depth approach into the context of the phenomena.

While positivist inquiry argues for random sampling to ensure the possibility of making inferences about a population, case-based research requires a selection approach since random sampling is not viable (Seawright & Gerring, 2008). Yin (2003) outlines the following types of single case study rationales: 1) critical case; 2) extreme or a unique case; 3) representative or typical case; 4) revelatory case; or 5) longitudinal case. Firstly, the DFAT is a unique case in that it is currently undergoing an organisation-wide ICT strategy development in the public sector context in Ireland. Secondly, a case is revelatory “when an investigator has an opportunity to observe and analyse a phenomenon previous inaccessible to scientific investigation” (Yin, 2003: 42). The researcher has access not only to the DFAT but also to individuals with immense knowledge of how the ICT strategy was developed and subsequently implemented – which is of high value in terms of generating relevant insights for theory development. Finally, the last rationale (longitudinal) for selecting the single-case is the interest and necessity to understand how the strategy process changes over time in context. Overall, the selection of DFAT illustrates the potential value that can be gained.

3.4.2 Approach to Inquiry

3.4.2.1 Collection of Data

This section will outline the data collection protocol and composition. The data obtained is composed of both primary and secondary data; primary data derived from interviews and observations while secondary data is provided by the case organisation, *Department of Foreign Affairs and Trade* (DFAT). The data obtained seeks to inform both pre- and post-development of the DFAT’s ICT Strategy 2018 – 2020.

A semi-structured approach to interviewing is adopted, deriving benefits from a hybrid approach between both open-ended and closed question extremes. Additionally, the ability to probe will be utilised to clarify and provide explanatory statements to answers of interest; as well as facilitating comparability among data obtained from participants (Barriball & While, 1994; Irvine et al., 2012). Interviewing is one of the most vital data sources in case study research (Yin, 2003) and separates itself from alternatives by “generat[ing] deeply contextual, nuanced and authentic accounts of participants’ outer and inner worlds” (Schultze & Avital, 2011: 1). Additionally, interviews allow the researcher to gain rapport and develop a relationship which often leads to trust – eventually allowing for deeper insights (Denzin, 1989; Patton, 1990; cited in Barriball & While, 1994). This trust will also allow for additional secondary data collection via snowballing means. Observations will be utilised in conjunction with the interviews to ‘use our eyes as well as our ears’, which can inform settings in the field work as well as provide additional context to the situation as well as responses from interviewees (Mulhall, 2003; Baker, 2006).

Since the research is exploratory in nature, the initial aim of the interview is to allow the interviewee to speak freely on the ICT2020 strategy development process. This allows the researcher to obtain information without guidance – thus letting the themes emerge ad hoc. Following the initial discussion on the process, a series of open questions were asked to elicit greater understanding of a certain theme as well as to clarify certain aspects to ensure accuracy and understanding.

The secondary data obtained from the DFAT encompasses a timeframe from March 15th 2016 to August 13th 2019, and consists of 145 documents. The documents can be categorised into the following: 1) meeting minutes of committees involved in the ICT2020 strategy development process; 2) issue and priority identification from the management board, various DFAT functional units, as well as from Missions abroad; 3) multiple versions and iterations of the ICT Strategy Framework and ICT Action Plan; 4) Workshop agenda and working notes; 5) Mid-Term Strategy Reviews; 6) documents pertaining to the ICT Strategy implementation; and 7) Other, documents and presentations that provide further contextual data to fully understanding the process. Additionally, these secondary sources identify 83 individuals from the DFAT that are involved in the process and are useful in identifying participants for the interviews. The large quantity of documents is also high in quality and therefore useful in developing the case narrative for the study.

3.4.2.2 Analysis of Data

The analysis of data was executed using a narrative strategy as well as Grounded Theory Method (GTM). A narrative is a sensemaking strategy for process data (Langley, 1999) and supports the aim of process research – to ‘tell the story’ of the phenomenon under investigation (Pettigrew, 1990). GTM is an analytical coding technique that makes sense of thematic areas and commonly used for inductive theory building (Charmaz, 2006). Both the narrative and GTM approaches are aligned with the research

approach and satisfy the ontological and epistemological assumptions for critical realist inquiry (Danermark et al., 2002; Wynn & Williams, 2012; Hoddy, 2019). The followings section will now outline: 1) the narrative approach; and 2) the analytical GTM approach with regards to the formal process for critical realist inquiry (Bhaskar, 1998; 2008; Danermark et al., 2002; Mingers, 2006; Wynn & Williams, 2012; Hoddy, 2019).

Narrative strategy is fundamental to contextualist studies and “almost all process research involves recourse to this strategy at some point” (Langley, 1999: 695). Pettigrew (1990) refers to this approach as the ‘analytical chronology’ which support the illustration of the data by clarifying sequences of events across levels of analysis as well as identifying analytical themes and establishing potential causal linkages between the levels. Fundamentally, agency and event causation can be initially outlined – as “Narrative is a form of ‘meaning making’... Its particular subject matter is human actions and events that affect human beings, which it configures into wholes according to the roles these actions and events play in bringing about a conclusion... The narrative scheme serves as a lens through which the apparently independent and disconnected elements of existence are seen as related parts of a whole” (Polkinghorne, 1988: 36). Overall, the narrative will present a temporal and multi-contextual dimension of the phenomenon containing key ‘incidents’ (events) that shape the strategy development process, as well as outlining the key entities (groups) and actors involved.

It should be noted that this study seeks to employ GTM as an analytical tool, rather than the methodological approach. As such, GTM is strictly a sensemaking approach that identifies relevant codes from qualitative data. This approach is utilised in an exploratory fashion and seeks “to discover what is going on, rather than assuming what should go on” (Glaser, 1978: 159). Coding techniques used are: open, In Vivo, axial, focused and theoretical. The aim of open coding is to initially explore, as seek to inductively examine the data – and ask, ‘What is this data a study of?’ (Glaser, 1978; cited in Charmaz, 2006: 47). In Vivo coding refers to interviewees ‘special terms’ – and, are typically context specific – which can act as an analytical point of departure as well as preserving meaning (Charmaz, 2006). Building on open coding, focused coding seeks to analyse and examine larger segments of text after having initially identified smaller themes within literature. Axial coding then, builds coding along the ‘axis’ of smaller themes and seeks to identify relationships among them (Charmaz, 2006). While the 1st stage of coding seeks to break down the text, the 2nd stage – and more specifically theoretical coding (following from axial coding) seeks to ‘weave the fractured story back together’ (Glaser, 1978: 72) and is therefore used in theory building to link concepts (Charmaz, 2006); and potentially link them to theory outlined within the literature review.

CR Stages	Demands	Analytical Techniques
1. Description	- Illustrate the sequence of events with context - Identify timeframe and major events - Identify 'critical incidents' within the timeframe - Identify key actors and groups - Description of structural entities and contextual conditions, and changes to these	Narrative Strategy Temporal Bracketing Open Coding (By Incident)
2. Analytical Resolution	- Identify and code specialised terms used in interview transcripts - Identify groups of codes and their relationship to other thematic areas	In Vivo Coding Axial Coding (Part 1)
3. Abduction (Retrodiction)	- Focus coding on specific objects/events of interest. - Identify categories (set of codes) and link with concepts of literature to determine 'In Vivo' concepts.	Focused Coding Theoretical Coding Axial Coding (Part 2)
4. Retroduction	- Validate mechanisms grounded in data with theoretical literature.	N/A
5. Empirical Corroboration	- Assess explanatory power of proposed set of mechanisms.	N/A

Table 2: Critical Realist-Based Approach to Analysis

Table 2 displays the proposed critical realist-based approach to data analysis, as outlined in the prior section and primarily based on Wynn & Williams (2012: 796) 'methodological principles of critical realism'. The first stage is concerned with outlining the sequence of events and thus refers to the case narrative. The aim is to identify boundaries, major events as well as key actors and groups involved in the ICT2020 strategy development process. Additionally, the narrative seeks to provide the foundation for subsequent stages to analyse the interview data. The following stages engage in 'coding' that is aligned to the critical realist methodology. The intent is to identify generative mechanisms. This process is outlined in greater detail in Section 3.6.3.

3.5 Replication & Process

This section seeks to outline the research process undertaken from a method perspective, whereby the stages of inquiry are outlined to offer a degree of replications and to elaborate in greater detail the how the critical realist stages were carried out in Table 2. The ambition is to offer other scholars a

degree of replications to conduct the research in an alternative context or alternatively, to adopt the method for an examination of a different organisational phenomenon. As illustrated in the literature review (Section 2.3.3), strategic alignment is occasionally fraught with inconsistencies regarding the methodological approach taken – specifically, the statistical methods deployed to measure alignment through constructs. This has led to some authors stating positive benefits (i.e., performance increase) while other studies have shown the opposite. The following section will therefore outline a stepwise process to offer guidelines for reproducibility to ensure that the theoretical framework presented here can be extended and replicated. However, a note of caution is required due to the unique nature of the case study as well as the high-level access granted to the researcher by the organisation – which has an ultimate impact on the degree of data collection permissible regarding documentation and management / staff interviews.

Stage 1: Case Selection

This stage is concerned with the selection of a case study for the examination of an organisational phenomenon that exhibits aligning dynamics – often, reflective of organisation-wide strategic change initiatives. While case selection in cross-case structures and methods has received attention and strong guidelines and frameworks (Sekton, 2004; Seawright & Gerring, 2008), single case selection is primarily driven by perceived impact that case has on answering the research question through explanatory or exploratory means – whereby these cases are defined as critical, extreme, unique, revelatory or as a prelude can to offer exploratory inquiry (Yin, 1994). To add, case selection from a pragmatic standpoint should also consider ease and depth of access; for example, while an identified case seems particularly suited, that degree of access required to fulfil critical realist contextual requirements may not be permitted.

The first order of selection was selecting a case of an Irish PSO – Ireland due to geographical proximity and area of study and a PSO due to lack of research on strategic alignment within the PSO domain. Prior to selecting the Department of Foreign Affairs and Trade as a case organisation, two other cases were screened as potential candidates: Irish Rail – a public-private organisation and the Department of Enterprise, Trade and Employment. While both cases exhibited organisation-wide strategic change – as part of a wider government mandate for reform – the former was a hybrid structure and therefore may differ from pure PSO characteristics while the latter did not offer sufficient access into the Department to facilitate in-depth contextual examination of the organisation phenomenon. Therefore, the DFAT was selected as a case organisation as it offered deep access and engagement with organisational members with interviewees including the Secretary General, Director Generals and Ambassadors as well as middle management.

Furthermore, the case was relevant from a timing perspective, whereby the ICT2020 Strategy was on-going and therefore 'fresh' in the minds of the interviewees. A secondary benefit is that the ICT2020 strategy indeed focused primarily on the business-ICT relationships whereby the ICT Unit played a crucial role in the change initiative and therefore offered critical insight into the dynamic. Therefore, the access offered is characterised as an empirical contribution as the DFAT is inaccessible to scientific investigation of other scholars. The introduction was facilitated by the supervisor of this thesis, Dr. Joe McDonagh who allowed the researcher to establish contact with the CFO and Head of ICT, both critical participants who coordinated the strategy.

Stage 2: Data Collection

Data collection for the longitudinal processual study is comprised of two main components; first, secondary data – such as internal documents (i.e., emails, newsletters, strategy artefacts, programmes, meeting minutes and diverse), external documents (i.e., central government programmes and strategy artefacts) as well as Irish-specific PSO research into the DFAT and auxiliary organisations; and secondly, primary data collection in the form of extensive interviews over an extended period.

The secondary data was used to provide an initial understand of the organisation and its environment – which acted as the ideal foundation on which to conduct research prior to commencing the interviews as questions were generated from the gaps in understanding. Furthermore, the secondary data provides the foundation for the case narrative and information required to map out the initial large/major events over the specific time period. It should be noted that this process was somewhat creative in nature, whereby documents were read, their time noted (i.e., either precise time, general year or linked to a specific other event) and descriptions made. Overtime, patterns started to emerge whereby the researcher was able to map out the main events and tie them in, as well as understand what projects were related to what events, and what strategies emerged from specific actors. This initial understanding offered a fruitful preliminary narrative that guided the interviews. Furthermore, the preliminary narrative needs to be viewed through different lenses – such as the business or ICT side as polyvocal narratives merged, and different documents offered differing accounts of the projects. For example, business units would often see the outcome while the ICT managed the infrastructure that resulted in the outcome that offered business utility. Therefore, some retrospective training was required to understand what business was referring to from an ICT context.

A hybrid structured interview protocol was developed as it was bested suited for this particular research project. The interview questions consisted of the following three categories: 1) general questions about the individual's role, unit and involvement with the ICT Strategy; 2) specific questions regarding the role, unit and ICT strategy from their function's perspective whereby these questions

were derived initially from the secondary data analysis but were amended based on other interviewee answers; and 3) probing questions based on the answers given for the other two categories of questions. The interview answers and content were not recorded, due to the sensitive nature as well as granting the interviewees the freedom to discuss the projects, strategies and other organisational factors without needed to be diplomatic.

Stage 3: Data Analysis

The data analysis within this research utilises a narrative analysis and temporal bracketing strategy to delineate events and phases to understand how they unfold overtime in context while also using a grounded theory strategy to identify mechanisms derived from primary data. These three components are vital in developing a critical realist longitudinal case study.

The narrative analysis strategy was uses time as an anchor point whereby stories, meanings and mechanisms emerged as part of the sensemaking approach (Langley, 1999). The narrative analysis commences with secondary data to pinpoint the events that unfolded and seeks to create a story of how the DFAT's business and ICT unit developed overtime in context. The temporal bracketing strategy breaks down the narrative into further processes that took place, whereby these processes are bounded and breaking into precise phases. This facilitated the writing and categorising of Chapter 4 into three distinct phases across the examined timeframe. The breaking down of time allows for the understanding and presentation of business-ICT into unique phases during DFAT's history that offer distinct characteristics and organisational attributes.

The grounded theory strategy was designed to extract mechanisms from the primary data, whereby codes emerged throughout the data – which resulted in 1st order and 2nd order codes. The 1st order codes emerged through statements and themes presented within the interview data that were linked and categorised to form 2nd order codes. These were then aggregated to some theoretical form that matches literature – and through them, the mechanism emerged.

Stage 4: Presentation of the Framework

After having conducted the analysis, the mechanisms identified are to be presented within a framework to illustrate an overview of structural, social and technical alignment mechanisms – across the ICT2020 strategy development phases, the phases of which were also established through the analysis process. While there is no prescribed form in which to visualise frameworks, the tabulated presentation whereby mechanisms are presented on the y-axis and phases on the x-axis give a strong overview of relevant mechanisms during specific phases. This style can be adopted for future students as it facilitates an understanding of how specific mechanisms are present or enacted within certain processual phases.

3.6 Conclusion

Chapter 3 focuses on the methodology of the research programme. It's vital to acknowledge the emphasis on accommodating processual research requirements. Section 3.2 outlines a philosophical discussion with an emphasis on process metaphysics to make the case for a pure process-based research programme that is best suited for conducting research that captures dynamic phenomenon in complex organisations. The discussion sets forth a case for selecting ontological and epistemological positions and guides the decision to adopt critical realism as a philosophical position on which to base the method. While traditional paradigms are selected a priori, here the processual debate guides the decision and argues that critical realism is the most suitable paradigm based on theoretical requirements. Section 3.3 outlines the key positions adopted and illustrate how these positions are aimed at identifying mechanisms. Section 3.4 outlines the method, by applying critical realist requirements and therefore make the case for case study research. Finally, Section 3.5 delineates the stages of method for the purpose of reproducibility and rigour.

Chapter 4: Narrative

4.1 Introduction

Chapter 4 is concerned with the narrative and constitutes the initial part of the longitudinal processual research design by outlining the relevant event history of ICT strategy development taking place in the Department of Foreign Affairs. The ambition is to uncover alignment mechanisms through the tracing of the strategy work at the Department and constitutes a pre-analysis of the primary data (Appendix 1) and secondary data (Appendix 12) by constructing a narrative and thereby visualising the mechanisms 'in action'. It should be noted that the analysis conducted only utilised time as an anchor point, rather than using theoretical foundations to structure narrative and as such, acts as a preparation for the grounded theory coding. Furthermore, this chapter will provide foundational understanding by making sense of the key actors and events within the specified timeframe, between 2000 and 2020.

The secondary aim of the narrative strategy as a form of sensemaking is to acquaint the reader with the rich history of the organisation in addition to other contextual factors useful in understanding organisational-related and technological-related strategy development. Additionally, the narrative chapter acts as a book of evidence to support the subsequent development of a process model of alignment and to answer: how does strategic alignment unfold overtime in the context of PSOs?

Chapter 4 is composed of three separate but interrelated parts: Section 4.2 will outline the historical, institutional, organisational and technological context of the Department. History matters, and that is why the context section provides understanding of the internal and external system in which the

Department is embedded. Sections 4.3 and 4.4 will delineate key events of ICT-related strategy development in the wider operating context of the organisation from 2000 to 2015. The aim of this section is to offer insight into the prior workings of strategising and act as a comparative tool to the primary focus of the study – that is, the ICT2020 Strategy and its development process. Furthermore, this section illustrates the challenges faced by key entities and tells a story of struggle in relation to management practices while simultaneously celebrating the Department's ability to achieve world-class diplomacy. Finally, Section 4.5 will present the ICT2020 Strategy Development Process (ICTSDP) in a coherent manner by pin-pointing a series of organisation-wide engagement and collaboration pertaining to the development of ICT Strategy. Furthermore, the activities and processes pertaining to the ICTSDP reflect a significant shift in how strategy work is conducted within the Department and illustrates how the organisation is attempting to overcome barriers from past dynamics examined in the prior section. A visual overview of the chapter's structural components is presented in Table 4 below.

4.2 Context

4.2.1 Historical Context

The Department of Foreign Affairs (formerly, Department of External Affairs from 1924 – 1971; hereafter, the 'Department' or 'DFA') is the Foreign Ministry of Ireland and is one of the oldest institutions in the country. George Plunkett was appointed as Ireland's first foreign minister a day after the first sitting of Dáil Éireann on January 21st, 1919, where not only did Ireland declare Independence but also crafted a message to the world (dfa.ie, online). Since then, the DFA has played both a central and crucial role over the last century. The Department of External Affairs was formally established on June 2nd of 1924 with the Ministers and Secretaries Act of 1924 - during which, 11 departments were formed. Their mandate is as follows:

"The Department of External Affairs which shall comprise the administration and business generally of public services in connection with communications and transactions between the Government of Saorstát Eireann and the Government of any other state or nation, diplomatic and consular representation of Saorstát Eireann in any country or place, international amenities, the granting of passports and of visés to passports, and all powers, duties and functions connected with the same, and of which Department the head shall be, and shall be styled, an t-Aire Gnóthaí Coigríche or (in English) the Minister for External Affairs." (Ministers and Secretaries Act, 1924, Part 1, Section 11).

Initially, the role of the Department in the overall Government agenda was rather limited and focused on actions related to constitutional diplomacy (Tonra, 1999). George Plunkett was appointed as the first Minister for Foreign Affairs who was tasked with engaging with the League of Nations for the remaking of Europe after WWI (dfa.ie, online). During the conversations of the peace conference in

Paris, Ireland was not yet recognised by other nations – until the Anglo-Irish Treaty of December 1921. In 1923, the Irish Free State became a member of the League of Nations where its sovereignty was established and recognised. From here on, Irish foreign policy was established, and the organisation grew by sending envoys around the world and establishing the first embassies in Europe and the United States.

The Irish Free State was declared a Republic in 1948, and now the role of the DFA started to become more significant regarding its relationship with the British Commonwealth as well as the League of Nations. In 1956, Ireland joined the UN – which led the DFA's role to be broadened in scope (Tonra, 1999). Starting in the 1960s, the role of the Department was further developed by attempting to join the EU – first by applying for the EEC in 1961 and 1967. In 1970, the negotiations formally commenced with the EEC and Ireland where Ireland finally joined in 1973 (DFA, 2019). After this, the DFA became a powerhouse. While having one of the smallest populations globally, the DFA carried out the EU presidency five times between 1975 and 1996 and two more times in 2004 and 2013. Furthermore, Ireland has also successfully achieved non-permanent membership roles on the UN security council four times – winning more votes in comparison much larger nation states during the election process. Overall, the DFA has become a powerhouse of diplomacy. As noted by The Economist (2020), Ireland is the most powerful country on a per-capita basis from a diplomatic standpoint.

Following change in Government Policy the Trade function of the Department of Enterprise, Trade and Innovation was transferred under the command of the DFA in 2011 – and then transferred back to the original department in 2020. According to the *Statutory Instrument* (No. 247/2011), the powers of the 'Promotion of Foreign Trade' was transferred to the DFA and therefore took on the responsibility to develop the Government's strategy in relation to the "promotion and development of overseas trade, tourism and investment consisting of: a) managing and chairing of the Foreign Trade Council; b) convening, chairing and managing joint economic commissions; and c) developing, where appropriate, new joint economic commissions (S.I. NO. 247/2011 Section 3 Part 1). During this time, the DFA had responsibility for developing a strategy and action plan for Irish Trade, Tourism and Investment from 2011 to 2015 – which meant the reallocation of Departmental resources and the creation of new roles and functions. In 2020, *Statutory Instrument* (No. 382/2020) changed the name back to Department of Foreign Affairs.

Overall, the role of the Department is to promote Ireland's foreign policy, values and interests abroad through both bilateral and multilateral relations – as well as engaging with the vast diaspora network. Furthermore, the Department also operates an extensive network of diplomatic and consular offices abroad – commonly referred to as 'missions' – and leverages these to support other Government Departments by serving as a knowledge bank by utilising local knowledge and networks.

4.2.2 Institutional Context

Institutional context is vital in understanding the DFA within the wider Government ecosystem – therefore, this section will provide a high-level overview of the Department by pinpointing public and civil service reform initiatives that triggered changes in how the Department operates. Furthermore, it should be noted that the Irish Government ecosystem is comprised of other Departments and Agencies, and occasionally operates in collaboration with those entities on specific projects or is required to implement changes based on reports from Commissions whose mandate it is to ensure efficiency and integration in the civil and public service system. Table 3 offers a holistic overview of all major central and local reform initiatives in Ireland.

Reform Initiative	Year	Themes
Brennan Commission	1935	Maintain existing structures and arrangements.
Report on the Public Services Organisation Review Group (Devlin Report)	1969	Structures, management and planning, separation of policy execution.
Local Government Reorganisation	1971	Abolition of sub-country structure, service consolidation, rationalisation.
Serving the Country Better	1985	Management systems, responsibility for results, customer service.
The Reform of Local Government: Policy Statement	1985	Structure, devolution.
Local Government Reorganisation and Reform: Report of the Advisory Expert Committee (Barrington Report)	1991	Constitutional recognition of local government, structures, devolution.
Strategic Management Initiative	1994	Strategy for national development, service to the public, efficient use of resources.
Delivering Better Government	1996	Management structures, human resource management, financial management, information technology.
Better Local Government	1996	Structures, strategic planning, corporate plans.
Public Service Management Act	1997	Responsibility and accountability of ministers and civil servants.
Transforming Public Services	2008	Governance and structures, e-government, citizen engagement.
Stronger Local Democracy: Options for Change	2008	Structures, devolution, greater public involvement.
Public Service Reform Plan	2011	Efficiency and cost reduction, alternative service delivery, rationalisation.
Putting People First: Action Programme for Effective Local Government	2012	Structures, funding accountability and governance arrangements, involvement in economic development and job creation, efficiency.
Public Service Reform Plan	2014	Improved outcomes, reform dividend, digitalisation/open data, openness and accountability.
Civil Service Reform Plan	2014	Structures, capacity and capability, openness and accountability.
Our Public Service 2020	2017	Service delivery, innovation, people management

Table 3: Central and Local Government Public Service Reform Initiative in Ireland (Boyle, 2020:8)

A series of early reform initiatives took place between 1935 and 1991. Two major reforms – the Devlin Report in 1969 and *Serving the Country Better* in 1985 – had an impact from a management point of view of the operations and management systems within Public Service Organisations (PSOs) such as the Department of Foreign Affairs.

While several early reform initiatives took place between 1935 and 1991, the Devlin Report (1969) and *Serving the Country Better* (1985) have had the most significant impact due to their focus on structural and operational reform. The Devlin Report (1969) noted a series of concerns relating to the structure and management of PSOs with a particular emphasis on planning. The Report illustrates a recognised shift towards private sector operating in that it recommended an amendment to governance by separating policy and management functions. For example, the Devlin Report emphasises the need for administrative service; more specifically, Section 24.4.4 of the Devlin Report (1969: 26) notes that “we recommend that the function of finance and accounting, planning, organisation and personnel should be grouped into staff units”. The proposal was not well received by Government who saw it as a personal attack on competency. However, this transformation was rather a result of changing times and the need to offer more efficient and better public services by including consultation of the public. Although lacking political support, an amendment was made to the ministers and Secretaries Act of 1924. Generally, the Act produced a Council whose function it is to “advise the Minister on the organisation of the public service and on matters relating to or affecting personnel in the public service” (MSA, 1973, Section 5, Part A).

Serving the Country Better (1985) refers to a white paper and sought to push for change in relation to management system, governance and services based on the agenda set out in the Devlin Report (1969). The white paper criticised the Government for being ‘outdated’ in relation to its approach to organising and required revitalisation. The white paper sets out and defines the civil service as having two functions: “the delivery of a wide range of services to the public; and the formulation of policy, advice and planning on behalf of the government” (Department of Public Service, 1985: 5; cited in Barrington et al., 2014: 70). Therefore, a twofold implication arises for the Department of Foreign Affairs: on one hand, it was the need to transform the administrative approach to operating; and on the other, it was the need to develop a more customer-based approach in offering services to the citizens both locally and abroad. During the 1980s, there was an economic downturn which resulted in a halt and abandonment of the reform agenda. Furthermore, the Department of Public Services (which was chartered in the 1973 Act) was disbanded and the functions outlined in Section 5 were transferred to the Department of Finance – who then drove a change agenda that was purely driven by ‘cost containment and retrenchment’ (Murray, 2001). Then, no reform took place until the major critical event – the Strategic Management Initiative (SMI) in 1994.

The Strategic Management Initiative (SMI, 1994) was a significant trigger that led to the overhaul of Government and PSO reform – by introducing key legalisation – such as the Comptroller and Auditor General Amendment Act (1993) and the Public Service Management Act (1997) as well as Central Reforms such as *Delivering Better Government* (DBG, 1996). The CAGAA (1993) imposed statutory requirements that placed responsibility on Government Departments to be held accountable for

resource allocation – specifically, the effectiveness and ‘value for money’ of their business processes and operations. Furthermore, the Act requires Departments to consider customer-related issues to align with their objectives with citizen needs. The PSMA (1997) requires Departments to publish strategy statements that outline their objectives and priorities and to submit them to central Government. These strategy statements are central to understanding the strategy work that takes place within the Department of Foreign Affairs and offers a more structured way of aligning the objectives and projects of the Units and Divisions within the wider Department.

Delivering Better Government (DBG) was a report published in 1996 as a result of developments from the SMI. At a parliamentary address regarding DBG in May of 1996, the Minister of State at the Department of the Taoiseach noted that “we owe it to the taxpayers to see to it that the civil and public services are well managed, operate to their full potential, deliver quality services that meet the needs of their customers and are value for the money spent on them” (Seanad Eireann, 1996). While prior attempts at government-wide reform have been made in relation to public management – the Devlin Report (1969) and *Serving the Country Better* (1985) – were noted to have limited impact (Irish Times, 1996). Therefore, the potential impact that DBG might have been put into question. However, SMI received government-wide support and support across the political spectrum while also being driven by senior civil servants where the reports were published by the coordinating group of Secretaries General (Boyle, 1997). This reflects wider bottom-up and cross-government engagement. For example, The Minister of State noted that “it is recognised that change and the achievement of excellence cannot be imposed from above. To be successful, change must evolve from a recognition by all concerned of the need for it. All concerned must also be involved actively in helping to determine the best means of effecting such changes. To this end, *Delivering Better Government* incorporates a process of consultation and dialogue which will involve staff at all levels having the opportunity to contribute to the change process, to influence its final shape and to have a real say in its implementation. The Government is fully committed to such dialogue and to ensuring that it takes place at all levels within the Civil Service” (Seanad Eireann, 1996).

DBG places significant emphasis on the internal management of the Department as well as customer service delivery as opposed to the policy function that many PSOs play, and proposed changes for internal operations (management structures, human resources, and financial management) as well as customer services (quality and transparency of services). Regarding initiatives aimed at internal management – the following aspects were noted: 1) devolving authority and accountability – DBG aims at clarifying the allocation of authority, accountability and responsibility of Ministers in relation to the Ministers and Secretaries Act in 1924 – which has led to cautious decision making; 2) greater emphasis on HRM – DBG seeks to devolve greater autonomy and responsibility for managing personnel and related resources from central to departmental management whereas performance management is

also noted as a key HRM issue. Regarding initiatives aimed at improving service delivery – the following were noted: 1) quality of service – such as response times to queries and payments as well as providing accurate information; 2) regulatory reform – simplifying regulations and reducing the cost of compliance; 3) transparent service delivery – an open approach to service delivery, e.g. ‘Freedom of Information Act’; and 4) Dealing with cross-departmental issues – the ability to tackle issues that require co-ordination efforts among departments (Boyle, 1997).

Overall, the aforementioned reforms demonstrate the key factors that have motivated the current structural and strategic state of the Department of Foreign Affairs. The latter reforms taking place between 2010 and 2020 will be incorporated into the narrative as they have an impact on the nature of change and strategy as well as playing a key role in the sequence of events that unfolded over that period.

4.2.3 Organisational Context

This section is concerned with the organisational structure and is comprised of two parts: First, the complexity of the Department of Foreign Affairs will be introduced to gain preliminary insight into the nature of the organisation. While extant literature does use PSOs as a case study, Foreign Ministries are unique in relation to the internal environment. Secondly, the structure of the Department will be outlined as a way of introducing the key structural components of the organisational system. The structural system in the Department has been subject to major changes throughout its history, but also particularly within the past two decades – because of change in strategy and mandate. These two sections will inform the case narrative by understanding the dynamic of the Department as well as the fast-changing environment in which it is embedded.

Complexity of Foreign Affairs

The Department of Foreign Affairs is a highly complex organisation that engages in a wide range of activities that span foreign policy, aid development and cooperation, cultural and economic advancement as well as various public-facing services such as passport and consular services. While all PSOs are subject to public pressure from politics, the Department of Foreign Affairs is unique in the following aspects: 1) the global geographic spread; 2) high-levels of churn for the diplomatic grade; 3) fast-changing political landscape; 4) government imposed budgetary constraints due to fiscal policy and recessions; and 5) complex alignment requirements due to many stakeholders – ranging from local politics to international politics as well as various institutions such as the UN, EU, World Bank, IMF, OECD and others.

The DFA has a wide *geographic spread* due to its operating over 100 offices, including 97 diplomatic and consular offices (referred to as ‘missions’) in over 70 countries – as well as managing a network of 100+ honorary consuls across the world. The geographic spread poses several challenges from an

administrative and support perspective – such as ICT infrastructure, security and facilities management – in addition to strategy and communication challenges by aligning the mission’s local requirements, priorities and objectives with the Department’s overall agenda. From an ICT-perspective, a set of challenges arise: First, the systems and websites need to be language and currency compatible with the local requirements of the missions; and secondly, software and hardware updates needs to be carried out across the global – initially done manually and now through the Global Wide Area Network.

Foreign Ministries, such as the DFA exhibit *high-level churn* due to job rotation being implemented as an anti-corruption mechanism – which is considered best practice by the United Nations through the ‘Doha Declaration’. Roughly 30% of the DFA’s staff are part of the diplomatic stream – which means they rotate roles, units, divisions as well as countries every one-to-four years. The high frequency of rotation has been acknowledged as a double-edged sword. On one hand, diplomats gain experience across the organisation which allows them to build a strong network and key understanding of various functions; on the other, it leads to issues relating to knowledge management and often slows down projects and strategies due to change of the project champion. As an extreme example, one interviewee noted that an intern of six months was the longest serving member of that unit. Furthermore, rotation has led to vacancies remaining open over longer periods which has led to certain activities and projects being put on hold. While these effects have implications, they are engrained in the life of the Department and its work at home and abroad.

The Department operates in complex and *fast-changing environments* which requires the organisation to adopt and change when confronted with large trigger events. Over the course of the Department’s history, resources were reallocated to deal with specific events that arose globally – such as armed conflict, trade conflicts and negotiations, relation issues, human rights abuse, cyber-attacks as well as various local and international political and economic campaigns. The significant restructuring of the DFA over the past 20 years reflects these changes through the creation, modification and deletion of units and divisions to align resources and strategic objectives to Ireland’s overall foreign policy agenda. A more recent example is that of Brexit, which has resulted in a shift of policy and reallocation of staff and resources to deal with the negotiations both at national-, EU- and international-level – resulting in other projects being put on hold or completely stopped.

As a government organisation, the DFA has been subject to numerous *financial constraints* due to recessions and fiscal policy. Early reforms in the 1970s and 80s were abandoned due to the fiscal situation in Ireland and therefore lacked political support to allow for the reforms. This meant that change was not being implemented. More recently, from around 2007 to 2014, the Department’s operations were very lean, and staff were spread thin. The recent financial crash led to a recruitment embargo, reduction in staff numbers, and value-for-money initiatives that saw a significant reduction in staff levels as budgets. To visualise, the staff levels in 2016 were the same as in 2000. This meant

that the focus was on ‘keeping the lights on’ and engaging in required and priority activities, as opposed to projects aimed at upgrading and expansion of services, systems and infrastructure. Furthermore, this fiscal situation resulted in a scaling back of the Department.

Finally, the Department is also complex from a stakeholder perspective. The reason is that the strategy statement needs to not only align with the strategic objectives and foreign policy agenda of the Government and other Departments, but also with international and supranational organisations. For example, the Department needs to align their internal processes as well as strategies to the Governments overall agenda – such as the Public Service Reform and Civil Service Reform agenda of the Department of Public Expenditure and Reform as well as Value-for-Money Initiative from the Department of Finance. Additionally, Multiple Divisions and Units within the Department also need to align with other Departments – for example, the Passport Unit’s security and internal management system needs to align with the Department of Justice while the ICT Unit needs to align to the Office of Government Chief Information Officer. Furthermore, policy-based divisions such as European Division, Political Division, and the Development Cooperation Division need to align with standards and strategies from the EU, UN, OECD as well as other multi-lateral international institutions. It can be noted that alignment is complex as there are multiple priorities and often conflicting ones as well.

Organisational Structure

The organisational structure of the Department of Foreign Affairs has been subject to numerous changes over the course of its history – with significant structural renewal and amendments having taken place over the past two decades. This subsection is concerned with introducing the key actors – Divisions, Independent Units and Management Board Committees – within the narrative to allow for a preliminary understanding. First, it should be noted that the Minister of Foreign Affairs has full responsibility for the Department and is supported by two other ministers: The Minister of State for European Affairs and the Minister of State for Diaspora and International Development. However, it is the Secretary General (Sec-Gen) who leads the Department in the role of Chief Executive Officer and is accountable for the day-to-day operations of the organisation. Under control of the Sec-Gen there are divisions led by staff at Assistant Secretary level as well as independent units that are led by Counsellors. As of 2021, the Department has 11 Divisions, two Units and several Management Board Committees – three of which are relevant for understanding the ICT2020 Strategy development process. The following section will now outline the Divisions and Units as well as the Management Committees to provide an initial understanding of the structure; however, particular treatment will be given to structural systems that are of greater relevance to the narrative. Figure 1, below, presents the 2021 organigram of the Department of Foreign Affairs while Table 4 captures the structural changes over the past years.

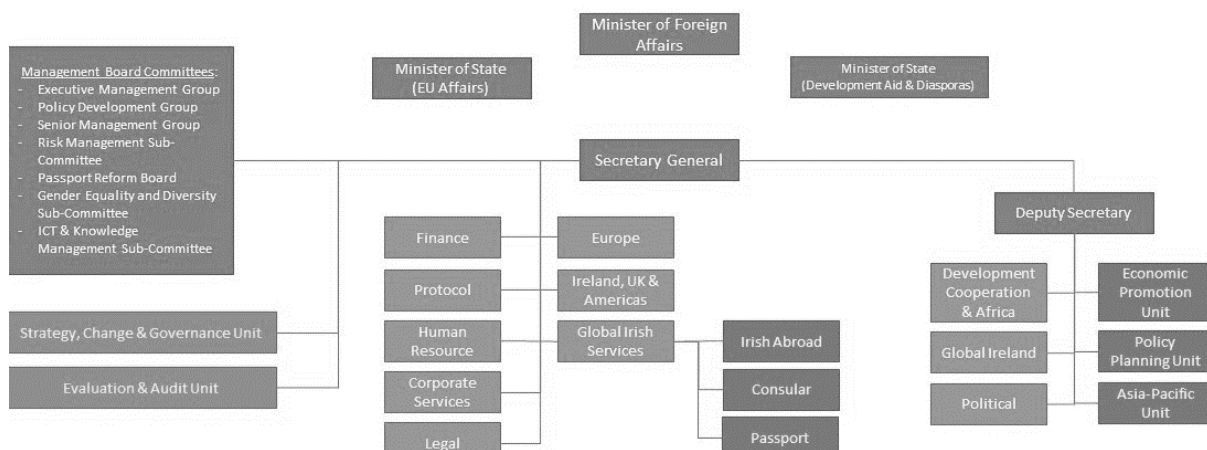


Figure 1: Organigram of DFA in 2021

Timeframe	Divisions	Units*	Major Structural Changes
1998 – 2002	9	0	- SECCO Division was established.
2003	10	0	- SECCO Division was closed. - Economic Division was closed. - EU Division and Bilateral Economic Relations Division was established by splitting activities from the Economic Division - Administrative and Consular Division was closed. - Corporate Services Division and Consular Division were established by splitting activities from the Administrative & Consular Division.
2004 – 2005	11	0	- Consular Division was modified to the Passport and Consular Division by incorporating Passport Services from Corporate Services Division. - Protocol and Cultural Division was closed and split which formed into the Protocol Division and Cultural Division.
2006 – 2007	10	3	- The Press Section and Irish Abroad Unit were established.
2008 – 2009	9	1	- Bilateral Economic Relations Division was closed, and activities were moved to the newly established Promoting Ireland Abroad Division. - Irish Abroad Unit was incorporated into the Passport and Consular Division.
2010 – 2012	8	4	- The Strategic Performance Unit was established. - Trade and Promotion Division was established.
2013 – 2014	7	7	- Irish Abroad Unit was moved to the Anglo-Irish Division - The Strategic Performance Unit was moved to the EU Division - Protocol Division designated to Protocol Unit - The Middle East and North Africa Unit, Asia Pacific Unit and Latin American and the Caribbean Unit were established.
2015	9	7	- Press Section modified to Communications Unit - The Strategic Performance Unit diverged from the EU Division and became its own division. - Policy Planning Unit was established. - Finance Division was established.
2016 – 2019	9	6	- The Anglo-Irish Division transformed into the Ireland, UK and America Division by incorporating the Americas Unit from the Political Division.

			- Consular Division transformed into a unit and placed under the responsibility of the Ireland, UK and Americas Division. - The Strategy Performance Division became a unit again. - Middle East and North Africa Unit, Asia Pacific Unit and Caribbean Unit were integrated into the Political Division.
2020 – 2021	11	2	- The Trade Division was closed. - The Human Resource Division was established.
*Units are referring to independent stand-alone units as opposed to units under direct control of divisions.			

Table 4: Structural Changes of DFA from 1998 to 2021

Divisions and Units

Of utmost interest for the narrative is the Corporate Services Division (CSD) which houses the ICT Unit. Furthermore, the Strategy, Governance and Change Unit (SGCU) is also vital to the understanding of the ICT2020 Strategy development as this particular unit is a change driver and has a cross-functional mandate for project-related activities. All other Divisions and Units can be classified as business units who are users of ICT.

The CSD is the administrative and support function of the Department and is currently responsible for four overarching areas: ICT, facilities management, security and compliance as well as other services to Headquarters and Missions. Furthermore, the Division has the lead responsibility for implementing Public Service Reform Agenda across the Department, and as such, engages regularly with the Department of Public Expenditure and Reform while the ICT Unit engages with the OGCIO on Ireland's e-Government Strategies.

The *Political Division*, *European Union Division* and the *Ireland, UK & Americas Division* are diplomatic entities with the Department. The Political Division bears all the responsibility for foreign policy matters and acts as an inhouse advisor for the formulation of political policy. The EU Division is responsible for all matters relating to relationships with the European Commission as well as EU member states. The Ireland, UK & Americas Division is similar to the prior two political entities but differs with its focus – where it emphasises relationships with Ireland, the United Kingdom as well as both North and South America.

The *Global Irish Services Division* contains the Consular Services Directorate, the Passport Service as well as the Irish Abroad Unit – all of which are aimed at assisting Irish citizens abroad. The Passport Service is the most outward facing service that the Department operates and has undergone a series of reforms to update their Passport System – which has been praised globally. Furthermore, the Passport Service had a relatively chaotic journey over the past year, having joined various Divisions as well as being its own Division. Additionally, the Passport Service is an ICT-intensive unit and therefore has regular engagement with the ICT Unit.

The *Finance Division* was established in 2015, a year after the Department hired its first Chief Financial Officer. The division has responsibility across Votes 27 and 28 as well as finance and budgeting. Initially, the Division was created under the responsibility of the Corporate Service Division – which oversees all the administrative and support functions – but then separated into its own division in 2018. This change reflects greater emphasis on value-for-money and project control from a resource standpoint. Furthermore, the Finance Division has the power to allocate resources to Divisions and Units and therefore plays a central role in pushing strategies. The *Human Resource Division* was established in 2020 and was also under the supervision of the CFO. The newly created division is responsible for HR Strategy in addition to implementing aspects of Civil Service Reform relating to HR.

The *Protocol Division* has two main engagements: first, working with international embassies and consulates operating in Ireland while being aligned to the Vienna Convention on Diplomatic Relations; and 2) planning visits abroad and visits to Ireland by Presidents, Ministers as well as Heads of State. They also organise events for dignitaries. The Protocol Division was initially established as the Protocol and Cultural Division in 2000 but then formed its own Division in 2004 and has remained so since then. This shift reflects the role of Ireland's EU presidency when hosting dignitaries from EU and International member states while also reflecting Ireland's intention to increase diplomatic relations around the world (Pacific, Africa and South America) through visits.

The *Legal Division* has remained unchanged throughout all of the Department's history and plays a critical advisory role in advising the Department on international law, human rights law as well as EU law. In particular, it assists various Divisions and Units when they engage on a policy agenda such as trade negotiations, bilateral relations or discussions at the EU and UN.

The *Strategy, Change and Governance Unit (SGCU)* is an independent unit with direct reporting lines to the Sec-Gen, who uses the unit for strategic changes purposes and to assist all Divisions in developing strategies. Furthermore, the SGCU houses the Project Management Office which seeks to ensure a project management approach to major projects within the Department. The SGCU was established as the Strategic Performance Unit in 2010 where it was placed within the EU Division until it became its own division in 2013 and then its own unit in 2014. During this time, the SPU also evolved into the SGCU due to the need for a Departmental unit to take ownership of governance across the Department. The Sec-Gen uses the SGCU as an instrument for driving change and major projects.

Management Board Groups and Sub-Committees

The Management Board (MB) "operates to the principles of shared participation and personal and corporate responsibility for the operational success of the entire Department in support of the Minister and Secretary General in the fulfilment of their statutory roles" (DFA, 2018: 27). Additionally, it acts in the capacity of strategic leadership, direction and oversight to ensure the achievement of objectives

of the Department. Currently, the MB has 11 sub-committees and taskforces; of particular relevant to the case narrative are the: Executive Management Team (EMT), Policy Development Group (PDG) as well as the ICT and Knowledge Management Sub-Committee. These operating groups are chaired by one or more members of the MB who are nominated by the Sec-Gen. Other members are included from the wider Department and are chosen based on specific business needs. While the EMT and the PDG are permanent groups, the ICTKM-SC was a sub-committee established and became the ICT Management Board Sub-Committee when the CFO joined the Department in 2014, acting as a basis to drive the ICT strategy. Similarly, other temporary groups such as the Passport Reform Board are created on an ad-hoc basis to drive particular strategic or policy work, and emerge in to full-time committees.

Recently, the MB has been reconfigured by the Sec-Gen into two formats: the *Executive Management Group* and the *Policy Development Group*, both of which feed into the overall management board and any member of the MB can sit on them. These groups were newly established at the start of the ICT Strategy (but not specifically linked to it) to ensure proper representation of the strategy work at board level. Furthermore, the EMG handles and reviews operational matters relating to the DFA (including ICT) while the PDG has responsibility for the oversight of policy development and driving the alignment of policy across the DFA. These two groups meet every two weeks and act as a platform for updating the MB on advancements made on the strategies and projects or issues that have arisen. This allows for the creation of shared understanding between diplomatic staff and the administrative staff.

The *ICT and Knowledge Management Sub-Committee* (ICTKM-SC) was created as a governance tool to track ICT strategy work at the request of the MB on foot of an audit of ICT governance by the Evaluation and Audit Unit. The committee is chaired by the Sec-Gen whereas the CFO acts as the deputy chairperson. The committee has full decision-making rights regarding the ICT-enabled change programmes and supported projects being pursued by the ICT Strategy Framework as well as the ability to recommend the acceleration, refocus and/or closure of programmes as deemed necessary. The Committee meets on a bi-monthly basis and is comprised of representatives of the MB, divisional senior management teams and the ICT management teams.

Civil Servants' Classification

Throughout the narrative chapter, reference will be made in relation to specific roles of individuals. Therefore, this section will outline the hierarchical levels.

Grade	Roles & Responsibilities
Secretary General (Sec-Gen)	The Sec-Gen is the CEO of a Government Department, such as the Department of Foreign Affairs. The Sec-Gen is responsible for the management of the organisation and reports to the relevant Minister.
Deputy Secretary General (DSG)	The DSG reports to the Sec-Gen and assists them in the formulation and management of the Department.
Assistant Secretary (A-Sec)	The A-Sec are heads of Divisions and also sit on the Management Board of the Department. They have the responsibility of managing a Division – which forms a core part of the organisation.
Principle Officer (PO)	The POs are typically act as Head of Units (within the Divisions) and have the responsibility of implementing the objectives and strategies of those units.
Assistant Principal (AP)	The AP can be classified as middle managers and have responsibility similar to that of line managers, where they lead teams of people and deliver projects.
Higher Executive Officer (HEO)	HEO's are middle management and report to the AP. HEO's have specific day-to-day tasks and assist in AP's in driving change and delivering projects.
Executive Officer (EO)	EO's are entry level and refer to lower management.

Table 5: Civil Servant Classification (*Publicjobs.ie, online; Whodoeswhat.gov.ie, online*)

4.2.4 Technological Context

Technological context is concerned with the use of ICT within the Department and offers preliminary insight into ICT adoption as well the culture surrounding its use. A now retired diplomat and former Divisional Director and Ambassador noted that the Department was first in line for ICT deployment in the 1980s – but there was a fall off. Furthermore, they noted that there seemed to be a huge cultural barrier and negative attitude towards the adoption of ICT, making comments such as: 'it wasn't for me' and 'it's something out there'. This sentiment dragged on into the 1990s. The ICT Unit was established in 1990 and resourced with three staff who reported to the AP in the Management Services Unit at HQ. The establishment coincided with the 1990 EU Presidency bid – and as a result of the campaign, ICT's first order of business was allocating 20 computers (e.g., word processors) to the two largest line divisions: the Political Division and the Anglo-Irish Division. While this action reflects the initial ICT penetration within the Department, user adoption at that time was not optimal. For example, desktop computers were being shared between people and primarily used as a tool for writing documents due to limited functionality. Furthermore, the lack of ICT skills among the Department's population led some individuals (commonly Secretaries and Executive Officers) having to write up

documents for more senior staff and diplomats. The sole role of ICT was to ensure allocation of hardware and to fix any issues that arose.

Towards the mid-to-latter part of the 1990s, there was an evident shift towards the adoption of email as a medium for communication – although telephony remained dominant due to significant delays and resistance in adoption. Although email service was available, it was fraught with issues and lacked reliability. For example, it offered limited functionality in that it could only send text within HQ as well as other local Government Departments and Agencies. In 1997, the ICT Unit became more formalised through the allocation of a dedicated AP. ICT then expanded its role and formed into a Unit within the Administrative and Consular Division – a shift away from reporting to the AP in the Management Services Unit. The AP role reflects greater responsibility of the delivery of projects and management of various stakeholders. Furthermore, it coincided with the publication of Circular 16 (1997) – derived from the SMI (1994) – and had an impact on ICT for two reasons: 1) it required the publication of strategy statements for ICT; and 2) led to an oversight of ICT-related expenditure. Prior to the Circular, no strategic documents were published to outline the actions and priorities of the ICT Unit. However, based on evidence and inquiry, limited engagement existed in assisting with the creation of strategy statements in the late 1990s and early 2000s and only started to emerge mid-2000s.

4.3 Top-Down Approach to ICT Strategy Development

Section 4.3 is concerned with the Department's strategy development process in relation to ICT initiatives from the period 2000 to 2009. The period was characterised by a traditional top-down approach to strategy development, which is apparent based on the strategic documents produced and the lack of senior management within the ICT Unit to engage with strategising. Objectives and priorities were imposed on the ICT Unit. Furthermore, this type of strategic planning led to certain challenges such as lack of shared understanding and domain knowledge as well as a lack of alignment between Division's objectives and ICT objectives resulting in user needs not being met. The following section will trace the sequence of events over time in relation to major ICT projects and the ICT Units operations and embedded it within the wider organisational context. Section 4.3.1 is concerned with the period 2000 to 2004 and outlines the initial growth of the ICT Unit and their first major project – the 'Global Network'. Section 4.3.2 addresses the period from 2005 to 2007 and portrays initial attempts at ICT collaboration with internal customers, albeit, with little success. Finally, Section 4.3.3 reflects a time of austerity after the financial crash resulting in a halt to major strategies and projects with emphasis on running and delivering basic services and 'keeping the lights on'. Overall, Section 4.3 identifies prior strategy development processes and is useful as a comparative tool for understanding social and intellectual alignment mechanisms regarding ICT strategy development within the Department of Foreign Affairs.

4.3.1 Building the Foundations (2000 – 2004)

This section outlines the sequence of events and actions that took place between 2000 and 2004. The 1990s saw the establishment of the ICT Unit as well as the initial formalisation of its role and responsibility through the allocation of a middle manager at Assistant Principal (AP) level in 1997. The role emerged as part of wider implementation of the SMI (1994) and the Public Service Management Act (1997) that required the publication of strategy documents. However, APs are not part of upper management and therefore did not participate in the strategic direction of the Department. The following section will outline and delineate actions that form an initial understanding of the role of ICT within the organisation. Section 4.3.1.1 will outline the state of affairs in addition to the events that took place in 2000 in line with the Department's Statement of Strategy (1999 – 2002). Section 4.3.1.2 will delineate actions and events that led to the initial stage of growth of the ICT Unit between 2001 and 2002. Finally, Section 4.3.1.3 will outline the events that took place between 2003 and 2004 and reflects the first major project – the 'Global Network'.

4.3.1.1 Humble Beginnings (2000)

The early 2000s are centred around the Department's Strategy Statement (1999 – 2002), which focuses on the development of the internal capabilities pertaining to the core divisional functions. As noted in earlier sections, this document is a result of central Government regulation enacted in 1997 and is therefore at this point in its nascent stage – and primarily outlines the overarching agenda based on their mandate. This document is produced by the Assistant Secretaries (A-SECs) who are senior managers in charge of running the Divisions within the Department. Interviewees have noted that the production of the documents were viewed as a box-ticking exercise. In relation to ICT, it meant that ICT strategy development was non-existent as the A-SEC – who wrote about ICT in the strategy statement – is two hierarchical levels above the AP. Within the Strategy Statement (1999 – 2002), it notes that "In view of the continuing advances in communications and information technologies, and the wide geographic spread of the Department's staff, a further critical success factor will be the development of effective systems for communications and the management, transmissions, storage and retrieval of the Department's information resources" (irl.gov.ie, 2001; Appendix 12).

The aforementioned quote from the strategy statement – while not explicitly mentioning ICT by name – acknowledges the role of information and communication technologies which are under the responsibility of the ICT Unit. While missions form a part of the Department, they are external and abroad often leading to issues with communication and alignment in goals and objectives due to local requirements. Furthermore, different time zones led to miscommunication between the HQ and the missions. As a result, there was a push within the Department to ensure a transition away from telephony and post to allow for more resilient email solutions for transferring documents and facilitating communication. The role then for the ICT Unit was to explore potential solutions to mitigate

the issues associated with the wide geographic stance from a communication and knowledge management standpoint. One of the key issues, was that different users were doing different things in relation to the storage and sending of documents. While some users continued to use physical documents, others shifted towards an electronic file system – leading to inconsistencies relating to data storage. For example, one interviewee noted that the Royal Irish Academy – which is an institution that researched Irish foreign policy since 1919 - would run into issues when they reached the year 2000 because “even if the material is there, formats will have changed. There is no order to them” [124; Appendix 1].

4.3.1.2 Initial Growth of ICT (2001 – 2002)

The ICT Unit grew significantly in the years 2001 and 2002 in size, functional structure as well as role and responsibility in relation to strategy work. The ICT Unit doubled in size from the previous six employees (1 AP, 5 HEOs & HOs) in 1998 to 13 employees (1 PO, 3 APs, 9 HEOs & HOs) in 2001. The allocation of a Principal Officer (PO) to the ICT Unit reflected the evolving significance of the ICT Unit in relation to the Department’s operations in addition to greater use of ICT among the user group. The allocation of the designated PO meant increased responsibility and role within the Department, as PO’s have responsibility for formulating and developing business plans as well as providing advice to A-SCs and Sec-Gens. Part of the role of the newly appointed PO was to provide advice on the Information Society Initiative at EU-level as part of the wider eEurope agenda arising from the Lisbon Summit in 2000. Since the Department sends representatives in addition to operating an EU Division,, advice was needed to assist the representatives for the eEurope Agenda. This reflected further growth by engaging in policy advice as opposed to purely technical work in the form of support and ICT development. Furthermore, another role of the PO derives from the increased responsibility for delivering a series of key projects related to the EU Presidency. Finally, it should also be noted that discontent at that time in the Department from business divisions and units reflected the need for greater stakeholder engagement, which was facilitated by the role of the PO.

Additionally, three new APs were assigned reflecting the functional evolution of the ICT Unit. The ICT Unit was then composed of three functional areas: ICT Security, Infrastructure and Server Management as well as the Network and Communications Group. The latter of which oversaw the creation of a Helpdesk in the same year. The formation of the Helpdesk – a vital user-facing unit – was as a result of the increased ICT penetration within the Department where existing staff were not able to dedicate enough time to deal with all the issues. The role of the Helpdesk was to engage with users on various issues relating to the systems, software and hardware.

In relation to ICT strategy, it was primarily imposed upon them from senior management and their agenda. The 2004 EU Presidency – as with the 1990 EU Presidency – led to an increase of investment into ICT. Many interviewees recognised a significant shift in the ICT Unit in the time leading up to the

EU Presidency due to several critical projects that supported the Department as a whole. Furthermore, the role that the campaign played in the development of the unit was also reflected in the 2001 ICT & Management Services Plan – where the majority of key priorities were aimed at supporting the campaign such as: a more resilient email system to allow for more efficient communication with Brussels, Ireland’s presidency website (www.eu2004.ie), remote access for email so that Department representatives can communicate on-the-go, as well as “the procurement of a centralised draw-down contract for ICT services at Presidency events for all Government Departments” (DFA, 2003: 40; Appendix 12).

Another contextual event in conjunction with the growth of the ICT Unit was a briefing that occurred in 2002. Several interviewees remembered a briefing – especially the former Director of Corporate Services where the ICT Unit turned up with the Head of Missions as well as other ambassadors. The briefing was not all positive as ICT was seen as lacking a user-based focus, being reactive as well as being slow to innovate. Some interviewees showed sympathy due to the acknowledgement of a lack of previous funding for ICT while others were critical for two reasons: first, other Irish Government Departments were deploying ICT more effectively; and secondly, other foreign ministries and UN counterparts had better equipment and more effective systems in place. Overall, the outcome of this event was the recognition that ICT needed to ensure better alignment from a technological perspective with the missions.

4.3.1.3 The Push for Global Network (2003 – 2004)

The period reflects a significant strategic milestone as it concerns ICT’s first major project – the ‘Global Network’. Furthermore, the DFA’s 2nd Strategy Statement (2003 – 2005) was published and reflects changes to the content of the documents but not in the manner in which they were produced regarding consultation. The Global Network project arose from the need to lay the foundations for further ICT expansion in terms of systems, software and communication. Furthermore, the Global Network – which was an Organisation-wide WAN network that connects HQ and missions – arose from the need to achieve standard ICT service delivery across the organisation. At this stage, while HQ and Missions form part of the Department, there were discrepancies regarding systems, software and hardware. The Global Network sought to offer HQ-based services to Diplomats and staff in Missions as well.

The Global Network allows for further development of a resilient email system as well as the initial deployment of the intranet on which information can be stored, accessed and retrieved. The Global Network allows for significant development in other business areas. For example, sole reliance on email led to issues in missions abroad where these missions were required to use dial up access to retrieve and send email where users had to wait for the modem. There were many different missions competing for access to receive and send emails. One interviewee noted, for example, that 20 embassies were dialling up at the same time, you could be first or 20th in the queue. Furthermore, this

led to common delays of five hours waiting for email. On some occasions, diplomats in missions would call the helpdesk and ask them to push people along the queue for an important email. This would require ICT Unit staff to go into the basement, see where a country was in the queue and put them to the top of the queue. This all started to change in 2004 with the Global Network.

Around that time, there was also a significant transition towards the intranet from email as a way to exchange information. The intranet was always on and allowed individuals from any time zone to access the information from their desktop computer. The intention of this platform was to offer a place of collaboration and knowledge sharing. It was a corporate resource that incorporated a significant repository of policy information. Political reports and reporting also relied heavily on the intranet. It was place where employees could keep track of the many political reports they were receiving because if they were kept in email, they would lose sight of them. While the technical foundation for the intranet was there and emerging, user adoption was not quite successful as many users were still storing the information via email. Around 2003 – 2005 there was an acknowledgement that knowledge management was important and that it was not only an ICT issue but also an issue for business units.

As noted earlier, the missions were isolated and locally responsible for their ICT infrastructure, hardware and software which led to inconsistencies and difficulties in driving change. As part of the infrastructure programme, ICT Unit members went abroad to the missions to engage with end-users as well as train and brief them about the new services and opportunities that the global network offered. This allowed the ICT Unit to maximise their value as well as getting to grips with what people needed to do in their day-to-day activities. The idea was to develop a proactive business-facing section within the Unit to engage with people in the missions on an-going basis. However, financing and resourcing were insufficient to keep this going.

Regarding the Department's 2nd Strategy Statement (2003 – 2005), it notes that “the implementation of the Department's ICT Strategy Plan over the coming years will be a critical element in achieving the Department's policy objectives and in progressing the Information Society Action Plan” (irlgov.ie; Appendix 12). Part of the role of the newly appointed PO was to provide advice on the Information Society Initiative at EU-level as part of the wider eEurope agenda arising from the Lisbon Summit in 2000. Since the Department of Foreign Affairs sends representatives and operates an EU Division – advice is needed to assist the representatives for the eEurope Agenda. As such, this reflects the further transition by engaging in policy advice as opposed to purely technical work in the form of support and ICT development.

4.3.2 Developing the Intranet (2005 – 2007)

The following section outlines the series of events that formed between 2005 and 2007 and are characterised by the development of the intranet. The intranet is vital to the internal communications

of the Department and offers a medium through which staff can store, access and retrieve documentation with 24/7 access. Furthermore, this period also sees continued upgrading of the Global Network as well as the attempt to allow for remote access to the network. The Department of Foreign Affairs 3rd Statement of Strategy (2005 – 2007) furthermore stresses the need to develop and maintain an effective system for the storage, retrieval and transmission – supporting previous attempts at knowledge management. Furthermore, the strategy statement lists an objective to “implement the Department’s ICT Strategy Plan to support the business needs of the Department by Implementing”:

1. The projects identified in the Department’s ICT Strategy Plan in collaboration with Sections, Divisions and Missions, as internal customers.
2. Support, maintain and develop the existing ICT infrastructure at HQ and missions.
3. Monitor the effectiveness and efficiency of the Department’s telephony system.
4. Work with Sections and Missions to provide business focussed ICT applications.
5. Provide advice on Information Society and e-Government initiatives.
6. Support, maintain and develop communications systems with international organisations.
7. Ensure staff have the necessary skills to take advantage of the ICT and communications facilities available.

The latter part of the 2000s continued the investment in ICT infrastructure and two projects were key to this: remote access to improve mobility as well as the push towards implementing a knowledge management system. This era is concerned with the second ICT Strategy (2005 – 2007), which focuses on: further supporting and developing existing ICT infrastructure at HQ and Missions, to implement projects as part of ICT Strategy in collaboration with Sections, Divisions and Missions as internal customers, to develop business focused ICT applications, provide advice on Information society and e-Government initiatives, support and develop communication systems with international organisations as well as ensuring staff have the necessary ICT skills to take advantage of the systems. ICT Strategy (2005 – 2007) was still embedded within the overall CS Division and integrated with the financial and management services. This reflects that while ICT has become more strategic, it has yet to develop a standalone strategy that is aligned with overall business needs.

4.3.2.1 Knowledge Management Acknowledgement (2005)

2005 was the year that knowledge management was acknowledged again. Whilst the issue of knowledge management – specifically, the storage, transmission and retrieval of information resources – was a focus throughout the previous decade, little progress had been made in relation to it. Users had become frustrated with the unavailability of a platform on which information can be shared. This can be attributed to the siloed information within the email inbox which subsequently causes high transaction costs for finding information for decision making and projects. Furthermore, there was confusion in relation to the ownership of the project and whether the project was ICT-related. The

adoption of email services as a mode of communication led to a bifurcation of processes in relation to the storage and transmission of information – with both emails being used as well as physical documents being archived. This has led to knowledge resources being siloed.

To counteract the issue of non-delivery of projects, this recent attempt saw the establishment of an Information Unit as well as a Knowledge Management sub-group to oversee the work of the Knowledge Management Strategy – while also simultaneously having responsibility for redesigning the DFA's website. The Department launched the Knowledge Management Strategy in 2005. However, due to major emphasis on the development and launching of the Department's new website, there was limited progress on the Knowledge Management Strategy and there were issues about resource allocation as well as lack of clarity on responsibilities for the individual groups. Furthermore, resources from Irish Aid in the Development Cooperation Division were allocated to spearhead several ICT projects and the ongoing decentralisation of Irish Aid to Limerick brought further impediments to the progress of the Knowledge Management Strategy. Due to limited progress being made on Knowledge Management, Irish Aid established a Knowledge Management Working Group. The Audit Committee noted that "in view of the expansion of the aid programme and the significant turnover of experienced staff due to decentralisation, the development of a robust knowledge management strategy is very important to support Irish Aid in achieving its objectives in the coming years" (DFA, Internal Document). The agenda for the next years was for the working group to identify key tasks that would aim to meet the information needs of Irish Aid after the decentralisation project – two of which included training staff as well as upgrading the Department's intranet.

The main focus of ICT activity in that year was related to the ongoing upgrade of ICT systems at HQ and the missions – where the unit delivered: 1) the connection of 21 missions of the Department's WAN providing a range of new services including desktop internet access; 2) the upgrade of software at 14 missions providing a new resilient e-mail and file storage system in line with that provided at HQ; and 3) the development of a new Departmental Intranet Facility (DFA Internal Document).

4.3.2.1 Remote Access (2006 – 2007)

The years 2006 to 2007 reflected the second major project after investment in ICT infrastructure. The emphasis on remote access is to increase mobility of users. Users had been consistently frustrated as their counterparts in both other Departments and other Governments were able to access email and files external to their workplace. Furthermore, the need for remote access to the intranet was also motivated by overreliance on email. The large volume of email within the Department was severely limiting the ability to store and archive information as it stayed siloed within the email inbox – which also made access and retrievability difficult. Also, there was an aim to drive adoption of the intranet.

While a lot of progress had been made regarding key infrastructure upgrades and internal communication such as email, intranet and video conferencing – many business units and divisions still felt that considerable improvement was needed for ICT to meet their needs. For example, a significant management review of the DCD and Irish Aid found “inadequate ICT support relative to its potential use” and requires considerable improvement while also outlining that “an ICT strategy should be developed which meets Irish Aid’s specific needs” (DFA, 2008: 71; Appendix 12).

Part of the remote access – the mobility agenda – was driven by the development of the global network which was called the Wide Area Network (WAN) to all missions. The WAN ensured that there was a common standard in relation to server site infrastructure, hardware and applications. It also allowed the upgrading of PCs globally without being onsite. Furthermore, the server upgrade programme could be done with little on-site, on-the-ground presence because the infrastructure was highly performing and capable. The technical infrastructure had a major update which then led for the need to exploit opportunities from a high-performing infrastructure – for people on the business side to consider and re-think how they do their work. One of these initiatives was the knowledge management initiative, and the informal Knowledge Management Task Force was established.

4.3.3 Austerity (2008 – 2009)

The years 2008 to 2009 reflect the period of the financial crash which saw austerity measures being implemented in the form of cost cutting, staff reduction and recruitment embargos. The level of austerity was severe and led to numerous vacancies and investments being reduced throughout the public sector. The Department saw a reduction of close to 30% of their budget due to recession. Furthermore, the new statement of strategy (2008 – 2010) reflected the fact that resources were spread quite thinly, with no emphasis on ICT – rather reiterating the idea that ICT should focus on effective information management and mobility requirements. However, advances were made in the mobility space as well as delivering information to citizens.

Colm McCarthy was assigned responsibility with identifying proposed savings and staffing reductions via the 2008 established Special Group on Public Service Numbers and Expenditure Programmes. The report published from the group, known as the McCarthy Report, outlined a series of Government-wide savings and reductions. The report noted a recommendation for the reduction of staff in the DFA by 65. Furthermore, the report indicated that a significant portion of the Department’s expenditure was in relation to its overseas missions. Therefore, the Special Group recommended that the number of missions – especially the smaller mission – be reduced from 76 to 55 to deliver cost savings. The emphasis in Government was then to ensure ‘value for money’ and to operate on a lean basis. This meant that several projects were being put on hold and that operations were very lean. Many

interviewees noted that starting 2008, the DFA was just about keeping the lights on and doing essential services. That meant that no expansions or upgrades were implemented.

However, one of the key projects that was delivered was the video conferencing facilities that emerged on the back of the Global Network. This investment wasn't funded the Department but by Irish Aid who had their own large budget. The need for video conferencing was identified from a report commissioned by Irish Aid and outlined ICT changes that need to be made. As VC was built out, it became a very effective tool for ICT. It has transformed the way the missions and HQ communicated and allowed members to talk to missions abroad and locally. A further upgrade was being finalised with the introduction of ethernet circuits across the Global Network. There was a transition from satellite to ethernet connections which allows for greater data transmissions capability. This has allowed the Department to develop such applications such as Video Conferencing and remote access via VPN. According to the Department's Annual Report (2008) there was a continued implementation of the ICT Strategy 2007 – 2010 with focus on the following areas: 1) launch of a new Departmental intranet; 2) development of a two-year Knowledge Management Plan with Department-wide consultation; 3) launch of the Consular Management System; 4) rollout of mission's websites using a standard template; 5) roll out of video conferencing facilities across the Department at both missions and HQ.

In 2009, Circular 2/09 was published which outlined the arrangement of ICT Expenditure within the Civil and Public Service in Ireland. The arrangement created by the Department of Finance notes that all ICT expenditure from Voted Fund's – such as DFA's Vote 28 and Irish Aid's Vote 29 – are subject to this ICT expenditure arrangement for projects, systems and infrastructure. Furthermore, a set of arrangements were outlined that require ICT and the Division to comply with certain rules, guidelines and frameworks in relation to procurement, use of services, and well as specific measures. Additionally, the arrangement also notes the need to "reduce the reliance on ICT consultants, contractors and external service providers with the ultimate aim of becoming self-sufficient in relation to the development, implementation, operations and management of ICT solutions" (S290/05/225/0015D). Another requirement of the arrangement "appoint a member of the senior management team (who is an officer of rank equivalent to or higher than the rank of Principal Officer in the civil service) as the primary liaison with the Department of Finance for ICT matters, hereinafter referred to as the ICT Liaison".

4.4 Bottom-Up Approach to ICT Strategy Development

Section 4.4 is concerned with the sequence of events taking place between 2010 and 2015. From a strategy standpoint, this time frame reflects a shift away from top-down planning where non-ICT senior managers impose priorities and objectives towards one where the ICT Unit has increased

responsibility for planning. In addition, advancements in reform initiatives from central Government also posed alignment requirements – such as from External Departments (e.g., OGCIO and DPER). Furthermore, the transition in planning ownership also reflected a change in leadership style and structure, where the creation of the Strategic Performance Unit (SPU) was assigned responsibility for spearheading the development of the DFA's Strategy Statement by eliciting wider engagement across Divisional structures.

Section 4.4.1 will outline the reform agenda driven by the newly established Department of Public Expenditure and Reform (DPER) which resulted in a review conducted of the Department between 2010 and 2011. Section 4.4.2 outlines the emergence of a 'burning platform' where there was an increased sense of urgency surrounding strategising and project management. Additionally, the reform initiatives also led to the creation of the eGovernment Strategy (2012 – 2015) from the OGCIO and recognises the ICT as a vital component of overall Government reform – thus, pushing ICT to the forefront of strategy work and engagement. Finally, Section 4.4.3 outlines the impact of the developments of the eGovernment Strategy within the Department and the revitalisation of the ICT Unit.

4.4.1 Reform Agenda (2010 – 2011)

The situation in this period is still one of austerity. All Government Departments were hit with austerity measures such as the Value for Money Programme (2008 – 2011) that led to a reduction of investment as well as major cost cutting in the form of staff reduction and embargoes. Furthermore, the Reform Plan (DPER, 2011; Appendix 12) noted that the Government was currently borrowing over EUR 1.25 billion on a monthly basis for operations. Therefore, the years 2010 and 2011 reflected an attempt to further drive efficiencies while interviewees also noted that the structures and processes within the Department were incredibly lean. As a result, emphasis was placed on maximising the effectiveness of existing resources.

4.3.4.1 *Making Do (2010)*

Due to the drive for efficiencies and effectiveness in use of existing resources arising from the lack of investment, the ICT Unit was required to reflect on how to internally transform their operations to make better use of key resources. For example, 1) an attempt was made at the creation of the ICT-Business liaison function to better understand user needs; 2) the development of the help desk to maximise the value of the Global Network infrastructure; and 3) dealing with issues regarding knowledge management.

The creation of the ICT-Business liaison function within the ICT Unit reflects ICT's commitment to better understand user needs within the Department. The Unit had at times been criticised in this regard.

While key ICT priorities outlined in the annual report and DFA's strategy statement always noted the need to understand user needs, this was not always happening as envisaged. Interviewees have noted that from 2010, the ICT Unit started to become more outward-facing in the direction of other Divisions – which was further driven and supported by the helpdesk which interacts with business units daily. However, this agenda quickly became stagnant. The existing structures in place meant that ICT involvement in Divisional projects required sign-off from the Director of Corporate Services which added layers of bureaucracy. Furthermore, these structures inhibited the ICT Unit in fully engaging with the business-side to develop cases and were subsequently only assigned based on top management decisions.

In order to maximise the benefits of the Global Network, the ICT Unit promoted a help desk as a client facing function to deal with user inquiries related to hardware and software throughout the Department. While the help desk function was established in 2004, it was further developed as a key objective to continuously maximise the deployment of new services and increase the adoption among business users. The Head of ICT at the time noted that “the infrastructure was there so we worked hard to ensure that the services and the support was available to people to maximise the value from the significant investment that has been made” [I38].

Another priority in 2010 was the continuance of the knowledge management agenda; however, while minor advancements were made, it still failed to fully utilise the infrastructure established from the Global Network. To date, no formal task force had been established to support the creation and development of the project. While this issue had been recognised by the management board, the project had not been gaining traction in the form of participation and resource allocation due to austerity measures in place. Rather, the initiative was spearheaded in a voluntary nature by participants with keen interests in establishing a more rigorous system. For example, one interviewee who was leading the initiative was Director of the Europe Division which meant most of the time allocation went to managing the division as opposed to the initiative. This person noted that they “required an assistant secretary to come to the MB or management committee and keep banging the drum to say how important it is. And to keep an eye on what's going on in the wider public service and engaging in that area” [I40]. Furthermore, at this stage, it was again recognised that Knowledge Management was not just an ICT problem but also an issue that requires engagement of the wider department.

Additionally, 2010 was the year that the SPU was formally established, albeit with limited resources. The decision to establish a function responsible for strategy and performance began in 2009 with the management board attempting to establish a unit that could guide projects and increase the chances of success through the utilisation of project management skills. The SPU was formed and was in charge of performance as well the development of strategy statements – by coordinating with different

sections, divisions as well as missions abroad to ensure coherence. One interviewee noted that the SPU also played a role in becoming a go-to place for insights into strategy development. The role of SPU was significantly advanced in the upcoming years once austerity measures were reversed.

4.3.4.2 Reform, Rebranding and Criticism (2011)

2011 was a critical year for the Department and contained a series of events that have shaped the Department since then. The newly established Department of Public Expenditure and Reform – which took over some mandates from the Department of Finance and in particular CMOD – carried out a significant agenda through the Organisation Review Programme (ORP) as well as the Public Service Renewal (PSR). The former was a report derived from an 18-month investigation and review of all Government Departments, including Foreign Affairs and outlined key changes that needed to take place. The latter is a Government-wide reform strategy consisting of a series of initiatives aimed at internal management as well as citizen- and business-facing services. The DFA's new Statement of Strategy (2011 – 2014) was also released which largely reflects the priorities and initiatives outlined in the ORP and PSR. The following section will illustrate how the ORP and PSR shaped the DFA's Strategy (2011 – 2014) as well as the implications of that strategy for the ICT Unit.

Public Service Reform (DPER, 2011) was released at a time of austerity starting from 2008 where 20,000 public and civil servants had been removed since then with a further 5,000 redundancies in 2011. The emphasis of the reform was to revitalise the government using minimal resources and lean operations in four key areas: 1) implementation of shared services model for HR, payroll and pensions; 2) evaluation of new business models for the delivery of non-core services; 3) reform of public procurement processes and property rationalisation; and 4) reducing cost, addressing duplication and eliminating waste to support job creation. This constituted 14 public service reform initiatives – all of which had direct implications for the Department of Foreign Affairs.

The following key thematic areas will be introduced from a content-perspective – by drawing on the ORP, PSR and DFA's Statement of Strategy – due to arising implications for strategy process:

1. *Strategising* was a key aspect in both the ORP and PSR. Since 1997 – as per the Public Service Management Act – Departments were obligated to produce strategy documents outlining their objectives. The ORP Report deemed the DFA's process to be ineffective and therefore emphasised the need to develop an interactive process surrounding the development of strategies and related business plans to ensure coherence with the Department's overarching agenda. Interviewees endorsed the criticism, noting that existing strategy statements were often in excess of 40 pages and usually developed as a mere box-ticking exercise that led to them collecting dust rather than being used as a strategic tool for guiding action. As a result, the SPU was tasked with revitalising

the approach by simplifying the structure while also ensuring coherence amongst the Department's priorities and Divisional and Unit objectives.

The ORP Report also noted the need for greater contribution of Missions in Departmental decision-making and planning. This is derived from the recognition that policies and strategies are often HQ-dominant and thus fail to incorporate local requirements. Another recommendation was to ensure greater engagement between SPU and the Policy Planning Unit to support strategic planning initiatives in Irish Aid. This was to ensure consolidation of knowledge in relation to strategising and to further support SPU in its responsibility to become a powerhouse for strategy development and project management. Additionally, the PSR also reflected the need for greater alignment for the production of strategy statements – specifically, linking strategic objectives to budgets, sectional business plans and individual performance goals. The PSR (DPER, 2011: 44) notes the need to “develop actions plans to address any issues raised in the organisational reviews in the areas of setting strategy, leadership, creating shared understanding, customer service, continuous improvement and innovation, management of HR, ICT and Finance, governance, evaluation, customer/stakeholder feedback and input into policy/strategy” (DPER, 2011: 44).

2. *Organising* or more specifically, re-organisation is a central theme of the PSR and was referred to in the Department's ORP Report. This topic drew criticism from senior management but was welcomed by junior staff within the Department. From a PSR standpoint, there was a need for business process improvement (Initiative #4) that sought to improve efficiencies by fostering cross-organisational initiatives and projects through business process and structural improvements. The ORP noted, specifically, that there was a need to be more productive in relation to resource deployment in driving projects. Projects with Department-wide benefits and implications often had siloed ownership which hindered their success as well as their adoption. Furthermore, complex structuring of the Mission-HQ relationship often led to Missions being misaligned and not engaged. As a result, SPU was assigned the responsibility of completing a reorganisation of HQ with the aim of reducing hierarchy to allow for greater coherence in outputs as well as simplified working arrangements between the Missions and HQ.

Another recommendation from the ORP was the need to deploy resources (contingent on resource availability) to establish a Change Management Unit within SPU to spearhead projects outlined by the MAC with the aim of improving implementation and communication throughout the Department. The traditional structures of the Department were noted by interviewees to be rigid and hierarchical, which often led to high levels of resistance to change and maintaining the status quo on ways of operating. Furthermore, Knowledge Management projects and initiatives had been attempted for the past two decades with little success. Therefore, another key aspect of organising was to assign SPU to projects to ensure continuity, collaboration and coherence. As a result, SPU

would now engage with the Knowledge Management and Innovation Task Force (KMITF) to ensure proper implementation.

3. *Information Sharing* is another thematic area that was addressed explicitly in the ORP Report and the Department's Statement of Strategy while implicitly being referred to in the PSR. Particularly, the ORP process uncovered significant issues within the Department. The level of information and communication transmission was mixed, where some areas enjoyed a strong sense of shared understanding and others did not. More specifically, two key issues were addressed: 1) the handover process when staff are relocated frequently; and 2) the structure of the Department that limits the communication between Missions and HQ. The first issue is a particular barrier to strategising and project management, as high churn leads to vacancies and a limited handover process resulting in loss of knowledge.

Actions were proposed to overcome the issues identified. Action #1 sought to develop a standardised approach to knowledge management regarding how staff classify, store, share and retrieve information. The key motivation was to improve efficiency and reduce transaction costs. For example, interviewees noted that the dominant reliance on email as a knowledge management system resulted in information (e.g., documents) being siloed, misplaced and simply forgotten. One interviewee noted that the time spent on retrieving and obtaining documents is 'absurd' and inhibits progress. Action #2 was related to improving communication between missions and HQ through the use of intranet and video conferencing. This responsibility is held by the Heads of Division and Missions. The ICT Unit in conjunction with the KMITF sought to complete a review of 'mobile mail' (mobility project) pilot project and if approved to develop a formal implementation plan.

4. *Information Silos* and *Communication* were two thematic areas also mentioned and are intertwined because the latter leads to the former. Furthermore, the Strategy Statement, PSR and ORP Report noted the need to improve communication to transfer knowledge – both internally and externally. From an internal perspective, there was a need to improve communication between HQ and Missions abroad via the intranet; whereas from an external perspective, there was a need to develop the Department's social media and website platforms to communicate topics regarding foreign policy, travel advice, aid programmes and consular matters to citizens and businesses. To achieve these objectives, the Department created a new unit – the Web & Digital Unit within the Communications Unit – as well as making another attempt at Knowledge Management with the backing of the Management Board. The Web & Digital Section was established within the Communications Unit in 2012. The creation of the unit was as a result of

alignment with the PSR (2011) as it noted the need for better service delivery to citizens, of which communication plays a vital part. The Web & Digital Section is responsible for the digital side of the communication and the work is conducted in two areas: 1) the website, online and messaging as well as how to frame content for an online audience; and 2) multi-media which includes photography and videography. Furthermore, the Head of the Section notes a strong collaboration with ICT as ICT is responsible for the website hosting. To improve engagement in Missions abroad, they had to produce 80+ separate websites for each of the missions and related projects to promote communication. Overall, lack of communication and siloed information had led to a knowledge management issue which had accumulated over the previous decade.

Internally, the Department also had to change the manner in which they communicated. The Department still exhibited large informal networks throughout the organisation created through high levels of churn. At this stage, the ICT Unit was still negatively perceived and siloed as most of the interaction was done through the help desk. Other Units – such as the Passport Office and the Web & Digital Unit – had project-based engagements with the ICT Unit and therefore established a closer relationship with the actual members of the ICT Unit. With the aforementioned units, ICT was seen as an enabler of their operations. Another key aspect of information sharing was to leverage the use of the intranet for knowledge management purposes. After years of stagnant and constant failure, the management board supported the creation of the Knowledge Management Task Force. The Management Advisory Committee (MAC) established a Task Force on Knowledge Management that met the first time in February 2012 with the purpose of agreeing the scope of work for the coming months. The Task Force was chaired by then Director of the European Division and included the Head of the SPU as well as the Head of the ICT Unit. There was a discussion regarding what knowledge management meant when dealing with both paper and electronic records – and there was agreement that it pertained to Records Management. Furthermore, the Department's archivist was made a member of the task force to deal with the physical and electronic archives. Additionally, that meeting emphasised the need to prioritise short-term pilot projects for early success and to gain and build momentum for the programme of work. Finally, the restructuring within HQ was also noted as a good opportunity to review the HQ electronic folder structures in relation to the new business planning model.

Overall, the thematic areas relate to social and intellectual of the Department's Strategy – while also adhering to the budgeting limits which reflect limited resources. From an ICT Unit standpoint, they were to leverage their ICT infrastructure "to support streamlining and improvement of internal business processes with a particular focus on customer service delivery" (DFAT, 2011). Furthermore, the ORP Report (DPER, 2012: 144) noted that "the staff of the ICT Unit are regarded by their internal customers within the Department as being helpful at solving day-to-day ICT problems, and the

Passport Office utilise modern effective ICT systems to help generate passports quickly and securely. However, there are two priority knowledge management issues which the Department must resolve: providing secure mobile devices to staff and delivering a solution to the problem of ad hoc and siloed storage of electronic documents". To conclude, these changes were to guide strategy in the upcoming months and years.

4.4.2 'Burning Platform' (2012 – 2014)

The ORP Report created a 'Burning Platform' through creating a sense of urgency for change. This section illustrates the sequence of events that occurred within the period of 2012 to 2014 and is characterised by significant advancement of ICT. The ORP Report led to an Action Plan and pinpointed key areas that need to be addressed. The following section will tell a story of how the ORP Action Plan led to a 'burning platform' for change. With the creation of the SPU and full the support of the Management Board through the Management Advisory Committee, several projects began to form and produced immediate results. While the change that took place delivered improvements, other outcomes of the initiatives created instability.

4.4.2.1 Constructive Criticism (2012)

The ORP Report and subsequent Action Plan were formally published on the DFA's intranet in 2012. Interviewees noted that senior management were quite surprised at its negativity while junior staff were not at all. It was noted that "it's hard to overstate, up until 2010 how old fashioned and rigid the Department was – and resistant to change; and how negative that culture was and add austerity on top of that" [I23]. While some senior management simply brushed off the criticism by stating that "it's easy for consultants to come in and tell you how do your job" [I5], other members of the management board saw the report as a burning platform to drive change across the Department. What incentivised the change was twofold according to interviewees: on the one hand austerity with cutback of resources required a more efficient approach to operating. On the other hand, the central level – referring to DPER and the Department of the Taoiseach – with both Civil Service Renewal and the earlier Public Service Reform brought in standards in performance budgeting, corporate governance frameworks and business processes in relation to strategy formulation. The agendas and constraints outlined in the report were addressed in the DFA's Statement of Strategy (2011 – 2014).

As a result of the Action Plan derived from the ORP Report, the SPU received greater responsibility in driving the change agenda on the burning platform. More specifically, they led out on several large-scale projects in a cross-Departmental manner. The ORP Report noted that the SPU was a welcome development in that it seeks to make improvement by employing a project management approach. The Former Head of Division with responsibility for SPU noted that the Action Plan acted as the foundation for an agenda for change. Furthermore, the respondent noted that they saw the ORP Report as an opportunity. One of the key aspects of the agenda was to reduce the high transaction

costs present in the department. Many respondents were subject to that, where a significant amount of time was spent looking for information that should have been readily available to everyone. One interviewee noted that as a result of this issue “you had to get on the phone and talk to people and do ridiculous things to get the information you needed to do your job” [113].

Knowledge management, as many interviewees have stated, was doomed to fail. The Department is unique due to its diplomatic core and subsequent rotation due to their roles. The KMTF consisted of 3-5 key players of which the majority were diplomatic. That meant, every two years they would be engaged in the process and then leave to go abroad and go on posting – which meant that someone else was drafted in as a replacement but not at the same level of knowledge or enthusiasm. The initial KMTF Group meeting took place in February 2012. The KMTF Group received backing from the MAC due to the current ‘burning platform’. There were also discussions surrounding the challenges of records management and in particular the manner in which to deal with both physical and electronic records.

Since the emergence of strategy statements in government as a requirement from the Public Service Management Act (1997), the strategy statements were quite lengthy and poorly communicated. This led to two issues: first, this the strategy statements were seen more as a box-ticking exercise after which the often 80+ page document would be left in a drawer; and 2) hardly anyone in the Department knew precisely what the aims of the Department was and how their work linked to the achievement of those. As such, the SPU was tasked with revising the manner in which these strategy statements are produced through business planning and risk management systems as well as coordination with the wider Departmental units and section

4.4.2.2 OGCIO and Mobility (2013)

In 2013, the OGCIO was established within the Department of Public Expenditure and Reform and emerged from another division within the Department of Finance, formerly known as the Centre for Management and Organisation Development (CMOD). The Office of Government Chief Information Officer (OGCIO) had the mandate for both developing and implementing ICT-related policies for the whole of Government and in 2013 released their eGovernment Strategy as part of the wider Public Service Reform. The strategy put citizens and businesses (i.e., customers) at the centre and sought to leverage and deploy ICT in a manner that delivers faster public services, better and more efficiently. The strategy comprised of 45 actions (‘Action 45’) and related to front-end interfaces such as platforms in addition to back-end integration of services to central mediums (e.g., MyGovID). Furthermore, significant resources were allocated for investment in infrastructure. However, infrastructure investments were targeted for a shared model of services as opposed to singular Departmental projects.

Due to the drive for efficiencies, the OGCIO proposed a shared model through which central Government designs and delivers services that are required from all Government Departments, as opposed to having ICT Units across Government having to 'reinvent the wheel'. This agenda was referred to as 'Build to Share'. The idea behind this was to reduce ICT Investment on services to allow ICT Units to utilise their investment for other purposes. Additionally, a requirement of Action 45 was for all Government Departments and Agencies to develop an eGovernment plan that was aligned with advice published by CMOD that followed the consultation with the Public Service CIO Council. The CIO Council consisted of Heads of ICT in Government and industry experts. This was the first time that ICT Heads played a critical role in shaping policy and reflects a rise in importance in the function of ICT. Finally, the eGovernment strategy also resulted in project oversight from a financial perspective. The Office of Government Procurement was also established and works with the OGCIO in relation to ICT-related expenditure under the terms of Circular 02/09 and Circular 02/11 and have the authority to either sign-off or decline ICT projects at Government departments worth over EUR 25,000. This mechanism was erected to ensure large projects are aligned with the Agenda of the OGCIO.

4.4.3 A Fresh Start: The New ICT (2014 – 2016)

This section will outline the key events that took place between 2014 and 2016. Furthermore, this sequence of events succeeds the early reform initiatives that emerged from austerity which had a significant impact on the Department in terms of resourcing – both financial and human capital. This era reflected change – not only in structure but also in culture. The year 2014 saw the revitalisation of the ICT Unit after a large departure and movement of individuals while the following years saw the emergence of the digital first approach where ICT was placed at the centre of the organisation. Furthermore, a significant revitalisation took place throughout Government with the introduction of the new Public Service Reform Plan (2014 – 2016). Additionally, the introduction of a new AP-level structure led to a large shift of employees from HQ to missions overseas resulting in several vacancies. Finally, this time reflects a change in leadership with the introduction of a new Secretary General who had a different vision in comparison to his predecessors. The Sec-Gen noted the need to create an 'ecosystem' where all staff types – such as technical, administrative and diplomatic streams – all work together and understand each other. In addition, it was noted that these staff "speak different languages" and that there was a need for a platform to communicate to allow for shared understanding.

Interviewees noted a large departure of middle and senior management from the ICT Unit towards the end of 2014. There was a leadership change in the top of the organisation and personnel change as well due to the civil service reform regarding re-classification and down-grading of personnel across Government. The Head of ICT left, three Assistant Principles who headed the core functions of the ICT Unit as well as several principal officers all within a short period of time left for other positions – which

was damaging in terms of continuing projects and carrying out duties. In the time leading up to the change, a few HEOs and HOs noted that progress was slow, and some considered changing roles as the unit was very stagnant. However, the change was then seen as positive as the HEOs were promoted to APs where one interviewee noted “it was like a new group – out with the old, in with the new” [I29] and commented that “we’d all experience what we’ve done wrong over the last year” and allowed us to get a fresh start with new leadership. It should be noted that the Head of ICT then transferred to the OGCIO and took control of the Digital Government Oversight Unit. It should also be noted that this change removed the status quo due to the previous leader being there since the Unit only had three employees. An interviewee noted that “The Department had a very staunch approach to network security, and it was very adamant that they couldn’t allow x and y because of risk introduction. With new leadership, the head of the ICT unit took a different approach which increased the possibilities of solutions from a requirement and remote perspective” [I21].

Furthermore, there was a secondary exodus of middle and senior management as a result of civil service reform. More specifically, there was a change in classification for civil servants which offered opportunities for Assistant Principals to take up ambassadorial roles abroad which ultimately led to a large shift in staffing from HQ to overseas missions. The austerity measures implemented over the past years by DPER and the Department of Finance such as the recruitment embargo meant that the large staff turnover in addition to lean structures resulted in a high number of vacancies in important roles. Ultimately, this led to core functions being unable to carry out tasks.

The Public Service Reform Plan (PSRP) (2014 – 2016) was published by DPER in January 2014 and incorporated four key themes: 1) delivery of improved outcomes; 2) reform dividend; 3) digitalisation and open data; and 4) openness and accountability. The PSRP (2014 -2016) gave the Head of ICT greater visibility and engagement with the OGCIO through stakeholder engagement. The most significant part of PSR (2014 – 2016) was the Public Service ICT Strategy published in 2015 as a result of this agenda. The strategy had five strategic objectives: 1) ‘build to share’ – an integrated approach towards infrastructure to allow the collaboration and sharing of information between Departments to offer better services to citizens and businesses as well as sharing of systems and services between Departments as a way of reducing cost and driving efficiency; 2) ‘digital first’ – to increase the digital interaction between Government, citizens and businesses through the digitisation and digitalisation of services; 3) ‘data as an enabler’ – to allow for more effective sharing of data to support decision making and offer new services; 4) ‘improvement of governance’ – which will “focus on improving ICT governance to ensure alignment, reduce risk and support unification” as well as ensuring that “ICT projects are aligned, directed and monitored to support the specific goals and objectives of a Public Body at a whole-of-government level”; and 5) ‘increase capability’ – which requires sufficient and

necessary resource levels and skill sets with the overarching aim of professionalising the ICT career stream within the public service (DPER, 2015: 6).

4.5 ICT2020 Strategy Development Process

The prior sections develop an understanding and historical context regarding the ICT Unit and related strategy development. Section 4.5 is concerned with the core part of the case study and therefore the narrative. It traces the event history of the strategy development process of the ICT2020 Strategy that took place between 2016 and 2019. More specifically, the cumulative progression taking place demonstrates the enactment of social and intellectual mechanisms through a phase-based approach. Much more, the ICTSDP reflects a renewed approach to strategising within the Department and is characterised by organisation-wide engagement and collaboration as well as the shared sense of ownership of projects underpinning the ICT2020 Strategy. As a result of temporal bracketing, the development process has been sliced into three phases: Discovery (Section 4.5.1), Formation (Section 4.5.2) and Execution (Section 4.5.5).

4.5.1 Discovery (March 2016 – March 2017)

The Discovery phase constitutes the initiation of the ICT2020 Strategy development process within the Department of Foreign Affairs and covers the period March 2016 until March 2017. The events reflect actions and initiatives aimed at discovering ICT opportunities and needs within the organisation. Within this phase, events had produced an awareness of the need for an ICT strategy which derived from a cumulation of prior historical events. Furthermore, activities were aimed at analysing both the internal and external ICT landscapes. 2016 reflects a time when major changes were implemented from an institutional perspective where central Government reforms – and the OGCIO's eGovernment specifically – led to the emergence for thinking 'Digital First' in relation to Departmental operations and customer service delivery. Finally, reflection from top management acknowledged the need for a renewed approach to ICT by transitioning from planning towards an open form of strategising that exhibits organisation-wide engagement as well as the inclusion of external members for knowledge and insight. Overall, the following section will indicate events that took place that seek to raise awareness regarding the ICT project portfolio in conjunction with the organisation's overarching objectives.

4.5.1.1 Digital First

As outlined in prior sections, numerous attempts were made in relation to knowledge management as it has been identified as a serious issue underpinning the success of the Department as early as 2005, while also being reiterated by the ORP and subsequent Action Plan in 2012. The projects were free-floating with unclear ownership and no buy-in within the organisation and therefore failed to progress significantly. In March 2016, the initial awareness of the need for an ICT-centred strategy emerged in

the form of two events: the externally hosted OGCIO 'Digital First' event [Appendix 2] and the Knowledge Management Taskforce (KMTF) project-update session.

The Digital First event was identified by many interviewees to be the trigger point at which ideas surrounding the ICT Strategy commenced. The event commenced with the A-Sec of Public Service Reform as well as the Sec-Gen of DPER, addressing senior management of the DFA regarding the digital agenda of the overarching public service reform strategy. A major component of this reform strategy was to assist Departments in thinking digitally first, that is, going beyond purely digitising files and processes to building services on digital platforms and offering better value to customers. Throughout the day, major presentations were hosted from members of different departments who shared their success stories regarding digital projects. Participants noted the usefulness of this exercise in understanding some key issues that may arise as well as learning how to apply certain technologies in the public service context. Furthermore, a panel discussion and Q&A was hosted to allow members of DFA to ask any questions regarding the digital agenda and to understand how DPER and the OGCIO will support the Department. Finally, the event ended with the incoming Government CIO addressing the Department. Overall, the Digital First event triggered the discussion surrounding how the DFA was going to transform and promote its digital agenda and laid the foundation for what became the ICT2020 strategy.

4.5.1.2 A Refocused Vision for Knowledge Management

After the Digital First event, there was a drive towards a refocused vision for knowledge management. Soon after the event, the KMTF met to discuss Q1 milestones and plan for Q2. The artefact outlined the priorities, cost and progress in relation to eight ICT projects as well as one development project. Furthermore, there were other presentations during this meeting including an update from the ICT Unit, a presentation on open data by DPER as well as insights from project management practices of the PPO reform team within DPER. The KMTF was making strides to progress more in the right direction.

Recognising some challenges ahead, the chairperson of the KMTF brought in an External Advisor (EA) with experience in ICT and strategy development in public service organisations. In May 2016, a meeting took place with the management board, the SPU as well as members of the KMTF. The meeting was led by the SPU and comprised a series of sessions with the theme 'Realising the Vision for Knowledge Management and Innovation'. The day-long meeting was split into two components: first, presentations of the eight projects within the overarching Knowledge Management Initiative (KMI); and secondly, a meeting between members of the management board. Each of the project leaders within the KMTF gave a presentation of their projects and answered key questions regarding the project structure, scope, linkages with the DFA's strategy and well as desired outcomes. The aim was to familiarise management with the key projects taking place and more specifically, the A-Secs who

act as Heads of the Divisions in which the project takes place. Furthermore, A-Secs have responsibility for ensuring that the agendas of the Divisions are aligned with the DFA's statement of strategy. The presentation from the project leaders produced shared understanding where the discussions surrounding the projects formed a sense of shared ownership and responsibility across the management spectrum.

4.5.1.3 The Need for Strategy

Advancements were made and realisations led to the need for an ICT Strategy – a first of its kind and with assistance of the SPU. Towards the latter part of the 2016, discussions surrounding the ICT strategy began to form in relation to the formulation and the development of issue identification. It was acknowledged that wide participation was needed to ensure a fruitful discussion and planning. In October 2016, senior management and the Head of ICT met where the creation of an ICT Steering Subcommittee was discussed as a mechanism to oversee and engage relevant actors in the discussion. The attendees noted that the "ICT strategy should be relatively short and that the first conversation should be on where the ICT Unit wants to be in 5 years' time" [I20]. This starting event had developed the initial momentum of an ICT Unit-focused transformation strategy. Due to a lot of projects having failed in the past and negative sentiment surrounding them, quick and small projects were key in gaining buy-in and developing initial success stories.

In the following month, November 2016, a document was shared that offered guidelines on the development of strategies – released by the Strategic Performance Unit (renamed Strategy, Governance and Change Unit – SGCU). The aim of the document was to assist divisions and units within the Department in the development of strategy and related aspects such as identifying strategic priorities for their respective units. This collaborative approach outlined by the SGCU engaged various units to outline how the prospective ICT Strategy might be leveraged to assist their work. The document introduced the notion of strategy and its development while also indicating what makes a strategy effective. The appendix of the document outlined four generic phases of strategy development: scoping/framing, planning, drafting and testing of strategy.

A month after the release of the document, an externally appointed advisor met with the members of the ICT Unit to discuss the role of ICT with regards to strategising. The EA was appointed by the Sec-Gen of the DFAT, to assist in guiding the development of the ICT Strategy. The correspondence between EA and the ICT Unit produced a preliminary framework under which the ICT Strategy would emerge. It was suggested to place ICT at the centre and using it as a strategic lever – whereas previously it was thought of as a backroom function. Also, the meeting highlighted the need to transform the role of ICT in the minds of the executive management team and the board as well as embassies. The EA noted that it was essential to maximise the potential of exemplary strategy work and to carry out a transformational shift in the minds of staff and groups across the Department. Additionally, the

meeting emphasised the need to ‘co-own’ and ‘co-create’ – where the strategy must capture a shared view of the opportunities that the organisation will exploit in the years ahead and should not be confined to the ICT community alone. Overall, the correspondence emphasised the need to build consensus to ensure organisation-wide collaboration as well as indicating the need for the ICT unit/directorate to focus on strengthening the ICT leadership team and team members. Additionally, the ICT Unit noted that the Department was complex due to multiple stakeholders, and they require engagement in order to produce support for the ICT projects.

4.5.1.4 Establishing and Revitalising ICT Governance

After the establishment of the strategic agenda for the development of ICT2020 Strategy, there was a need to establish the ICT Governance Steering Committee (ICTG-SC) to act as a governance mechanism within the Department for the project. The ICTG-SC met on the 6th of February 2017 with the aim of 1) establishing the Terms of Reference (TOR) to outline the roles and responsibility of the committee; and 2) holding presentations, which resemble a strategy exercise to kick-start the development agenda. After, an information searching exercise began through the use of discussions, surveys and workshops – which reflected the initial collaborative approach by incorporating Department-wide perspectives and stakeholders. Prior ICT representation at Board level was through the Director of Corporate Services, who had multiple responsibilities for other support functions such as compliance, facilities management and security. As such, ICT was never the central focus of board level discussion, and their representation was limited and restricted – while also being dependent on the Director’s agenda and knowledge of ICT subject matter. This led to prior ICT plans being siloed and often far removed from senior management across Divisions. Within this time frame, the ICTG-SC was formally established as a way to offer board representation as well as establishing shared knowledge, understanding and ownership between other senior management in relation to ICT.

As part of ICTG-SC’s formal establishment, a TOR was produced that outlined the role and responsibility of the committee. The committee was chaired by the Sec-Gen where the CFO acted as the deputy chairperson. The responsibility of the committee therefore was both strategic and symbolic. Strategic in the sense that the Head of the Department had the core responsibility and oversight of the project as well as the ability to mobilise resources; and symbolic as it displayed commitment throughout the Department which subsequently fosters buy-in, according to interviewees. Furthermore, the TOR states that the ICTG-SC was created at the request of the MB after an audit of ICT governance by the Evaluation and Audit Unit. According to sources familiar with the subject, prior ICT governance was limited and to some degree non-existent. For example, structures such as board representation, siloed ICT Unit, and the lack of project committees for ICT resulted in limited success in completing objectives that are aligned with user needs. Additionally, relational governance mechanisms were also limited as ICT has been described as something ‘out there’ with limited engagement in a cross-functional manner.

As a result, ICT visibility was low, and the ICTG-SC hoped to deploy governance mechanisms to ensure engagement and stakeholder participation to ensure user needs were met.

The TOR also states that the ICT-GSC would support the Sec-Gen and MB in strategic leadership of the DFA's ICT resources and capabilities to ensure that it maximises the value of its ICT investment while also ensuring the ICT management is consistent with good international practice. The committee had full decision-making rights regarding the ICT-enabled change programmes and projects being pursued by the ICT Strategy Framework as well as the ability to recommend the acceleration, refocus and/or closure of programmes and projects as deemed necessary. The Committee would meet on a bi-monthly basis and was comprised of representatives of the MB, divisional senior management teams and the ICT management teams. The specific areas of responsibility include providing assurance that:

- All managerial groups (Executive Management Team, Management Board, Divisional Management Teams, ICT Management Team) understand the transformational role and potential of ICT in the work of the Department;
- The Department has the strategic leadership and management capabilities essential to exploiting the full potential of modern ICT systems.
- The Department has a three to five-year ICT strategy and supporting action plan that are fully aligned with the Department's statement of strategy.
- Deriving from the ICT strategy, approve the ICT Unit Annual Business Plan and Mid-Term and End-of-Year Reviews and set priorities with regard to resource constraints (where appropriate);
- The ICT unit has the capability and capacity to set strategic direction, co-evolve a robust enterprise architecture, co-deliver prioritised change programmes and projects, and deliver fundamental ICT services in a cost-effective manner;
- Effective relationships between business units and the ICT unit are nurtured on an on-going basis and business units work in partnership with the ICT unit when delivering ICT-enabled change programmes and projects;
- ICT expenditure constitutes value for money and is in line with good international practice;
- ICT-enabled change programmes and projects have the necessary corporate support to guarantee effective delivery;
- ICT-enabled programmes and projects are supported by well-developed business cases based on modern VFM management practices that address issues of benefits, costs, and associated risks; and
- All key ICT-enabled programmes and projects are monitored and reported on as a matter of routine;
- Review the environment for ICT in terms of financial, operational and security risks; and

- Approve any amendments to ICT security policies.

During the establishment of the ICTG-SC through the finalisation of the TOR, three presentations were carried out to acquaint the committee with the context surrounding ICT and strategising. The first presentation was led by the Head of ICT as well as the ICT management team on the topic of “maximising the value of our ICT resources and capabilities: what works well and where are the major challenges and opportunities” [I34]. The desired outcome was to reach an agreement on the major challenges and opportunities in the ICT landscape across the Department. The second presentation was led by Director SPU and offered a shared conversation on ‘Becoming a Role Model for Others to Follow’ with the intended outcome of reaching an agreement on what ‘role model’ means for the Department and how the DFAT may progress in that regard. The third presentation was led by the EA on the theme of “Developing a transformational Statement of Strategy (ICT) for the Department and its Embassies and Consulates” with the desired outcome of reaching an agreement on a strategy development approach to be followed and used to guide the creation of the Strategic Framework and supporting Action Plan. Overall, these presentations sought to provide initial insight into the nature of ICT systems and their use as well as potential ICT inefficiencies. These presentations acted as the foundation on which larger discussions can take place to ensure mutual understanding and shared objectives between members of the ICTG-SC.

4.5.1.5 Commencing Collaboration

After the creation of preliminary governance mechanisms to oversee the ICT Strategy development process, the initial collaboration began to establish and understand the ICT landscape. Initial organisation-wide collaboration also took place in March under the guise of two events: first, a full-day ICTG-SC workshop where members of the committee covered the topics of ICT strategy development and related approaches as well as the identification of strategic issues. Secondly, a survey was released to gain input from various groups such as multiple Divisions and Units, the Management Board, the ICT Unit, missions and consular teams as well as members of the KMTF. While missions frequently stressed divergence with HQ strategy and systems and misalignment between objectives and requirements, the survey sought to ensure input from the wider Department to inform the strategising and allow for a proper and well-rounded analysis of the environment. Overall, the actions carried out during this phase contributed to the initial strategic framework that would form the basis of objectives to be carried out.

Two workshops took place in March 2017 and were led by the EA. The first workshop revolved around emphasising a collaborative approach to strategy development with deep levels of engagement across the organisation. Furthermore, the workshop approach set out the need for a bottom-up approach to

issue identification that determines the strategic priorities – which are reflected and contribute towards the preliminary strategic framework. The survey that was sent out – to be completed in April 2017– sought to identify issues by gathering input from across the organisation to ensure thematic areas were identified by all the divisions, units and missions. The approach outlined by the workshop suggested that cross-organisational teams of 15 management and staff should be assigned to each team. Furthermore, that the cross-organisational teams should engage in workshops to transform the themes and issues into goals, priorities, actions and timelines. Hence, the strategy development process allowed for social and intellectual capital co-creation by high-level engagement between the ICT unit and various other divisional entities. Finally, the second workshop was concerned with identifying strategic issues. The presentation placed ICT in the front and proposed how divisions could use and leverage ICT and related capabilities to address changes in the external environment, as opposed to remaining siloed within the ICT department. Overall, the ICTG-SC workshop sought to analyse the organisational system and foster a team-based approach to strategising which facilitates engagement and collaboration across the wider Department – as well as subsequently increasing the buy-in of projects.

Tables 1 and 2 [Appendix 3] present a thematic overview derived from over 50 submissions from across the organisation. The Department-wide engagement in the workshop's purpose was twofold: to identify thematic areas that would eventually form the basis of key pillars within the strategy as well as engaging staff to form a sense of shared ownership of the project which would create buy-in and ultimately push the agenda forward. The level of engagement and collaboration displayed in this exercise was unique within the organisation. Furthermore, participants have noted that the level of engagement overcame the perception of a 'box ticking' exercise that has been commonly deployed in the organisation. Top management support for this initiative allowed greater participation in the survey. Interestingly, many interview respondents have noted that this exercise was the first attempt for ICT to become more proactive in understanding user needs. Furthermore, the respondents noted that the ICT2020 strategy development was the first ICT Strategy.

A common priority listed was the need to communicate, where both the ICT Unit and the MB have noted internal communication (with staff) as an "enabler for change" and as an "ICT enabler". This fed into the need to place ICT at the forefront and communicate its usefulness to ensure collaboration and engagement across the organisation. This is essential, as some have noted that "Colleagues felt that it's important to not make the mistake again of allowing the ICT process to drive the development of new systems. The new systems must emerge from the genuine work needs of the Department" [I1]. Therefore, communication was essential in driving user-centric ICT-enabled change initiatives while also creating an atmosphere where engagement and collaboration on a project basis is fostered to ensure a successful ICTSDP. Many have voiced their input, requiring specialised systems that assist and

empower the employees across the Department and its missions to carry out their tasks. Another key priority identified was the 'interoperability' and an integrated approach to ICT system development, where many employees sought to have access to all information in a centralised manner to assist in decision making. This also acknowledged other statements for the need for collaboration, as integration fosters this. Overall, the issues identified make the case for an ICT-leading strategic approach where deployed ICT systems are aligned with user needs to allow for effective execution of their jobs – to empower them to provide good services for their citizens.

The inputs derived from the strategy exercise illustrate organisation-wide collaboration and the initial priorities for the ICT2020 Strategic Framework, specifically, the foundation on which the subsequent section will build using a bottom-up approach via staff surveys. Following this exercise, an ICTG-SC meeting was held on the 14th March 2017, where the Sec-Gen began the session with a statement noting the drivers for the development of an ICT strategy: 1) the nature of the organisation; 2) work programmes and resource constraints; 3) global messaging – promoting the DFAT brand; and 4) management of data – availability of use. Furthermore, the Sec-Gen of DFAT noted that the development of the ICT strategy was not focused solely on ICT and technology, but rather on the evolution of the ICT Department and how it would operate in conjunction with DFAT over the next three-to-five years.

4.5.2 Formation (April 2017 – April 2018)

The Formation phase was characterised by the emergence of initial structural components of the ICT Strategy – which was evident by facilitation actions through organisation-wide engagements such as workshops, discussions and surveys. Once the components emerged, they were reviewed through an iterative feedback process such as a peer-review conference to produce the ICT Strategic Framework and supporting Action Plan. The framework outlined key goals and priorities of the intended ICT Strategy.

4.5.2.1 *ICT Governance in Action*

From a governance standpoint, May 2017 made further progress in relation to confirming the TOR, update on preliminary progress of the ICSTDP, as well as an ICT Unit update. The changes to the terms of reference were approved by the MB and it assigned the Chair of KMIT as the communication liaison for the department as well as assigning administrative support for the ICTG-SC, the secretariat of the ICT unit. The Head of ICT and Director of SPU offered an update on the ICT strategy engagement session and noted successful engagement with ICT Unit, Senior Managers Network, KMTF as well as the Embassies abroad. Furthermore, the Director of Corporate Service Division discussed the Passport Reform Programme with respect to its methodology – suggesting that the development of a Target

Operating Model could potentially benefit the strategy development process. Also, the external advisor outlined the next steps of the ICT strategy development process by emphasising the importance of the consolidation exercise; specifically, to consolidate the themes into a maximum of four high-level themes and creating the subsequent action framework while also building focus groups for each area and engage the expertise of 'role models' to share knowledge and experience. Finally, the Head of ICT provided the committee with an update of completed, ongoing and future projects for the ICT department. At that time, four projects were completed, 13 were underway and three were commencing later in 2017.

4.5.2.2 DFA's Internal Survey Response

Responses to the Department's internal survey started to emerge after being sent out to various cohorts across the organisation for the purpose of contributing to the ICT2020 Strategy. Within the survey, staff were asked three questions: 1) what are the top three challenges facing the Department that can be supported by ICT?; 2) What is changing in your work area that would benefit from/be enabled by use of ICT?; and 3) What do you feel are the global changes that impact how we use ICT? These responses are used to drive the creation of the ICT Strategic Framework that will ensure that employees issues are acknowledged and allows for user-centric approach to ICT strategy – to also ensure effectiveness.

The survey responses incorporated input from various groups – over 300 respondents – throughout the Department including missions in several countries [Appendix 4]. The incorporation of a large number of staff reflects collaboration at many levels and facilitates buy-in into the strategy as well as issue identification useful for the development process. The vast amount of input was synthesised into seven thematic areas that would underpin key aspects of the ICT2020 Strategy. One interviewee who often felt neglected found that the survey was rewarding as it considered perspectives that were often overlooked from senior management [I14]. Another interviewee noted that the survey facilitated a two-way process and offered more credibility than traditional one-off surveys that were often conducted as a box-ticking exercise [I27]. The survey responses touched on key thematic areas, such as: flexibility, accessibility and remote working; internal and external communication; knowledge management and filing systems; cyber security and data protection; external demands; as well as citizen needs [Appendix 4].

4.5.2.3 Preliminary Goal Areas

The next ICTG-SC committee meeting took place on the 12th June 2017. The Head of SPU noted issues arising from the consultation of themes and issues derived from the engagement session and employee questionnaire. Overall, a detailed discussion was held in attempt to finalise and formalise the strategic framework and its components in order to commence the next phase of the strategy development process. The discussion also indicated possible workshop participants for each of the

goal areas of the ICTSF. The selection of workshop participants was crucial not only from a strategy standpoint but also from a career standpoint.

In conclusion of this phase, a draft of the preliminary strategic framework was developed as a result of the workshops and engagement across the organisation. The draft mission statement for the ICT strategy was: “to deliver outstanding public services using digital channels, facilitate new structures for collaboration within the Department and with external partners, protect our network’s security and empower our staff at home and abroad with best-in-class technology tools, in order to maximise the capability of the Department to deliver on its Statement of Strategy” [Appendix 5]. Three goal areas were identified and emerged from staff feedback; additionally, workshop participants were identified. A new iteration was produced that identified four goal areas. These workshops marked the commencement of the next stage of the ICT Strategy Development process which were aimed at refining and reviewing the strategic framework.

Goal Area 1 sought to: To provide excellent public services, delivered using customer focussed technologies, and to develop the ICT capabilities necessary to promote Ireland’s interests and influence internationally; and therefore, is aimed at empowering Irish citizens. *Goal Area 2* sought to collaborate seamlessly within the Department, and with external partners, using suitable technology platforms to integrate systems, share and retain knowledge, innovate and drive change. *Goal Area 3* sought to empower staff to deliver on the Department’s High-Level Goals by making available best-in-class technology solutions that support mobility, flexibility and real-time access to useable data.

While the goal areas 1, 2 and 3 emerged purely from staff feedback, *Goal Area 4* – ‘developing our resources and capabilities’ – was derived from an ICT skills audit to understand the key requirements for the ICT Unit in supporting the new ICT2020 Strategy. Towards the end of Phase 1, an audit of the ICT Unit was undertaken to identify issues that needed to be addressed in order to fully develop the ICT Strategy 2020 [Appendix 6]. In order to advance the goals identified in the strategic framework, ICT needed to consider issues regarding (but not limited to): ICT infrastructure, communications infrastructure, technological challenges, change management, agile principles, procurement capability, security policy as well as considering what capabilities need to be outsourced. Developing ICT capabilities would support the goal areas as well as the issues addressed by the survey respondents. For example, ICT could support communication, knowledge and data management systems, security and data protection as well as a remote working agenda. Additionally, this goal area had the long-term vision of transforming the ICT Unit.

4.5.2.4 Uncollaborative

In July and August 2017, several meetings were held to discuss the then current situation regarding the ICTSDP. The July ICTG-SC meeting revolved around the need for deep engagement as members of

the committee noted a poor response to request for participation in the upcoming workshop due to summer vacations. It was recommended that the workshops be pushed back to improve numbers and therefore maximise the results of the collaborative approach. Furthermore, representation was discussed as a requirement for an effective workshop. Members of the committee noted that the full Department was not yet represented and recommended some business units to be included while also noting that a mission from each region should be present to utilise their knowledge. Finally, it was agreed amongst members to include a Mission representative on the ICTG-SC to ensure representation for missions abroad. An ICT Unit update was also provided by the Head of ICT. The ICT Unit Budget – both capital and current spending – was on target. It also commented on staffing and noted that irrespective of sourced/contract staff, the Director of ICT would look across the organisation and identify current staff who may have had ICT experience to be included in the ICT Strategy – and eventually transferred. Finally, the external advisor suggested comparing the DFAT's ICT Unit to that of a modern ICT Unit by investigating three pillars: strategic development (governance, strategy and projects), programme delivery (major technological changes) and operation management (infrastructure) – to ensure proper structure in place to advance the ICT strategy implementation in the latter phase.

Another ICTG-SC meeting was held on 30th August 2017 to discuss progress on Phase 1 of the Strategy development process as well as providing an update on the ICT Unit. Once again, it was recognised that the timing of previous workshops for the goal areas coincided with the annual leave as well as with staff posting – which contributed to the poor response rate for participation. The central message of the committee meeting was to ensure a full response to ensure deep engagement across the organisation so that participants would have a sense of ownership of the strategy and ensuring that participation had endorsement from the Sec-Gen. The CFO stated that the strategy needed to be in place in December 2017 for the MB meeting – others agreed it was a realistic date for the strategic framework to be completed. Also, the Head of Missions and ICT Unit held a discussion regarding the workshop noting that it was difficult to match the needs of staff with technology and vice versa. The Head of ICT provided an update and mentioned that budget spending was on target and that permanent vacancies had been filled in the unit. Finally, the Secretariat of the ICT Unit discussed the draft “Appropriate Use of ICT Resource Policy” and agreed to make amendments and add new guidelines as well as sanctions regarding misuse.

Overall, while significant progress had been made in identifying key thematic areas via goal indication to produce goal areas, issues with participation had emerged that could potentially inhibit the effectiveness of a collaborative approach.

4.5.2.5 Amending and Reviewing the Goal Areas

A presentation was held with the intent to transition towards action by discussing the role of senior management as agents of change. Discussions took place and it was noted that the transition from intention to action required: 1) an understanding of the role of competency frameworks in supporting senior management development in PSOs; 2) an appreciation of how competency frameworks are used to underpin development and change in the broader senior executive/public service; 3) a firm grasp of specific competencies involved in leading change and delivering positive outcomes; and 4) a commitment to competency development in support of strategy execution. Furthermore, discussions were also held regarding leadership competencies. Overall, the presentation stressed the need for senior management engagement in the ICT2020 strategy respective of their current functions. Participants in these workshops – the members of the ICTG-SC – noted that the implications were a change in pace to usual strategy development and forced a new way to engagement that differs from traditional strategising within the Department. For example, an interviewee who partook in this exercise noted that “rather than saying ‘it was a management decision’ and the board championed it, it was more through people saying ‘look we need to do this’” [I30]. Furthermore, the interviewee noted that the approach to workshop for management board members was to facilitate an open discussion to get people on board and to participate.

The thematic workshops were held in October 2017 - a total of four workshops – one for each goal area. The workshops were composed of roughly 15 participants each to discuss the themes – which themselves were based on the issues identified in the initial workshop and staff survey. The workshops consisted of three main events, the evaluation of the current state, future state as well as the planning of the transition state. The aim was to engage in group work to facilitate feedback and discussion surrounding each of the thematic areas. Furthermore, the participation of various division and units as well as various hierarchies offered a unique experience to participants. For example, one interviewee noted that “the spirit of collaboration from the workshops brought new ideas. The ICT people could see the relevance of what they were doing- by understanding how their work aligns with the Department’s overall objectives” [I5]. Furthermore, it also induced a vice versa effect where business units were able to understand the technical constraints that the ICT Unit was confronted with. Often times, interviewees and staff were frustrated due to technology, where they believed that ICT inhibited their work. The process of collaboration therefore confronted these issues in a productive manner and allowed for a more cohesive and precise development of an ICT strategy and offered various perspectives. Challenges were also noted, where many participants noted that schedules of staff and the lean structures meant that limited bandwidth could be given – which had implications for the pace of development. Another interviewee noted that “there was definitely a ‘PR’ exercise that took place. That led to a line of communication opening up, where people initially thought there were no easy

access points to have their ideas heard. So, in that regard, it worked really well” [19]. The thematic areas are shown in Appendix 7.

External members of the Department were also included in the workshops for Goal Area 4. These external members were experts from across both the private and public sector who had experience in ICT and were able to offer insights into ICT-centred strategising. This approach allowed for evaluation to be performed premortem in that experience of the experts allowed for potential issues and barriers to be pinpointed. One external consultant noted that “one of the challenges for other government departments in relation to DFAT – not everyone understands the sensitivity that is processed by the DFA” [110] – and furthermore, stated there was a “need to note that the ICT Strategy was developed in a post-Snowdon, Wikileaks era. Access was available to diplomatic cables that had been intercepted globally and published” [110]. Furthermore, a Head of ICT from another Government Department joined the discussion regarding public sector strategising when it comes to ICT. This allowed for additional insight.

The workshops were central to forming the ICT Strategic Framework and supporting ICT Action Plan which is composed of specific goals areas, the positive advancements, challenges as well as related priorities and actions. These can be viewed in Appendix 8.

4.5.4.2 Peer Review Conference

After the thematic workshops that resulted in the emergence of the ICT Strategic Framework, a Peer Review Conference (PRC) was held. The PRC was a day-long session comprised of collegial discussions surrounding each goal area and allowed participants to review and critique aspects of the priorities and supporting actions. Furthermore, the ultimate aim of the PRC was to produce a high-quality strategy statement – the ICTSF. The teams taking part in the peer review were drawn from across the organisation and complemented by members of the ICTG-SC. The programme for the PRC can be seen in Appendix 9.

The process of the PRC comprised of four key elements: 1) the SPU provided the final drafts of the working notes to the goal area teams a week prior to the PRC; 2) the teams conducted a review of the work notes to their presentation at the PRC; 3) a presentation was given on the working notes, critiqued by the team and followed by a group dialogue; and 4) the teams provided SPU with copies of the working note in addition to summary reports. The content from the peer review discussions can be viewed in Appendix 10 – which consists of four tables correlating to each goal area and contains synthesised content from the document discussions that took place.

4.5.4.3 Changes in Governance

The aim of the prior stage was to move from intention to action through the creation of the ICT Strategic Framework that set out key priorities and supporting actions. To complement the transition,

changes to governance were made. A meeting was held in December 2017 to begin the transition of the next stage of the ICTSDP. The agenda for the ICTG-SC was to provide an update on the process of the ICTSF as well as the upcoming ICT Strategic Action Plan (ICTSAP) as well as the role of the ICTGC. Furthermore, the discussion was based on forming an ICT Strategy Steering Group (ICT-SSG) to oversee strategy implementation as well as an ICT Strategy Implementation Team (ICT-SIT) in delivering strategic goals, priorities and actions as well as the development of the implementation roadmap and proposed implementation planning workshop in January 2018.

The ICT-SSG members were to be composed of two MB members, two PO network members as well as the chair of the implementation team. The proposed rules of engagement were: providing oversight on behalf of the MB as well as guiding and supporting the implementation team while also reviewing progress on a quarterly basis. The ICT-SIT members were to be composed of a chairperson, as well as the co-leaders of each of the four strategy thematic areas. The role of the committee was to meet bi-weekly, starting in January 2018 and provide updates to the ICT-SSG, MB, PO Network as well as the wider organisation.

Regarding the implementation roadmap: a) the ICT-SSG and ICT-SIT were to engage in a facilitated off-site one-day implementation planning workshop in January 2018; b) ICT-SSG and ICT-SIT were to co-create and co-own the implementation roadmap; c) ICT-SSG and ICT-SIT were to agree on: business/ICT partnering as appropriate, maximising development opportunities for staff, a small number of priority areas in which to build new capabilities through participation in advanced educational programmes, as well as possibility of eight co-leaders acting as the nucleus of the new Middle Management Network.

The structure outlined allowed for a collaborative process through the notions of co-ownership and co-creation. The reason is that the ICT-SIT members were comprised of four groups – one for each goal area. The groups comprised of two co-leads each – with one ICT member and one business-unit member. The aim of the co-lead model was to improve communication between ICT and the business, which has not been achieved previously.

4.5.4.4 Finalising the Formulation

The ICTG-SC met in January 2018 to review the upcoming agenda and to propose implementation arrangements centred around the creation of the two committees (ICT-SSG and ICT-SIT) as well as producing new implementation arrangements for the KMTF. Furthermore, the agenda outlined a discussion on the development of the implementation roadmap via implementation planning workshops to be hosted early 2018. Finally, implementation priorities were to be discussed in relation to ICT Capacity Development.

The aim of ICT Capacity Development was to address ICT capability issues and touched on infrastructure, services, security policy, target operating model, solutions development, disaster recovery, ICT organisation structure and resources, ICT skill sets as well as financial resources – written by the Head of ICT. These ICT capabilities were aligned with the strategic actions outlined in the ICT strategic framework and the ICT action plan. Therefore, they were essential in supporting implementation of the ICT Strategy 2020.

The ICT Unit of the DFAT offered a diverse array of *ICT Services* – including a variety of systems (passport, consular, time management, financial, etc), productivity management as well as communication technology. Also, the ICT Unit was working with various business units to develop new systems for business analysis and analytics. The challenges posed were the continuous evolution of business requirements and their need for new tools to deal in a more agile, accessible and mobile manner. Therefore, it was proposed to add new services to the ICT portfolio “based on user needs emerging from the strategy”, such as contracts, events management and grants management systems being developed in 2018. Further issues related to user behaviour as well as the ‘burgeoning and chaotic file system’ and thus required a more effective approach that requires a ‘Government Build-to-Share solution’. These actions are related to Goal 2 (promoting seamless collaboration) and Goal 3 (empowering our staff) of the ICT Strategy.

Security Policy is another component of the ICT Capability Development and is vital to the success of DFAT. According to the report, the “the threat landscape for cyber-attack is ever increasing” – where the ICT Unit has a specialised Security Policy Team to oversee this area. The challenges – from a user perspective – is that business units seek quicker and more access to information but argue that security measures may hinder the flexibility and fluidity of access. From an ICT perspective, the constant and face-paced change in the threat landscape was making it difficult to provide agile services while ensuring high-levels of security. Actions included expanding the ICT Unit’s ‘Security Awareness’ programme to reach all staff by end of 2018. Finally, the last hurdle was to get the MB to formally accept some risks associated with this transition. These arrangements and changes relate to Action 4.4 of the ICT Strategy, which were for “implementing an updated security police and posture better aligned to the needs of business” [Appendix 8].

The then current status of the *Target Operating Model* was that various software platforms in the DFAT were at various stages of maturity. The challenge of the organisation and ICT Unit was the pace at which updates were required to keep up with all the changes – which is manifested in the financial cost of equipment upgrades and the work force required to affect these. Other challenges included ongoing updates of security patches applied to systems as well as unclear future usage patterns of voice and video services – which makes investment decisions difficult. Associated actions included creating a model that delineates infrastructure and service needs as well as potential deliverables –

including cloud migration opportunities and the benefits of building share application. Additionally, actions were required to continue: 1) existing work to maintain updates on software version; and 2) warranty and support is continued during the duration that the local ICT infrastructure is used. These related to Action 4.3 of the ICT Strategy – which refers to “enhancing the capability and capacity of the Department to deliver ICT-enabled business change programmes” [Appendix 8].

With regards to *solutions development*, the DFAT had a mix of business solutions sources in the following ways: 1) developed in-house using SharePoint as a development tool with outsourced assistance; 2) procured from market sources and delivered and supported under contract/SLA; and 3) delivered as part of build-to-share or Government shared services. Challenges within the Department included the pressure to complete digitalisation of the manual work processes. Additionally, new systems were required for implementation based on user sentiment in various business areas. Resource constraints were also an issue that affected business analysis and project management for in-house and procured solutions. Finally, the last issue revolves around not having a standard methodology (e.g. Agile) for the development of solutions, which created procedural issues with regards to Project management. Proposed actions for implementation related to ICT Strategy Action 3.1 to “strengthen our capability and capacity to identify and adapt new technologies and support continuous innovation and change”. More specifically, the ICT Unit would work in conjunction with relevant business units to develop a standard methodology for project deliverables – by outlining the phases of the processes and the responsibilities of various stakeholders. Additionally, the ICT Capability Development report also noted that “the Department needs to be able to find a way to commit full time resources to business analysis and project management and other roles associated with the delivery of large-scale ICT projects”.

Another aspect of the ICT Capability Development review was concerned with *Disaster Recovery Capability* – where the Head of ICT noted that it was difficult to have a single recovery plan due to the scale of the DFAT’s physical footprint as well as the complexity of its ICT network and services. However, in order to mitigate risk, the ICT Unit had adopted a risk minimisation approach by deploying various DR facilities and backups. The challenges associated to this component of the ICT Capabilities were the need to enhance the DFAT’s capability to “recover from an abrupt loss of ICT facilities or the infrastructure on which they depend” as well as to “broaden the range of scenarios we can recover from”.

While the ICT *Organisational Structure* performed well to support the existing service portfolio, the ICT Unit needed to focus more on enhanced services, change initiatives and strategic development. The ICT Unit had a multiple reporting structure which adds to the complexity. In order to achieve Action 4.2 of the ICT Strategy Framework – the modernisation of the ICT UNIT and the reconfiguring of its resources and capabilities to better meet business needs – required that the ICT organisational

structure be extended while also requiring increase in technical skills by employees or recruitment of external individuals. Additionally, the report also outlined the necessity for skills and resources in data analysis, and thus needed to be included in the implementation roadmap to successfully achieve this component of the strategy [Appendix 8].

Regarding *ICT Skills Sets*, it was noted that “few ICT staff members have specific technical qualifications and skills. However, there was “considerable ICT knowledge and experience”. This allowed the staff to work with assistance from ‘external expert’ – which was procured in the areas of: communication, Cisco network engineering; Microsoft design and support; cyber security engineer; Microsoft SharePoint development as well as technical support. The key challenges associated with this component of the ICT Capability Development were that “the maintenance of these resources, performing vital functions is dependent on the ability of the market to provide for such roles and the availability of budgets to fund them”. In order to address the ICT Strategy Framework, Action 4.2.d is to ‘Assess the Department’s technical ICT capabilities, identify key gaps, and determine appropriate capability building measures’, and actions taken revolved around training the ICT staff in areas of CRM support, procurement as well as business analysis [Appendix 8].

4.5.3 Execution (May 2018 – June 2019)

Execution (Phase 3) is characterised by the transition towards action – and more specifically, acting on the pre-determined goals and priorities set out in the ICT Strategic Framework. The outcome was the ICT Action Plan artefact that operationalised the desired priorities through identification of change agents and the allocation of resources. To do so, amendments to governance were made and project oversight was created. From a development standpoint, the engagements between ICT and Business groups were developing shared domain knowledge where the previous business-ICT language barrier was broken down and the business units were gaining ICT expertise. Due to emerging issues and environmental changes, a mid-term review was held to review progress and make amendments to the implementation process. The strategy implementation planning phase was concerned with formulating and formalising the ICT Action Plan in relation to the ICT2020 Strategy. Furthermore, the sequence of events began in May 2018 and lasted until June 2019 and consisted of workshops, meetings and review processes while also emphasising the development of change agents (e.g., on-the-job leadership) and collaborative learning. Overall, the outcome of this phase was to develop implementation arrangement and a roadmap to ensure the success of the ICT2020 Strategy.

4.5.3.1 Workshop: Co-Lead Kick-Start

An implementation planning workshop was held for the ICT-SIT and members of the MB while being hosted by the Director of SPU, Head of ICT as well as the EA. One of the core objectives of the workshop was to foster a shared understanding between the MB and the ICT-SIT regarding their roles in

promoting excellence in the implementation of the strategy across the Department and its Mission. Furthermore, it sought to promote group dialogue among the members by covering key thematic areas that are deemed central to effective implementation. For example, discussion formed around the notion of developing in-house capability for the ICT-SIT by identifying key opportunities for its own development and growth while also exploring forms and functions of the ICT-SIT to determine how it can best accelerate the implementation of the ICT2020 Strategy. The outcome of the workshop was a mentoring note prepared for the ICT-SIT and MB – which would ultimately serve as a vital resource by capturing the key dialogue between the participating members as well as benefiting the ongoing development of the ICT-SIT.

The ICT-SIT was comprised of eight members and evenly divided between ICT Unit and Business Unit members in a co-lead format. The workshop, attended by those members sought to promote discussion surrounding the ICT2020 Strategy by looking at priorities, actions as well as resourcing plans. The workshop began with an overview of the strategy development process to date, with the investigation of the ICTSF and Action Plan. From there, a resourcing plan was discussed - specifically how to support the implementation arrangements. It was noted that the ICT Unit had increased their annual budget by EUR 3m in 2018, for both staff resourcing as well as projects related to the ICT2020 strategy deliverables. For example, the Grants Management and Contracts Management System had tenders awarded. Furthermore, the previously underfunded SPU received additional financing for the Project Management Office (PMO). The office was not itself purely responsible for the ICT2020 Strategy, but for major projects across the whole of the Department as well and works under the responsibility of the Director of SPU. The creation of the governance mechanism at project-level was designed to ensure a coherent project management-based approach. Previously, projects were conducted in a non-unified manner where each Division and Unit adopted a separate approach. Finally, the workshop also set out the upcoming roadmap. At a micro-level, co-leads (ICT-SIT) were to meet weekly regarding the projects and were required to commit 20% of their time individually (1-day per week) to support implementation of ICT2020 Strategy. Furthermore, The ICT Knowledge Management Sub-Committee was to meet on a monthly basis and act as oversight. Much broader goals include 1-year goals (Annual review of progress) as well as the two-year goal which included the mid-term review of strategy in May 2020.

4.5.3.2 Implementation Progress

In September 2018, a progress meeting took place by the ICTG-SC in relation to the implementation arrangements since the workshops in May. The committee meeting began with the discussion by the CFO who sought to examine the primary function of the subcommittee in relation to the oversight of the ICT-SIT as well as setting out reporting arrangements for this relationship. According to the CFO, the role of the ICTG-SC in relation not the ICT-SIT is also about offering credibility and authority to deal

within the Department and to engage in decision making. Furthermore, the CFO emphasised that constant communication was required between the two groups to ensure that initiatives are gaining momentum and that progress was actually being made. The CFO also noted that certain ‘blockages’ needed to be resolved- specifically, issues pertaining to the co-lead structure. Due to the level of churn within the Department, co-leads were rotating, and vacancies were arising. While the co-lead structure had advantages such as creating shared understanding and offering co-ownership between ICT and Business, the levels of churn were reducing some level of progress. Other issues that was being addressed was commitment. It was outlined in the previous section that co-leads should allocate 20% of their week to progressing the strategy agenda, but this did not happen. Members of the meeting noted the need for Divisional heads to promote the need to allocate this time and support the co-leads on this.

Furthermore, other thematic areas were also discussed. The Director of ICT introduced the key projects under each area of the ICT Strategy Framework and provided progress indicators for each component. Also, discussion focused on Security Policy, Data Classification as well as the development of the Department’s CRM. An update on MyGovID was also provided and how it transitioned into Phase 2 of the Online Renewals Project. The Director of Corporate Services outlined the proposed movement of Foreign Birth Registration from the Consular Section into the Passport Service – which would be under direction and management of the Integrity Unit. Additionally, the CFO noted the manual process involved and stated that digitisation would be examined in this process in terms of the next PIPS Tender.

A former Ambassador and Former Director SPU discussed the flexibility of the ICT Strategy with regard to adapting on-going project priorities and adding new projects that are aligned with the strategy pillars identified in the ICT Strategy Framework. The former Director SPU noted the use of the forthcoming innovation portal as a mechanism in determining feasibility and suitability of new ICT projects.

The Director of ICT noted issues with regards to the CRM project and listed two ‘red flags’: 1) A GDPR issues for handling of contacts; and 2) limited availability of Business Unit members in DCD to work on the Grants Project with the CRM project. The director of SPU argued that substantive discussion would be required in the future regarding CRM project – and recommended the Project Managers to be invited to ICTG-SC meeting to brief the sub-committee on progress. Also, the CFO noted that the Data Protection Office would be central to the completion of the Privacy Impact Assessment with regard to the Contact Project. The CFO also noted that an ‘in-house’ capability should be developed and levered to provide necessary oversight and direction to ensure that project is GDPR compliant. The Director of ICT identified that the professionalisation (increased maturity) of ICT Unit would be supported by the completion of a skills audit – where available skillsets are established and understood how to best

leverage/utilise them within the ICT Strategy. Additionally, the ICT Unit: would adopt two apprentices under an OGCIO sponsored Apprenticeship Programme. Finally, other important discussions were held on needing to create cost budgeting and progress metrics to ensure effective implementation of the ICT Strategy.

4.5.3.3 Implementation Update

The ICTG-SC met in January 2019 to discuss the progress made by the co-leads regarding the implementation planning of the ICT2020 Strategy. More specifically, it was noted that the TOR regarding the ICTG-SC might need to be modified to reflect a transition in objectives and actions. Furthermore, the ICT Action Plan was commented on, and related challenges outlined. The TOR needed to be continually updated since its original creation and was now currently in the third iteration. Furthermore, the TOR needed to reflect the current projects being undertaken in the ICT2020 Strategy and would therefore increase the communication frequency through which the ICT-SIT and the ICT-SSG update the ICTG-SC, the motive being purely derived from a governance standpoint.

Furthermore, the development of the progress report on the ICT Action Plan was discussed. The CFO noted that the report would form the basis of the report presented to the EMG and give an update on the implementation roadmap. Other participants noted that the report should be made available to all in the organisation via the intranet, and on a quarterly basis. This would allow staff across the Department to view the progress which would have positive benefits such as visualising the on-going change and would reflect an open and consultative approach. Additionally, members of the committee noted the need for the Action Plan reports to constantly refer back to the strategy as well as individual actions of the co-lead to ensure proper tracking.

Regarding the progress of the Action Plan, some participants noted issues with regards to time. One co-lead for Pillar 4 had left the Department – therefore required an urgent replacement. Additionally, other participants noted that it could be difficult for some business colleagues to commit due to being busy with other Departmental work. Since resources were tight, some noted the requirement for a ‘solid framework and overarching plan’ that would identify where the most demands and support were needed. The following actions were outlined: 1) finalise progress report for the MB/EMG; 2) the creation of an ICT Implementation Newsletter; 3) request to provide archivist to review digitisation requirements for FBRs; 4) review resources for the ICT unit; and 5) consider how more time could be made available to business leads and replacement for business lead on pillar 4.

Overall, significant progress was being made but some barriers were created regarding co-leads as well as prior issues regarding time management of the co-leads. Furthermore, the ICT Implementation Newsletter release commenced, with the first appearing on the intranet in February 2019. An example

can be seen in Appendix 6. The newsletter offered visibility of the project across the Department. Other challenges also included staffing, the meeting minutes state that “ICT Capacity needs to be enhanced as the MB has approved 7 new posts. This would need recruitment or redeployment within DFAT. ICT had approval for 27 staff, but at that point had only 18. Outsourcing and backfilling would be considered as a short-term solution. The required action as outlined was to review filling of the ICT posts in order to fully support the ICT Strategy implementation process.

4.5.3.4 Collaborative Workshop

A mid-term review took place on June 10th 2019 in the form of a collaborative workshop after being proposed by the ICTG-SC in May 2019 – with the aim of developing on-the-job leadership while also emphasising the need for collaborative learning to foster engagement throughout the Department. Furthermore, the review sought to take stock of current progress and to identify and subsequently overcome issues and barriers that had arisen to date. The outcome of the mid-term review was a report that would be used to guide the development of further implementation planning work. The process of the review consisted of six sessions. Four sessions were dedicated to reviewing the four goal areas. The other two sessions were aimed at reviewing the structure and function of the ICT-SIT and the resourcing of the ICT Unit.

Sessions 1 to 4:

Sessions 1 to 4 were hosted and led by the ICT-SIT, which is comprised of the co-leads for each goal area. Their sessions and presentations addressed the following questions: 1) what have we achieved within this GA between January 2018 and June 2019?; 2) what are we planning to achieve between July 2019 and December 2020?; 3) what, if anything, will roll forward into 2021?; and 4) what are the key implementation challenges being encountered and how might they be addressed from here on?

The achieved and planned ICT2020 Strategy projects can be seen in Table 6 below. Generally, significant advancements had been made. Particular attention was given to the Contacts Management System, e-PQ System as well as the Remote Access Point devices. Contacts Management had been attempted numerous times since 2012 and had now been achieved in that it had been piloted across the organisation – in six missions and three HQ business units. To date, 10,000 contacts had been imported and there were current actions in place to streamline the process for importing the contacts from the legacy system. This would overcome issues that emerged from diverging from status-quo legacy systems where staff are usually hesitant to transfer. The e-PQ systems had also been proposed for over a decade with advancements currently made. According to the co-lead, management support and approval for the project had streamlined the process and allowed for it to progress, whereas in previous years the e-PQ system was of a voluntary nature and no Departmental resources assigned. Finally, the Remote Access Point was the most highly sought-after project across the Department

where relevant staff were given 'Devices' (DFAT staff colloquially refer to them as 'onesies' – for 'all in one' functions) that allow them to access Department systems remotely. This had been noted by all staff to be a game changer.

Achieved		Planning
GA1	- Implemented responsive designs for websites. - Implemented new Webchat platform. - Finalised proof of concept for MyGovID integration - Piloted Contacts Management System - Enhanced the Foreign Birth Registration Systems	- Develop DFAT design principles methodology for new projects. - Integrate MyGovID in DFAT services - Remove access to Contact Management legacy system. - Award vendor contract for Foreign Birth Registration archive project
GA2	- Migration to and launch of ePQ System. - Promotion and expansion of HIVE platform for cross-organisation collaboration - Records Management business case submitted to POB	- E-Correspondence (e.g., increased outreach, systems testing and co-ordinator training session, phased launch of system in 2019 Q3) - Records Management (Research, policies and guidelines and development of initial project document)
GA3	- Remote Access Solution (e.g., development of new 'single device' with successful pilot and 34% rollout to HQ and Mission) - Grants Management System - Innovations Portal (e.g., project initiation document, stakeholder identified, and project approved)	- Data Analytics (e.g., assignment resources, identify stat stores and methodology for data management) - Complete rollout of Remote Access Solution and Grants Management System.
GA4	- 2 additional staff members in ICT to address resource constraints. - Re-configuration of the ICT Unit - Risk-based approach to ICT security (e.g., updated security policy, improved monitoring, security awareness training and remote access 2FA).	- Continuous policy amendments - Implementation of ICT Support desks solution - Data Classification - Improvement in ICT Skills - Project management approach to manage selection pipeline and delivery

Table 6: Progress Report from ICT-SIT

All eight co-leads from the four GA's noted challenges associated with implementation planning. All co-leads noted that limited time due to expanding 'day-jobs' created a conflict in work time and priorities. Furthermore, other issues pertaining to changing business priorities where business needs are dynamic and therefore ICT alignment proved difficult when conducting projects over a longer timeframe. It was noted that wider business engagement was needed to facilitate communication and understand on-going needs to ensure these were being met and addressed. It was part of the role of the ICTG-SC is to address this. Additionally, some GA projects had issues noted with buy-in as well as issues of legacy systems remaining dominant which would reduce the uptake of new systems that were

being put in place. Some of these issues were being addressed with communication and training while also attempting to phase out legacy systems on a planned basis. Finally, another key area addressed was the shortage of skilled workers, especially pertaining to the data analytics component of the ICT2020 Strategy. To counteract these changes, it had been proposed by the co-leads to do on-boarding and offer staff training sessions to ensure proper skills are fostered to assist in the delivery of the strategy.

Session 5: Review of ICT Unit Resourcing:

Discussions led by the Head of ICT sought to explore the then current resources of the ICT Unit. Within the audit conducted, the majority of staff roles were filled with two being vacant – for the business development and engagement roles. It was noted that the then current ICT staff did not have sufficient ICT qualifications and also lacked ‘Business Skills’ – such as business analysis and finance. Furthermore, there was also a lack of knowledge of the business areas (divisions and units) outside of the ICT Unit. As such, there was a need to upskill members of the ICT Unit through training and development, as well as a potential push towards attaining formal qualifications in relevant domains. Additionally, there had been lower social ICT-business alignment as there was a lack of communication and engagement. While the co-lead model fostered this relationship, greater engagement and understanding of the ICT Unit with business divisions and units was required. The Head of ICT noted that by December 2020, the ICT Unit would: 1) create a training officer role to promote training and self-development; 2) create a business analysis role to promote and assist with ‘business skills’ and 3) address training requests outlined in the PMDS via One Learning and other training avenues that include e-learning options.

4.5.3.5 Midterm Review

The following sets out a few of the key insights derived from the mid-term review, which was facilitated by the EA. The related mentoring note commences by outlining the success of the organisational approach to ICT that required the involvement of numerous committees and business units. While success has been noted, “there are new opportunities to deepen the Department’s collaborative approach to ICT strategy work” [Appendix 12] – which will require raising levels of resource sharing to ensure proper implementation and effectiveness of ICT-enabled business change initiatives. It has been noted that both business and ICT units will require renewed commitment in sharing resources to best leverage value derived from new ICT investments.

Another aspect of the review raises the notion of leadership, especially the role of the ICTG-SC and the MB in providing vocal support throughout the development of the ICT strategy. It was noted that the ICTG-SC had offered a leadership role in regard to all phases of ICT strategy work and that its stature reinforced the adoption of the organisational approach to ICT. It was also noted that the involvement of members of the MB in the ICTG-SC was highly valued and appreciated – due to the fact that it offers

relational support. It was also noted that the ICT-SIT fulfilled a strong leadership role, with regards to implementation. However, it was also stated that “there is a need to remain flexible and agile and to reconfigure the ICT-SIT as and when the need arises” [Appendix 12], which will include changes to the business co-leads on a more frequent basis to increase the rate of change taking place during the implementation phase. The SGCU also played a pivotal role in the aspects of ICT strategy development, and during the implementation phase, the SGCU and ICT Unit partnership was vital to maximising and leveraging business value from the ICT2020 strategy implementation.

Regarding the DFAT’s implementation capabilities, there was a need to obtain a better balance when utilising resources to support implementation. The review sessions noted that most of the resource burden was associated with the ICT unit as opposed to other business units who also gained value from the proposed ICT investments. However, these business units were not releasing their resources to promote and ensure implementation success. As such, it was being argued that the business units needed to contribute greater resources to the project to ensure that business value for their units was achieved.

The mentoring note also noted that there is ‘strong belief’ that the business value derived from the ICT Strategy and investment could be “significantly enhanced through the presence of a series of roadmaps for the future in relation to the Department’s data, processes, applications, and technology (including future focused technologies such as Artificial Intelligence and Cloud Computing” (DFAT, 2019c: 9).

4.5.3.5 Recurring Set of Challenges

The mentoring notes derived from the six sessions identified a set of recurring challenges. For instance, collaborative working is symbolic of co-chairing, co-leading, co-creating and co-owning. It was noted that moving away from this ‘togetherness’ had the potential to significantly inhibit and impede progress on implementation.

Another issue noted was the constant tension between the work required for strategy implementation and the ‘day job’ of the employees. Often, the ‘day job’ took priority where the members were unable to attend strategy meetings and related group work. This challenge was attributed to “an underdeveloped understanding of the pivotal role of senior managers in strategy work in civil and public services organisations” (DFAT, 2019c: 10). It also became apparent that when the Department’s priorities shifted there was a knock-on effect on resources that were originally committed to strategy implementation. It was suggested that these shifting priorities needed to be addressed and that ICTG-SC and ICT-SIT intervention was required to ensure that the pace of change was not negatively influenced. Another issue requiring attention was capability. It had been noted that “the capability and capacity of both business and ICT units to collaborate effectively on strategy implementation work is

affected by the availability of skilled business and ICT resources that can readily combine the requisite business and ICT knowledge, skill and expertise” (DFAT, 2019c: 10).

Finally, the management of change was also a major challenge. It had been regarded as the ‘more pressing challenges’ of the strategy implementation phase and manifested itself in a number of ways. Leadership had been identified as a challenge regarding the management of change, specifically the need to foster strong leadership at all levels to support and embrace ICT-enabled change initiatives in an organisation-wide manner. Primarily, this required leadership across all business units while at the same time exploiting and nurturing the potential of emerging leadership networks. Secondly, it required buy-in to and ownership of ICT-enabled change initiatives – which required early commitment to the adoption of the ‘new ways of working’ to ensure the effectiveness of the new ICT systems. Thirdly, it required the fostering of an integrated approach to the management of both organisation and technological change to ensure that social and organisational aspects were aligned and integrated with technological aspects of change. There was also a need to be attentive to the behavioural and cultural aspect of change as this is a prerequisite to the adoption of new ICT systems. Another behavioural aspect that required focus was the need to ensure an effective and constant approach to communication to update the Department and its Missions at all times. Finally, there was a need to deploy ‘change leaders’ through to assist in the implementation of the ICT2020 strategy, as well as clarifying the role of such leaders in executing implementation in addition to clarifying the role of the new formed Business Development/Engagement (BD/E) function within the ICT Unit.

4.4.3.6 Midpoint Corrections

As a result of the mid-term review, several corrections were made to remove recurring issues and to enable implementation planning to continue. These corrections were made in relation to the various governance committees such as the MB, ICTG-SC as well as the ICT Unit. The MB was advised to promote active engagement from Departmental members in the strategy work to ensure that the role of ICT in modernising and reforming the work of the Department as well as its Missions were fulfilled. This is essential, where the engagement can be developed and nurtured over time via a series of on-the-job leadership development interventions where members of various committees (e.g. MB, EMT and ELN network) work in conjunction to oversee the execution of the DFAT’s ‘family of strategies’.

For the ICTG-SC, there was a need to act strongly in the capacity of leadership, to: 1) strengthen and reaffirm the SGCU-ICT partnership and engage in immediate re-configuration of the ICT_SIT to ensure that the new business co-leads have ‘skin in the game’; 2) ensure the engagement of staff from various Missions abroad and allow them to play a visible, pivotal and sustained role in all of the ICT strategy implementation work; 3) encourage the investment of the newly formed BD/E function within the ICT Unit to ensure their act in a lead role in the development of a series of implementation roadmaps for the future with regards to the Department’s data, process, application and technology; 4) promote

best practice; 5) increase the rate of change with regards to Records Managements, Grants Management and Collaborative Systems.

Advice for the ICT Unit (in general) drew attention to: 1) working collaboratively with the SGCU and the ICT-SIT to produce an updated ICTSF and ICTAP for the next ICTG-SC meeting while considering the discussion that had taken place in the six review sessions; 2) developing a relationship with the Business Development and Engagement function; 3) supporting ongoing ICT-enabled transformation of the ICT Unit via focused mentoring to members of the ICT leadership team – with emphasis on the strategic role of the ICT leadership team and the adoption of best practice in career development and planning for its members; 4) engagement in a focused strategic communication programme to ensure wide-spread acknowledgement of the strategy within the Department.

Specific advice with regards to the Business Development and Engagement function within the ICT Unit was to engage more collaboratively with the SGCU and ensure that it was well positioned to take a lead role in the advancement of ICT within the Department as ICT becomes increasingly mature. Furthermore, it needed to assist in the management of change for current and future ICT-enabled initiatives. This had been created as a response to ‘management of change’ being identified by workshop participants as one of the most pressing recurring challenges encountered during the implementation phase. As such, the adoption of a capability maturity framework – in addition to supporting leadership development interventions – would accelerate the rate of change and lead to more ‘swifter’ strategy execution.

4.6 Conclusion

The narrative section outlines the sequence of events from 2000 to 2019 in three distinct periods, based on strategising characteristics. The longitudinal perspective offers insight into Business-ICT social and intellectual alignment over time and prepares the reader for the upcoming sections that develops a process-model of strategic alignment in public service organisations. Furthermore, the two initial analytical periods (2000 to 2011; 2012 – 2015) provide requisite knowledge required to understanding the core ICT2020 Strategy development process by providing contextual insight into the structural and strategic components of the Departments. The next section will present the process model based on alignment mechanism.

Chapter 5: Theoretical Framework on Dynamic Strategic Alignment

5.1 Introduction

The following chapter introduces, prepares and outlines the theoretical framework that emerged through the investigation of the Department's strategy development process – and therefore illustrates how strategic alignment unfolds over time within a public service organisation. The theoretical framework emerged by viewing the strategic development process through a processual methodological lens to understand the embedded nature of alignment mechanisms in strategy work.

Section 5.2 presents the theoretical framework in tabular form to delineate the process activities under each mechanism, within each dimension of strategic alignment across the discovery, formation and execution phases. Section 5.3 qualitatively supports these activities by providing evidence based on primary data from the interview participants. The aim is to instil confidence in how the mechanisms are enacted and deployed in strategy work during the ICT2020 Strategy development process. Section 5.4 matches the framework against the literature – by outlining how the framework shares both similarities and differences in relation to structural, social and technical alignment. Section 5.5 concludes the chapter and offers a transitional paragraph in preparation for Chapter 6.

5.2 Theoretical Framework

The theoretical framework is presented in Table 8 and outlines the structural, social and technical dimensions of strategic alignment over time across the discovery, formation and execution phases of strategy development processes. The alignment dimensions are derived from the literature while the phases reflect patterned actions of the ICT2020 Strategy development process which were derived from primary and secondary data set out in the narrative while supported by conceptualisations from the literature. While the alignment dimensions are often treated as a singular lens (under the aegis of strategic alignment) from a cross-sectional standpoint in literature, the framework presented here offers an overarching perspective whereby the three dominant alignment dimensions (including their respective mechanisms) are presented in a tabulated matrix format across three phases derived from longitudinal data. It is an ambition to present a dynamic interpretation of strategic alignment, yet the limitations of tabulated frameworks limit the presentation to a static perspective.

5.2.1 Phases of Strategy Development

The phases of strategy development uncovered are discovery, formation and execution. Traditionally, from a content perspective, strategic management denotes formulation (strategy-environment alignment) and implementation (structure-strategy alignment) and from a process perspective formation (simultaneous formulation and implementation) as 'phases' or 'components' of strategy work in strategy development processes. Furthermore, when incorporating notions of change into the equation, strategy is defined as two distinct phases: alignment and re-alignment, whereby change is

required to overcome inertia that emerged through alignment. However, strategy processes do not commence at formulation or implementation but are continuous, which begs the question: what occurs prior to formulation and after implementation? From the narrative review, it was evident that there was a distinct phase *prior* to the classical formulation phase. From discussions across the organisation it emerged that change was required from an ICT perspective – hence, the discovery phase is included to denote the active and deliberate intention to commence an organisation-wide change programme with ICT at its epicentre. Similarly, distinct processes occurred *after* the classical ‘implementation’ phase that constitutes minor change events to re-align the implementation requirements to adhere to the goals – as the internal and external contexts were constantly changing. These two are examples of where emergent and autonomous actions collide with deliberate and intentional actions (i.e., Mintzberg & Waters, 1985, Burgelman, 1991) which require a more fluid approach to strategy development rather than the classical sequential formulation, then implementation approach. The phases within the theoretical framework therefore incorporate this understanding – for example, the discovery phase that emphasises reassessment and changing of existing governance structures as well as the execution phase which consists of recurring reassessments via mid-term reviews – both of which emphasise micro re-alignment efforts to overcome resistance.

Phases	Description
Discovery	The discovery phase precedes the initiation of the formal ICT strategy and denotes activities related to identifying the emerging need for a strategy. Furthermore, this phase is where the organisation’s leadership becomes aware of the need based on internal and external requirements. Initial and preliminary foundations are laid on which the formation phase progresses.
Formation	The formation phase consists of the initial discussions of ‘what do we want to do’ as well as the actual formulation of the strategy itself, with the creation of structures to facilitate such as formulation process.
Execution	The execution phase focuses on the implementation of the projects outlined under the ICT strategy. Execution also contains reviews and revisions to the implementation plan to reflect changes and re-alignment initiatives, as execution phase spans several months and therefore the process is affected by resource constraints, change in leadership and personnel as well as other internal and external factors.

Table 7: Research-derived Strategy Development Phases

The *discovery* phase denotes precisely the recognition that changes and improvements to ICT within the Department are required and reflect consistent emergent recognition across the Department as well as an accumulation of prior attempts at ICT-related projects. At this stage, it is recognised that

singular one-off projects do not suffice to incrementally advance ICT. As such, discovery illustrates an explicit and induced action to approach the strategy work and to commence the preparations for the formation process. Action within this phase include senior management discussions to map out the desired outcomes of such a strategy exercise, the approach to engagement and project management as well as reflecting on the current and prior structural, social and technical components in the Department's strategy work. This phase thereby determines changes to those components to facilitate an organisation-wide strategy development process. Within the literature, there is no precise research that reflects shares a case study that exhibits the same delineation of phases – but does reflect process thinking of emergent and autonomous actions that result in the formal recognition for needing strategic change while to some degree also sharing Mentzas's (1997) notion of 'strategic awareness' in relation to SISP.

The *formation* phase relates to the formation of the structural, social and technical components for crafting the strategy – such as the creation of organisational structures (i.e., steering committees and working groups) to facilitate such an exercise as well as social components to foster deep engagement and relationships between business and ICT. In this phase, major cross-Departmental engagements on both an informal and formal perspective took place whereby these engagements produced objectives, goals areas and a strategic framework that sets out the ambitions of the ICT2020 Strategy as well as the implementation roadmap for the execution phase. The formation phase most closely resembles the formulation phase (internal alignment) whereby resources are mobilised to prepare for the execution of such a strategy developed.

The *execution* phase presented in the framework reflects the transition towards implementation whereby structures are created (i.e., ICT-SIT) and governance arrangements are adapted to facilitate such an implementation. Furthermore, communication plays a significant role to maintain momentum of the implementation whereas relationships are also leveraged from a senior management level to ensure the implementation team has sufficient resources to achieve their objectives. From a planning perspective, two strategy artefacts were created in: the Implementation Roadmap and the ICT Action Plan to guide the execution processes. Through the duration of the execution phase, a mid-term review was held to support re-alignment efforts to ensure the implementation achieved its goals. This phase is most closely related to the implementation phase from strategic management and includes the additional 're-alignment' component.

5.2.2 Dimensions of Strategic Alignment

The structural, social and technical dimensions of strategic alignment are presented in the framework and are derived from literature. As noted in Chapter 2, these dimensions were often investigated through a singular lens but used synonymously with strategic alignment. The ambition of the study was to uncover strategic alignment by making distinct references to the structural, social and technical

dimensions. Furthermore, the literature often identified ‘technical’ alignment as ‘intellectual’ alignment, but the terminology was amended to denote planning mechanisms rather than simply only referring to intellectual capital and therefore this research’s version of ‘intellectual alignment’ reflects a more task-oriented approach whereby the planning process led to the production of strategic artefacts. In addition, the literature has often used the term ‘operational’ alignment to denote structural factors and the framework maintains and adopts structural alignment to explicitly make clear structural components – as it may be confused with operational-level alignment or business process engineering, which is also prevalent in business-ICT alignment research.

Structural alignment refers to “coordinating activities across business units and ICT units” (Brown, 1999: 429). Coordinating these activities requires structural alignment (whether formal or informal) to facilitate the transfer of knowledge (i.e., social alignment) and therefore denotes to governance mechanisms (e.g., management systems such as committees and workshops) and control mechanisms (e.g., supervision and project management). Within a nomological network, structural alignment is the precursor for social alignment (Gerow et al., 2015), due to the fact that structural components are required to facilitate social interactions from a traditional perspective. However, it should be carefully noted that the nomological network only focuses on a singular variable (i.e., governance structure) as opposed to multiple aspects of governance and structure such as formal and informal intra- and inter-divisional and organisational groupings – for example, the relationship with the OGCIO and its predecessor, CMOD. It should also be acknowledged that structural alignment literature was not dominant in Chapter 2 as a core theme within strategic alignment literature but emerged through the research as a significant component of strategic alignment.

Social alignment refers to “the state in which business and ICT executives within an organisational unit understand and are committed to the business and ICT mission, objectives, and plans” (Reich & Benbasat, 1996:56) as well as “the level of mutual understanding of and commitment to the business and ICT mission, objectives, and plans” (Reich & Benbasat, 1996: 58). The way in which social alignment emerges, is through relational mechanisms (e.g., formal and informal networks, relationships and engagement) as well as knowledge transfer mechanisms (e.g., communication processes, learning and development and knowledge exchange). These mechanisms emerge through the structural components of the organisation, and these control and governance mechanisms facilitate relational and knowledge transfer mechanisms. Social alignment is therefore required and a pre-requisite for technical alignment, which requires social capital to facilitate planning actions.

Technical alignment is defined as “the degree to which the ICT mission, objectives, and plans support and are supported by the business mission, objectives and plans” (Reich & Benbasat, 1996: 56). To develop technical alignment, planning processes are required to produce strategy artefacts in which business and ICT missions and objectives are in alignment. To facilitate this process, structural and

social components are in place to group business and ICT individuals together to foster knowledge exchange and engagement. This, in turn engenders commitment to objectives and ensures that these objectives are scribed into the strategy framework and action plans. Further, it was found that informal social relationships fostered the technical aspect, as some ICT-members had previously worked on Business-ICT projects and therefore fostered relationships outside the ICT2020 Strategy development project and outside the formal hierarchy of the Department. Finally, technical alignment draws on types of planning approaches and implements the collaborative structures envisioned from senior management during the discovery phase.

5.2.3 Theoretical Framework: Mechanisms of Strategic Alignment

The phases and dimensions of strategic alignment have now been outlined, which leads to the final component: the mechanisms presented within the theoretical framework. The mechanisms are derived from the data and interpreted through the strategic alignment conceptual lens, which resulted in the governance, control, relational, knowledge transfer and planning mechanisms. The grounded theory analysis identified these mechanisms, which reflect groups of thematic areas that arose through analysis of qualitative data and are further presented in Section 5.3. In answering the question of how strategic alignment unfolds overtime, the mechanisms are structured by dimensions of strategic alignment and phases of the strategy development process to understand the structural, social and intellectual alignment mechanisms uncovered. The precise examination and evidence are given in Section 5.3, which details the precise mechanisms per phase. Further, the alignment mechanisms were uncovered through the analysis of primary data using the grounded theory method, guided by the conceptual lens that emerged from the literature review – which facilitated the classification of mechanisms for structural, social and technical alignment.

	Structural Alignment		Social Alignment		Technical Alignment
	Governance	Control	Relational	Knowledge Transfer	Planning
Discovery Phase	• Repurposing existing Governance Structures • Clarifying roles of Senior Managers • Drawing on External Expertise	• Policy Development Activities • Top-Down Control Process	• Network Searching Activities • Relationship Forming Processes	• Communication Processes Established • Learning & Development Processes	• Critiquing the broader organisational system • Understanding internal/external family of strategies for alignment
Formation Phase	• Creation of Governance Structures for Oversight (ICTG-SC)	• Supervision and Oversight by SGCU • Democratisation of Strategy work	• Senior Management Leverage Network • Deepening Engagement	• Knowledge Exchange Activities • Peer-Review Conference	• Production of the ICT Strategic Framework
Execution Phase	• Creation of Implementation Structures (ICT-SIT) • Adaptation of Governance Arrangements	• Project Management Control Activities	• Leveraging Relationships for Implementation Success	• Department-wide Communication Activities • Learning and Development from the ICT Strategy process for future strategy work	• Production of the Implementation Roadmap and ICT Action Plan • Mid-Term Review

Table 8: Theoretical Framework: Strategic Alignment Mechanisms across Strategy Development Phases

5.3.4 Theoretical Framework: Inter-Alignment & Inter-Phase Transitions

The following section is concerned with discussing the transitions between alignment components as well as between phases through qualitative means. First, structural alignment and social alignment relationships will be outlined to denote how governance and control mechanisms relate to relational and knowledge transfer mechanisms. While this relationship was established through a nomological network analysis (Gerow et al., 2015), this section will provide contextual examples of how such a relationship emerges from a qualitative standpoint. Further, the interaction between social and technical alignment is also presented, as a large portion of strategic alignment literature argues that technical alignment is difficult to achieve, but pinpointing how social alignment mechanism led to and support technical alignment will provide clarity. A phase-based interaction discussion will take place to denote how the specific aligning mechanisms develop overtime to indicate that mechanisms are fluid and shift in goals depending on what stage the organisation is in during the strategy development process. To reiterate, the thesis will seek to clarify the process as a developmental event sequence (c.f., Van de Ven, 1992) and thereby outline the transition between alignment types across the phases.

5.3.4.1 Structural – Social Interaction across Phases

This section outlines the structural – social interaction across the phases to give a preliminary indication of their dynamics.

Discovery Phase

Within the *discovery phase*, structural components were assessed by the TMT; specifically, the executive board where the formal decision was taken to engage in an organisation-wide change program to further develop the ICT of the Department. For example, within the KMTF and it was found that TMT support and strong engagement was required to facilitate business-ICT communication and relationship (i.e., social components) – the TMT involved was aware that previous inability to gain momentum was a result of a lack of engagement. These types of revelations and recognitions occurred within the discovery phase by bringing a wide range of senior individuals to reflect on prior structures that were ineffective. Further, it was noted by TMT that external expertise was required to bring a wealth of knowledge from other Governmental Departments as a form of learning and development (knowledge transfer mechanism). Finally, it was also determined that from a governance standpoint, greater leadership was required from ICT in driving and delivering the ICT2020 Strategy. Governance structures needed to be embedded within the organisational system to align business and ICT understanding and needs which automatically formed relationships between business and ICT (i.e., relational mechanism). Previous structures – such as having the ICT Unit embedded within the Corporate Services Division – facilitated greater communication between departments which resulted in networking searching activities to communicate understanding of business needs to ICT. Thereby, strategies were developed that were suited to the activities of the various business units. In essence, what occurred is a pre-mortem of the ICT2020 Strategy development process to identify factors that could potentially impede the process and enablers that needed to be in place to facilitate the process.

Overall, within the discovery phase, the emphasis was on establishing formal governance and control structures to allow for greater involvement of ICT in Business and vice versa. It should be noted that informal structures existed between these two groups through the ICT's Help Desk as well as prior engagements from a project management standpoint. However, the transition from structural to social alignment was to formalise these networks with the aim of promoting ICT within the Business context prior to launching the strategy development process, to ensure that the ICT2020 Strategy was a success.

Formation Phase

The *formation phase* reflects the period in which the ICT2020 Strategy was developed. As such, the structural arrangements were imposed top-down and resulted in the establishment of groups to facilitate business-ICT engagement and collaboration. Of particular importance, was the creation of the ICT Governance Steering Committee (ICTG-SC) as a governance structure to guide actions through

controlling the engagement (social) and planning (technical) process. Furthermore, the ICTG-SC enabled the organisation to leverage the senior manager's network (i.e., relational mechanism) to drum up support. Since the governance structure of the ICTG-SC was seen as a sub-group of the management board, the direct engagement and recognition with the most senior managers allowed the chairs of the committee to promote the projects and in turn led to the senior managers to facilitate deeper engagement with ICT in their respective decisions. Furthermore, a control imposed on the strategy development process was the democratisation of strategy work, which led to various members across the hierarchy being involved in the strategy workshop – ultimately, resulting in knowledge exchange activities.

Execution Phase

The *execution* phase focused on the implementation of the ICT2020 strategy that was developed during formation phase. Due to the change in tasks and objectives, governance structures were amended to create the ICT-SIT to facilitate control of the implementation using project management control activities. These governance and control mechanisms resulted in further engagement whereby members of the ICT-SIT leveraged their relationships to ensure a timely implementation that meets both business and ICT needs – for example, the allocation of time for the implementation co-leads.

5.3.4.2 Social – Technical Interaction across Phases

Social alignment precedes technical alignment, and the interaction is based on social-intellectual capital co-creation to explain how social interaction via networks facilitate the production of strategic artefacts through which business and ICT needs and objectives are aligned.

Discovery Phase

The *discovery phase* focuses on the preparations in advance of the strategy development process. From a social capital perspective, relationships are fostered between business and ICT to facilitate knowledge transfer between the two groups – with the objective of understanding each other's needs and requirements. From an ICT perspective, understanding the needs of business is vital to ensure a proper assessment of existing systems as well as the deployment of potentially new systems that meet those needs. As such, these relational and knowledge transfer mechanisms contribute to the planning mechanisms, whereby business and ICT are able to understand the broader organisational systems. Furthermore, through network searching activities, intraorganisational relationships were formed with other Departments who were engaged in an organisation-wide ICT change programme and thereby were able to critique the broader organisational systems by sharing knowledge on their experiences. Finally, by bringing various inter- and intra-organisational groups together, the process facilitated the planning mechanisms by allowing an understanding of both internal and external strategies that are required to align and therefore create the foundation on which the ICT2020 strategy development objectives were to be formulated.

Formation Phase

The *formation phase* was aimed at forming the strategy and therefore both the social and technical alignment mechanisms played a crucial role in creating the blueprint to guide the implementation. Senior management were key in driving deeper engagement between all groups involved to exchange knowledge through structured workshops as well as revision of strategic goal areas through peer-review conferences. These knowledge sharing workshops allowed for goals to be further aligned between business and ICT to ensure that these are reflected in strategic artefacts such as the ICT Strategic Framework.

Execution Phase

The *execution phase* was aimed at implementing the ICT2020 Strategy. Of particular importance, was Department-wide communication activities to ensure continued implementation by maintaining the momentum across the organisation to meet the deliverables. Furthermore, the learning and development process that ensued led to strong knowledge advancements by both business and ICT that continued to last after the ICT2020 strategy – and therefore, future projects benefitted from the creation of these social networks. Furthermore, these engagements have now facilitated a much stronger relationship and this shared and mutual understanding led to the production of the implementation roadmap and ICT Action plan. The relational mechanisms supported in this regard, through the leveraging of relationships for implementation success to continuously drive the strategy, as well as amend it through the mid-term review.

5.3 Theoretical Framework: Empirical Evidence

5.3.1 Discovery Phase

The Discovery Phase reflects the transition from prior initiatives to future initiatives, in the form of scoping, framing and discovery activities. Furthermore, it marks the beginning of the strategy development process from a corporate-level standpoint. This section will outline structural, social and technical alignment mechanisms that exist within the Discovery Phase through delineating the key thematic domains from a theoretical perspective, activities and processes from a practical setting as well as evidence from primary data. Section 5.3.1.1 is concerned with structural alignment and will outline the Governance and Control Mechanisms. Section 5.3.1.2 outlines social alignment mechanisms, such as Relational and Knowledge Transfer. Finally, Section 5.3.1.3 offers insight into technical alignment by presenting the Planning mechanism.

5.3.1.1 Structural Aligning in Discovery

Structural aligning within Discovery revolves around Governance and Control – which are predominately at organisation and senior management-level. This section will first present the

Governance mechanism – which revolves around: the repurposing of existing structures, reclassification of senior managers’ role in strategy work as well as the use of external expertise – after which, the Control mechanism is presented with a focus on top-down policy development activities.

5.3.1.1.1 Governance Mechanism

For the discovery phase, the governance mechanism operates through the assessment of prior governance arrangements regarding ICT-related plans, the clarification of the role of senior managers in strategy work as well as the drawing on external expertise.

Assessment of Prior Governance Arrangements

The assessment of prior governance arrangements refers to an activity whereby the Management Board (MB) is involved in the analysis and discussion of prior ICT-related structures – such as the Knowledge Management Task Force (KMTF), which was responsible for the Knowledge Management Initiative (KMI) that formed in 2012. The KMI was deemed unsuccessful, primarily due to KMTF’s governance structure – which was lax and informal in nature. A member of the SGCU noted that *“When the ICT Strategy started in 2017, they wanted to judicate what was going on in the ICT Strategy, so they paused the KMTF – basically what they were doing under the ICT Strategy was replacing or at least taking up the same space that knowledge management had been doing”* (P20).

The assessment involved identifying factors that resulted in an ineffective governance of ICT-related projects to ensure that factors are leveraged to enable their effective formation and execution. A member of the MB reflected on the KMI and noted that *“there was a learning from the knowledge management work, if you’re trying to embed change in the organisation, if you have volunteers driving the changes rather than the business unit – that’s going to be imperfect”* (P23). Furthermore, another MB member added in relation to the KMTF that *“one member of the board was involved, but it wasn’t stitched into any formal governance structure within the Department and very loose in terms of participation and who would participate – and participating was determined by interest rather than knowledge on the matter or on the basis of driving change”* – while also noting that *“we’ve learnt as those committees rolled out, how they are best structured to deliver”* and acknowledging that *“the [Department] had a lot of false dogs over the years”* (P5). These points are further emphasised by the former Head of ICT who noted that *“Lots of formal structures weren’t in place to support ICT and [the KMI] prior to the ICT Strategy”* (P36). Overall, it was identified that a more formal structure and senior management involvement was required to establish effective governance. Therefore, the discovery phase governance mechanism seeks to understand prior structures and make changes.

Clarifying Roles of Senior Managers

The clarification of senior managers' role in strategy work is another aspect of the governance mechanism – and has implications for structural alignment between business and ICT. Building on the latter section, lack of senior management involvement and their prior responsibilities led to some stagnation on projects. Furthermore, the ICT Unit's lack of seniority in their staff resulted in delays in decision making processes. Involvement of senior managers – specifically, referring to the Heads of Department and standalone units – is seen to increase engagement and support amongst organisational members while also acting as facilitators of the process and of change agendas. Prior governance arrangements and lack of management support created lacklustre engagement across the department in relation to strategy work. Heads of Departments are therefore seen as enablers for engagement and can use hierarchy leverage to address concerns and promote collaboration and engagement. Furthermore, the former Head of Corporate Services noted that Senior Managers can *“drum up support to denote the importance of the ICT Strategy”* (P37).

Drawing on External Expertise

Drawing on external expertise is another aspect of the governance mechanism within the Discovery Phase. Within the Discovery Phase, the members of the Management Board – primarily the Secretary General and the Chief Financial Officer – decided to draw on external expertise to aid in diagnosing the organisational, governmental and external context as well as in exploration exercises to pinpoint objectives. This came in the form of two factors: first, the assistance from an external advisor who has experience in strategy making within the public sector; and secondly, discussions with the OGCI on the technical side to allow for alignment with their e-Government strategy.

Eliciting outside assistance is vital for obtaining tacit knowledge on strategy work in the public sector. For example, the Head of ICT stated that *“In 2016,[the EA] entered the picture – as part of the KMTF. And he gave some mentorship around [public sector strategy work. From there, it wasn't long before an actual ICT strategy was worked on. [The EA] saw that the ICT Unit in the Department didn't have [an ICT Strategy]. KM was expressing all these goals and these project teams, and it was done under the guise of KM – and [the EA] had the foresight to say that this is actually under ICT and you didn't have an ICT Strategy”* (P34). What emerged is that the prior KMI was not a strategy, but rather a collation of unaligned projects. Therefore, the EA had discussions surrounding strategy work and emphasised the need for a collaborative approach to ensure ICT-related project success from an end-user perspective. The former Director of SGCU and current Ambassador noted that *“when [the Sec-Gen and CFO] proposed the development of an ICT Strategy, [the EA] was someone who the [Sec-Gen] knew that they could benefit from. [I] met [the EA] a number of times. [The EA] was anxious that the Department requires a solid and high-level form of engagement in consultation exercises. There was no push back to that”* (P27). This is an example where the Department recognised a knowledge gap and needed the external advisor to provide expertise to assist in the ICT Strategy.

5.3.1.1.2 Control Mechanism

Within the discovery phase, the control mechanism operated through the creation of top-down policy development activities. The commencement of the ICT Strategy development process was not a result of grassroots action and initiative, but a deliberate recognition from the MB that an ICT Strategy was vital – and used the strategy as a platform to foster wider Departmental engagement and collaboration via strategy work. Therefore, it can be seen not only as a strategy with a specific ICT-related outcome in mind, but rather as a development exercise to further the skills of senior- and middle-management while improving lower-management involvement and recognition of their work in strategy. It was decided that a more open form of strategising was to take place, as opposed to traditional planning models of strategy. The control mechanisms decided upon for latter stages were developed in the form of policy development activities and revolved around the concepts of co-creation, co-ownership and co-lead models of strategising as a way of fostering shared responsibility, career development and inter-departmental collaboration.

Primarily, the process was commenced by the Secretary General and the Chief Financial Officer and was imposed in a top-down manner through decision-making and discussion with the Management Board. Furthermore, the idea was conceptualised by the two aforementioned executives. The Head of Corporate Services noted that *“Along with [the CFO], we co-steered the development of the strategy. [The CFO] steers the subcommittee of ICT that oversees implementation of the strategy. And [I have] operational responsibility and co-steers”* (P5).

5.3.1.2 Social Aligning in Discovery

Social aligning within the discovery phase was maintained through the use of Relational and Knowledge Transfer mechanisms.

5.3.1.2.1 Relational Mechanism

Network Searching Activities

The relational mechanism within the discovery phase operated through network searching activities whereby senior managers drew on their informal network to leverage relationships. Due to high levels of churn within the Department – such as, individuals transitioning between departments and units, as well as between HQ and abroad – a strong and significant informal network emerged. This coupled configuration is leveraged by senior management during the discovery phase to identify ideal participants that are to take part in the collaborative ICT Strategy development process.

Commenting on the network, the former Head of the SGCU notes that *“the informal structures are more important than the formal ones”* (P6) while an ICT Unit member notes that the informal network *“is just as strong as the formal network”* (P35). Regarding the recruitment of candidates, a Deputy Director noted that they *“relied heavily on [their] almost 20-year experience in the Department and*

the networks that [they've] built up over time and the people [they] had worked with or relied on in the past or who [they] knew would be enthusiastic, motivating, clear and you know, good positive people to have on board" (P2). Initially, hesitancy and resistance arose – as prior projects were often not successful and therefore individuals were reluctant to sign-on. The CFO stated that *"sometimes, personal conversations were held to persuade people to get on board"* (P35).

For example, a board member and director of a unit noted that *"I identified colleagues from the functional units within my division to participate in the strategy development at other levels. Especially where things were getting more granular"*, indicating that specific individuals were chosen due to their knowledge. Someone who was selected noted that *"I was identified as a champion and used it for my advance and was supported by management to do it. One of the things that is accepted when you're working on projects is that ... you have to be very flexible with your time. Lots of time. Not everyone is prepared to do it. It's better to be honest up front. It's not for everyone. Not everybody wants to work outside the box. There is that element that you have to have some knowledge of what we do"* (P3).

5.3.1.2.1 Knowledge Transfer Mechanism

The knowledge transfer mechanism within the discovery phase operates through the establishment of communication processes to inform the organisation and generate buy-in, as well as establishing procedures for learning and development to take place throughout the ICT Strategy development process. Furthermore, knowledge transfer was central to the development process whereby internal organisation build strategy and project management capacities that spill over into their day-to-day operations.

Establishment of Communication Processes and Buy-In

The communication processes within the Discovery phase are aimed at facilitating knowledge transfer between groups – such as ICT-business at board-level. While this mechanism ensures the facilitation of knowledge, it also assists in forming a preliminary shared understanding between the ICT Unit and the Management Board – which is comprised of Heads of Divisions. Additionally, the Head of Corporate Services – under which the ICT Unit is based – was often the spokesperson for the unit. However, due to the existence of many additional units – ICT topics were often neglected or not fully understood. The direct communication line (overcoming the Head of CS middleman) allowed for a clearer understanding. As such, this mechanism produced shared understanding through the establishment of communication processes.

In addition to shared understanding at board-level, other communication protocols were established between the ICTG-SC and the organisation as whole. Prior ICT-based projects (Knowledge Management Initiatives) were unknown to the majority of the organisation. Therefore, processes were established with the idea of facilitating buy-in from various organisational groups to ensure

engagement throughout the duration of the ICT Strategy development process. Furthermore, the buy-in sought to counteract prior beliefs that ICT projects were only ICT related. The idea behind this is that end-users require buy-in to ensure adoption and understanding of the systems being employed and how they may assist actors as opposed to creating barriers to performing work.

Forming Learning & Development Processes

Another example of the deployment of the knowledge transfer mechanism was setting up the learning and development processes. While from the outset the ICT Strategy may seem like the formation and execution of ICT-related projects and systems, the development process itself is a catalyst and platform for learning through the transfer of tacit knowledge. The on-the-job learning within this context seeks to learn technical skills such as project management, becoming experts on strategy and change, as well as forming relationships with various organisational members. At middle- and senior-management levels, the organisation promotes internally – and as such, must ensure that those promoted possesses the skills required to success in public sector organisations. From an environmental context, a survey was conducted that denotes that middle management employees were not engaged enough in decision making processes. Therefore, this ICT Strategy development process ensures organisation-wide engagement as well as selecting ambitious employees to co-lead and co-own segments of the strategy.

From the ICT-side, an employee noted that *“there was a need to further the ability to communicate, present and do business cases”*. Furthermore, they noted that *“There are some people in the ICT unit who are really lacking in this regard. People in business side have all these skills, they’re diplomats and are highly qualified in this area. They’re really good”* (P29). At a general level, a MB member noted that *“as an organisation, DFAT didn’t take professional expertise in at a senior level within the Department, we grew professionals internally...”* such as *“training middle managers and that effective line managers develop their own people. That aspect of people management is now being taken more serious at all levels”* (P5). Finally, another learning and development comment is the ability to gain experience in project management. A member of the Project Management Office (PMO) within the SGCU noted that a *““[DFAT] type of organisation, where you can have 100 projects, but you’ll never have 100 qualified project managers. As such, the aim is to develop inhouse capability to ensure all managers within the organisation understand the project management approach”* (P20). Therefore, it was agreed upon at the executive level that learning and development should be central to the ICT strategy process.

5.3.1.3 Technical Aligning in Discovery

Technical Aligning within the Discovery phase occurred through the planning mechanisms – whereby the internal and external family of strategies were identified and assessed as well as the wider organisational system being critiqued. These activities in this phase occurred at senior management

level where relevant parties – the Management Board, SGCU and the Head of ICT – engaged in discussions with themselves while enlisting external parties such as the Office of Chief Government Information Officer (OGCIO) for assistance. Furthermore, the DFAT – like any organisation – is a collective entity comprised of various geographies, units and departments; as such, it's vital to understand the family of strategies internally to ensure that the ICT Strategy can adhere to the requirements and assist.

Internal and External Strategies

Technical aligning occurs from a content-perspective whereby activities are executed to identify and assess both the internal and external strategies. The reason is that the ICT strategy must be aligned with the broader network of strategies: including the internal DFAT family of strategies as well as the government-wide external strategies such as the e-Government strategy. Speaking on internal strategies, the current Ambassador and former Head of the SGCU notes that that *“we were at that stage developing a number of sub-strategies for the department, statement of strategy for every three-year time frame, and underneath that, have a number of operational strategies in addition to a number of regional strategies for a number of embassies/consular around the world”* (P27). This further indicates the complexity of DFAT's strategies and the necessity for them to be guided.

The ICT Strategy is to support and be aligned to all these various objectives to ensure they are ICT-enabled. An ICT Unit member stated that *“sometimes, projects that are being proposed to me by the business units are not strategically aligned, doesn't fit into the structure or overall is not feasible to requirements, then issues occur”* (P17). According to documents from SGCU for the MB, the aim of the exercise is *“designed to capture the key decision points and is not exhaustive”* (DFAb, 2016.11.22). The activities were conducted by the strategy owners (ICT Unit), the MB as well as the SGCU. Within the discovery phase, the aim of the planning mechanism is to ensure alignment between the family of strategies internally.

External strategies were also considered as part of the planning mechanism – through consultation with the OGCIO. The Government CIO noted that *“the role the OGCIO has in relation to major projects is: A) that the project is logical and makes sense; and B) aligns to these strategic principles.”* Also OGCIO has Digital Government Oversight Unit – *“basically that means, if they're doing a major project, the Department or Agency will have to send the business case to the unit – and if I don't approve, my department will not approve them spending the money”* (P7). Since the ICT Strategy seeks to invest major resources into ICT related systems and infrastructure, the OGCIO is to be consulted and the strategy aligned with the central e-Government strategy, specifically the 'build to share' component. Furthermore, the Government CIO emphasised the need for resource centralisation regarding build to

share, “everyone running their own infrastructure is inefficient, ineffective, increases risk and obstructs data sharing” (P7).

5.3.2 Formation Phase

The Formation Phase proceeds the Discovery Phase and is characterised by actions and processes that result in the formation of the strategic framework which constitutes the foundation and main pillars of the ICT Strategy. From a structural standpoint, the Formation Phase displays the creation of governance structures for oversight and control purposes. Furthermore, more bottom-up strategising is taking place and thus demonstrates a shift from primarily top-down actions visible in the Discovery Phase. From a social perspective, more actions and processes are aimed at deepening engagement with the middle-management team to facilitate involvement and develop trust. Finally, technical alignment occurs through the production of the ICT Strategy Framework and is a result of organisation-wide collaboration through a series of workshops and discussions whereby middle-management have identified goal areas that are aligned with their unit and department. Section 5.3.2.1 is concerned with structural alignment and will outline the Governance and Control Mechanisms. Section 5.3.2.2 outlines social alignment mechanisms, such as Relational and Knowledge Transfer. Finally, Section 5.3.2.3 offers insight into technical alignment by presenting the Planning mechanism.

5.3.2.1 Structural Aligning in Formation

Structural aligning within Formation revolves around Governance and Control mechanisms. The Governance Mechanism reflects the creation of governance structures related to the ICT Strategy development process, while the Control mechanism covers the thematic areas of strategy work democratisation and oversight.

5.3.2.1.1 Governance Mechanism

Repurposing of KMTF and Create the ICTG-SC

Within the formation phase, the governance mechanism operates through the creation of the ICT Governance Steering Committee (ICTG-SC) – which is the core structure that governs the ICT Strategy development process and is a sub-group of the Management Board. The reason for a sub-group of the MB is the direct control the Sec-Gen has as well as giving the members of the ICTG-SC authority and decision-making rights. This structure emerged out of the assessment of the KMTF and KMI in the discovery phase. The purpose of the ICTG-SC as per the Terms of Reference (TOR) states that “*The ICT Governance Sub-Committee will support the Secretary General and the Management Board in the strategic leadership and management of the Department’s ICT resources and capabilities. It will also ensure that the Department maximises the business value of its ICT investments whilst also ensuring that its approach to the management of ICT is in line with good international practice*” (2017.03.14, Internal Document).

The membership of the ICTG-SC is comprised of MB members – which includes the Heads of Divisions – as well as the Head of ICT and a senior manager within the ICT Unit. The governance team for the ICT Strategy development process is assigned to support the action plan and to make decisions regarding setting the strategic direction. A member of the ICTG-SC noted that *“The management structures around the ICT strategy, which brings in management board sponsors, management board members sitting in with (co) leads from different divisions – means that even if people come in and out, there is a committee structure which means that there is a continuing priority attached with delivery where necessary”* (P30).

5.3.2.1.2 Control Mechanism

The control mechanism operates through SGCU oversight as well as the democratisation of strategy work.

SGCU Oversight

During the formation phase, the heads of the organisation designated the Strategy, Change and Governance Unit (SGCU) to maintain oversight on the ICT Strategy development process. Since the strategy process contains several large-scale projects, the SGCU has the ability to ensure a project management approach is adhered to and to provide support to the units that have ownership of the project. Furthermore, the SGCU has a direct reporting line to the Sec-Gen – who themselves sit on the ICTG-SC. Rather than being purely top-down in relation to control, the individual project leads have the flexibility to conduct tasks and actions related to their projects. Therefore, the SGCU simply provides governance in the form of reporting and guidance. For example, Head of the PMO (within the SGCU) noted that their *“role with the strategy was participating in the workshops. The ICT strategy [owners] also came to PMO for advice on strategy and project management”* and also noted that they *“provided advice and guidance based on experience on people delivering strategy and offering pros and cons in taking a project management approach”* (I20).

In addition, SGCU also exercises control through ensuring that the ICT strategy-related projects adhere to *“strategic obligations that the DFAT has as a government department; so it wasn’t so much proactive.... [but it] contributed to the overall departments civil service strategy”* (P15). Therefore, it’s more reactive control ensuring that the tasks and actions conducted are aligned to the wider family of strategy – such as the civil service reform strategy that contains objectives related to the central e-Government strategy.

Another instance of the SGCU deploying control was noted by a former Head of SGCU and stated that *“[the SGCU] tries to bring coherence. Bringing coherence without being ‘heavy handed’ about it. There are requirements for the Departmental goals, and they have to be aligned”* (P6). Another former Head of the SGCU noted the same, by stating that *“The SPU seeks to ensure there is some coherence in all*

the strategies being developed in the Department and being aligned with the DFAT's overall mandate. Also to ensure coherence in the planning and setting up of the strategies. Through this role, I've worked closely with [Head of ICT] and the ICT Team" (P27).

Speaking on the use of the SGCU for control in relation to ICT, the Sec-Gen notes that: *"The magic in ICT happens when you have the right kind of dialogue between the practitioner and the enabler – that requires integration across the department. Integration doesn't just happen, it has to be facilitated in a more passive dimension, and sometimes it has to be forced. And therefore, it feels, if you're running a department, you need your own executive instrument to make these things happen. The strategy unit has authority in the department because it reports to me. And I invest a lot of work in them [i.e., SGCU] and asks them to take on a lot of work. It's a quite difficult division to integrate its work with another – that has to be driven. And therefore, a lot of the more detailed processes, that are set out in the ICT strategy around grants management or contacts management, they have to be driven across the department and cannot be driven by corporate services or ICT. They have to be buy-in from the users as well. The strategy unit is best placed to do that. It's role has probably grown over the past couple of years. It was quite a new unit but now it has grown indispensable" (P38).*

Democratisation of Strategy Work

During the formation phase, some control is delegated to employees through the democratisation of strategy. This collaborative and relative bottom-up approach to strategic planning allows the involvement of employees across the organisation to engage via workshops and discussions. One particular motivation was to involve civil servants in decision making, especially at the lower grades – as per the then recent Employee Engagement Survey (2017). Evidence of this was from a lower grade officer (EO) who notes that *"it was unique we were all grades, I'm an EO which is junior in the hierarchy, but in the process, we were brought together in groups, in the hotels, and I found it very good due to high level attendances [referring to higher-grades attending]. I was there next to [the CFO]" (P14).* They then further stated that they *"had a very frank discussion in the group – it was unique because I would never get to participate in a group with board members and being on an equal footing of the group" (P14).*

Furthermore, the democratisation of work allowed issues to come to light that the top management team were unaware of. For example, an interviewee noted that top management *"was taken by surprise by these negative issues and that was worrying to us in the bottom. And some took it personally and seriously" (P14).* A board member noted that regarding allowing lower and middle management to partake that *"it's also been motivating for the staff to see how their contributions are fitting into a clear framework road map for key projects; and actually, also having exposure and engagement with*

[the CFO] and members of the management board and feedback that comes from that” (P5). Overall, the democratisation of strategy work has both knowledge transfer and relational outcomes.

5.3.2.2 Social Aligning in Formation

Social aligning within the formation phase is maintained through the use of Relational and Knowledge Transfer mechanisms.

5.3.2.2.1 Relational Mechanism

During the formation phase, the relational mechanism operates by deepening the engagement across the organisation via relational networks and builds stronger ties between participating parties.

Deepening Engagement Activities

Activities were executed that deepen the engagement across the organisation in relation to the development process of the ICT Strategy. In many instances, the deepening of engagement was unique to many; for example, one noted that *“it was the first experience, in terms of bringing people together from different grades – which is crucial – and different parts of the headquarters, which is already diverse, but it was a mixture of grades and different areas of work and different physical locations”* and noted that this exercise reflected *“genuine engagement”* (P26).

To facilitate deeper engagement a board member noted that *“Management Board was present at the engagement workshops – at different times. Visually – led to support and buy in. This increased engagement and led to the identification of champions. Rather than saying ‘it was a management decisions’ and the board championed it, it was more through people saying ‘look we need to do this’; but there was also demand in the organisation for this, it wasn’t a hard thing to sell. People wanted a vision around ICT – and thus allowed them to engage.”* (P30). This illustrates the deep engagement brought out and increased the perception while also ensuring employees feel engaged.

Furthermore, the greater engagement with ICT and various senior managers and business units has led to a shift in their perception, and thereby reputation as well. Previously the ICT unit exhibited siloed engagement and now were at the forefront of the ICT Strategy which facilitated wider engagement and involvement in organisational life. A business unit manager who was more involved with the ICT unit noted that *“It’s more engaging, there’s more energy and effort to try and move it out of the utility space to the strategic space, by the Head of ICT – who is making a concerted effort to do that by setting up relevant structures to allow the organisation to achieve its goal”* (P17).

The deepening of engagement was also aimed at increasing the perceptions of both the strategy and the ICT Unit. For example, the former Head of the SGCU notes that *“perceptions don’t change on the basis of strategy, they change on the basis of outcome, on this being delivered. Strategies are well and good, but what people want is to improve their user experience and to be empowered with new tools*

and technologies that allow them to do better. With ordinary members of staff, don't get excited when a new strategy comes out, they get excited when new equipment or device comes out" (P27).

5.3.2.2.2 Knowledge Transfer Mechanism

Within the formation phase, the knowledge transfer mechanism operated by receiving input from employees across the organisation – through the mediums of surveys and focus groups to transfer and share knowledge as well as consolidates strategic themes. The exchange of social capital within the workshop discussion sessions generated new ideas. Furthermore, within one group, external government organisation and consultants took part to transfer both experience and information from other department's projects and experiences. Furthermore, another significant process was the communication between the ICT Unit and the business unit within the workshop settings to gain shared understanding of both technical and business aspects.

For example, an interviewee and workshop participant noted that *"The workshops allowed everyone to get involved and allowed for the ability to circulate the findings to everybody there. In the thematic workshop sections. Communicating as you want, visually show that progress was being made. Had engagement from all levels of the Department. And we were reporting the findings and inviting feedback" (P2).*

A manager within a business unit who works with ICT noted that *"My unit and ICT speak a different type of language. ICT is about the infrastructure and the enabling to as such. And my side, within comms its with using the tools and applying that to some degree that people understand the use case for that tool. For example, the website is managed within the comms unit but could be realised without the infrastructure that the ICT unit put in place. ICT has the technical expertise on the servers and such. However, having said all that, if my side/team didn't understand the language that ICT is taking about, none of the project could be realised. It's about understanding – not necessarily all the ins and outs – but getting it from a project management standpoint" (P9).* Furthermore, this individual noted that *"The engagement exercise definitely opened a door into an ICT unit that was probably perceived as 'other' part of that. There was definitely a 'PR' exercise that took place. That led to a lines of communication opening up, where people initially thought there were no easy access points to have their ideas heard. So in that regard, CT thinks that worked really well. But that's a different exercise" (P9).*

The Sec-Gen notes that *"ICT was siloed. I think that's always a risk when, when you have specialists grouped in one place, and ICT people speak a different language – but he thinks that has changed as well. The strategy was developed in the first place, dramatically broke down that silo a few years ago. It put people in a room together that normally wouldn't, and then having a discussion about technology" and goes on to say that "Strategy as a critical moment (not the critical moment), the last*

years has made the Director of ICT one of the most visible people in the department – most people know the names of the people that work there – because we’ve relied on them” (P38). Therefore, in order to successfully transfer knowledge there needs to systems in place to allow for knowledge transfer while also having the expertise to exchange business-technical aspects of the project work.

5.3.2.3 Technical Aligning in Formation

5.3.2.3.1 Planning Mechanism

Technical aligning in the formation phase operates through the planning mechanism. This is evident by the production of the ICT Strategy Framework, which outlined the goals areas, strategic priorities and outcomes that were a result of the knowledge transfer from the thematic workshops that took place. (See Appendix for Framework).

5.3.3 Execution Phase

The Execution Phase is the final phase within the strategic alignment process whereby the implementation of the ICT Strategy occurs and thereby follows the Formation Phase. Furthermore, the Execution Phase revolves around the technical alignment output where the ICT Strategic Framework and related Action Plan get implemented. From a structural standpoint, this phase displays the creation of implementation structures, adaptation of pre-existing governance arrangements to suit this stage, as well as project management control activities to ensure proper execution using allocated resources. From a social alignment perspective, the leveraging of relationships is vital for implementation success. Furthermore, knowledge gets transferred through organisation-wide communication to ensure progress as well as learning and development activities to gain experience for future strategy. Finally, technical alignment produces the implementation roadmap and ICT action plan – where the tasks and priorities are outlined to guide the final part of the ICT Strategy development process. Section 5.4.3.1 is concerned with structural alignment and will outline the Governance and Control Mechanisms. Section 5.4.3.2 outlines social alignment mechanisms, such as Relational and Knowledge Transfer. Finally, Section 5.4.3.3 offers insight into technical alignment by presenting the Planning mechanism.

5.3.3.1 Structural Aligning in Execution

5.3.3.1.1 Governance Mechanism

The governance mechanism within the execution phase operated by adapting governance arrangements – such as the creation of implementation structures. Furthermore, greater oversight of the ICT Strategy development process was granted to the PMO to ensure a project management-based approach to the ICT Strategy projects.

To ensure the implementation of the ICT Strategy, the ICT-SIT governance structure was created – and consisted of eight co-leads (four business and four ICT co-leads). The idea was for ICT and business to

operate in conjunction to share knowledge and bridge the business-ICT knowledge gap. Furthermore, it ensured that the ICT strategy was implemented along the technical guidelines as well as being beneficial for the business case. The ICT-SIT would meet bi-monthly as a whole to discuss progress. Furthermore, each co-lead was expected to allocate 20% (1 work day) to the implementation of the ICT Strategy; however, this caused issues as it's quite difficult to spend that much time away from day-to-day activities. A member of the ICT-SIT stated that the working between ICT and business as a co-lead model was useful by stating that it *"lends more understanding to individuals. Whatever project they're working on, brings something else to the table"* as well as stating that *"A lot of the co-leads may or may not have had a technical aspect of the project; but from a user perspective they would understand this and bring different insight into the pillars and related actions"* (P21). However, there are also issues with the ICT-SIT co-lead model. For example, an ICT-SIT member stated that *"it's not their day job, it's part of their day job – so there are resourcing issues"* (P21).

5.3.3.1.2 Control Mechanism

PMO Controls

The control mechanism within the execution phase operated in the form of project management controls to ensure effective implementation and that the execution was shaped by project management protocol. Specifically, the SGCU was given greater control within the execution phase through their PMO unit. The former head of the SGCU noted that *"SGCU operate at a more strategic level to make sure that the strategies are robust and that they're probably structure – and also support the Project Management approach and strategy delivery"* (P5). Furthermore, they note that the *"SGCU has birds-eye view of implementation of key projects and because of personnel change on the SGUC side, stepped back from this for a period in 2019. [Current Head of SGCU] who heads SGCU who now sits on the SIT has become more active on the strategy and change side"* (P5).

In contrast to the formation phase, execution places greater emphasis on project management. Regarding PMO controls, it was noted that *"the PMO would have provided, there is a member of the PMO in the strategy implementation team. In the development stage they wouldn't be involved but now they are knitted into the implementation team"* (P2). Furthermore, the PMO provided assistance in the form of protocol. An interviewee noted that the *"DFAT is the type of organisation, where you can have 100 projects, but you'll never have 100 qualified project managers and therefore the aim is to develop inhouse capabilities to ensure all managers within the organisation understand the project management approach"* (P20).

Regarding ownership, the Head of PMO states that in large projects *"the most important thing is that the project belongs with the business unit and for a lot of the largest projects, they have a business-unit owner"* (P20). Additionally, the projects have *"a board member sponsor – and they report into the*

Programme Oversight Board – they use a project management structure for monthly reporting to deliver all the different projects” (P20). The “PMO has been vital. There has been a balance – need to focus on the key strategic projects go through the process. PMO is not suitable to all projects” (P5).

Furthermore, they noted that there was a need to achieve a ‘Goldilocks’ position between too much and too little PMO control within major projects. For example, *“at the Project Oversight Board, some of the smaller projects aren’t as strategic and that can cause resources being sucked from key projects – so there is continuously a debate regarding this matter – which projects are suitable for the PMO and which ones are not. So some need to go through more formalised process” (P5).* Additionally, they note that *“Not everyone is bought into the PM approach – some areas like qualitative areas if you have too many processes then you kill the quality and become too process focused. Healthy debate going on. The extent of applicability” (P5).*

The current head of the SGCU noted that *“The idea of the PMO, that a lot of big projects and important projects within the Department are defined as a beginning and an end and come through a very rigorous system of PM – and into a project programme oversight board which is chaired by the Sec-Gen.” (P15)* noting that the Sec-Gen possibly impacts the control through direct reporting line with the PMO via SGCU. This is supported by the Head of SGCU stating that *“those projects have a very defined PM work plan – and they come through the PPOB, which is a way for the Sec-Gen having ownership and quite good control of those projects without taking up a lot of his time” (P15).*

Another example was the growing number of strategies that require aligning through control. For example, the Head of SGCU noted that *“SPU was primarily engaged with things we had to do, the idea is that what now; in recent years – a real challenge for the department – and I don’t think anyone then or now has probably engaged on this, there has been such a proliferation of strategies across the department that I don’t think there has been a piece of work done in the past or now that’s good enough to align the strategies.”* This indicates a transition from purely strategy formulation, to the SGCU now having the mandate of using PM controls to ensure alignment with the family of strategies across the organisation. Furthermore, *“They are aligned with DFAT’s overall strategic goals; but I think there isn’t alignment with the implementation frameworks; that’s an area that I see... looking at the strategies currently around the department. There isn’t a template, there isn’t a one size fit all. Some go into the PMO, some set up their own governance frameworks, some are adopting strategies without an action plan at all; so there is a challenge facing the department, not so much alignment (since strategies come from different places, policies, operational etc). But I think there is a need to work on implementation and to make sure that, even if it’s not the same template for everyone, but there is robust implementation process based on practice. And that takes place at the beginning of the strategic process” (P15).*

5.3.3.2 Social Aligning in Execution

5.3.3.2.1 Relational Mechanism

The relational mechanism within the execution phase takes the form of leveraging relationships for implementation success. For example, implementation is occurring in parallel with to day-to-day activities and is interrelated to those activities; as such, the ICT strategy development process experiences delays. Members of the ICT-SIT are required to allocate 20% (i.e., full workday) to the pillar to which they are assigned. To that end, senior managers need to leverage their relationship to ensure that implementation continues. Partially, the issue was also that the MB put forward individuals who they wanted to continue working. For example, a senior manager note that *“There have been a couple of co-leads from time to time, but they didn’t get the idea across. The management struggled with it. They struggled to put appropriate people forward. The reason for that was that the kind of people who would do best in the ICT-SIT, the progressive forward-thinking people, their bosses wanted to retain them because they were good”* (P34).

Another noted that *“you take the co-leads at the time, one of them was the head of passport services, and to ask them to give up a percentage of their time – it’s a huge ask”* (P21). Furthermore, they noted that *“another co-lead was placed in Limerick so they were completely detached – which is crazy. They struggled to put in their own time and to sit in the SITs meetings”* (P21).

In addition, co-leads left. A senior manager noted that *“If a colleague is off a position and they aren’t immediately replaced, then nobody is there to take over the role – this shouldn’t be the case but it happens. Then you lose the momentum of implementing the strategy and finalising the strategy; and sometimes this is left to very junior colleagues and sometimes gets paused of altogether. If you leave a process paused for too long, there is a general consensus that we need to reopen that process and just complete it”* (P8).

Co-leads leaving is primarily a result of churn, which is a common phenomenon in the DFAT. Therefore, senior managers need to leverage their network to ensure continuity. There was a need to mitigate issues presented by churn and the loss of institutional knowledge. An ICT Unit manager stated that *“Contacts and Events management programme on ICT strategy pillar 1, people whose brainchild it was or who started it, they weren’t available to engage. So where ICT hoped they would be leaders or champions of the project, they weren’t there. So posting and promotions moved them along. Yes, they have a handover note and a quick call – might work for one or two weeks... won’t work. Eventually the phone won’t be lifted because of different priorities”*.

However, another sentiment was expressed regarding churn. Another ICT unit member spoke on the ICT co-lead process and argued noted that that *“Within DFAT, there is a lot of movement – so there*

can be a lot of transfers. It can change quite frequently – it can be a good way because it refreshes it. And if the new person that is assigned that role cannot give time – then it's no use" (P17).

5.3.3.2.2 Knowledge Transfer Mechanism

The knowledge transfer mechanism within the execution phase is comprised of department-wide communication activities as well as learning and development processes.

The Sec-Gen noted that he *"communicates across spectrums and various formats and the time I have", "key communications are video messages that are put out on the intranet. The shorter the video message the more people watch it" (P38).* He goes on to say that he *"finds that if you send out an email you're really only communicating with one subset of people, and the video message – local staff and embassies around the world click into it. Very effective."* He also noted that *"[the DFAT] still use email probably too much for messaging. It's an easy way to communicate – a lot of communication around the ICT strategy has been done on video messaging".*

While acknowledging effective use of videoing for communication, the Sec-Gen notes that *"we still have work to do in terms of communication. There are other private sector organisations that do communications much better than most government departments. We've quite a lot to do on that front"*. However, the complexity of the DFAT needs to be considered. For example, *"In an organisation that's very diverse and dispersed – there is no government department like Foreign Affairs -it's a department that's dispersed with around 120 business units in many locations, a department that employs over 40 nationalities and over 40 languages. And there is an aspect to communication that requires you to be there and meet people – which involves travel. And there is an aspect that requires long conversations" (P38).* These statements emphasises the need to communicate effectively to the organisation.

Department-wide Communication Activities

Department-wide communication activities involve knowledge transfer to ensure the organisation is aware of the progress and to maintain momentum in the implementation. Furthermore, communication of the ICT Strategy can facilitate adoption and therefore plays a role in determining the success of the strategy itself. Various corporate channels were utilised as a medium for corporate communication, for example ICT-SIT newsletters on implementation progress, intranet posts, Sec-Gen videos as well as video conferencing.

Newsletters

Newsletters provoked mixed feelings among participants. On one hand, individuals acknowledged the usefulness of such communication tools while others dismissed them due to them contributing to 'information overload'. Furthermore, a distinction can be made regarding the platform on which they

are released. Intranet-based communication mechanisms, from a theoretical perspective, should not have difficulty reaching the organisation as all members have access to the newsletter. However, in practice, these newsletters and update feeds are often overlooked for reasons relating to information overload, not caring or not having the time to digest the information. One factor that also contributes is the lack of a central communication strategy whereby the Communication Unit does not incorporate unit-level communication nor strategy-related communication but is solely responsible for public relations and communicating the public.

A Deputy Director noted that he *“loves the ICT Strategy newsletters and felt they were very useful and important. And it wasn’t written into the strategy that communication was someone’s job to communicate to the wider department”* (P2). Furthermore, he made a comment regarding the responsibility of communication and noted that *“I think that this needs to reside inside the departments communication unit rather than it residing in HR or in ICT. If there is a regular monthly newsletter for all their staff, where all the updates are presented in a single document”* (P2).

The Head of HR noted that *“it’s hard to know whether newsletters are effective. They’re kind of overused”* (P4) and noted that *“we have records management, ICT strategy, Irish Aid, Internal and cultural newsletters”* and concluded that *“we’re thinking of ways to communicate it more effectively throughout the organisation”* (P4).

A Director noted in relation to the newsletter that it’s a *“very complex situation – communication -who actually reads this? What value does it have?”* (P13) and goes on to note that *“static newsletter don’t necessarily add huge value. People have so much information, that she thinks most people don’t have time to read all those things”* and recommends *“video messages – 1 to 3 minutes, if there is a direct email query that concerns them; however, a generic wider thing – [I] haven’t found that it works”* (P13).

Learning and Development

As noted in the discovery phase, learning and development procedures were considered in the creation of the ICT Strategy. Within this context, it’s the mechanism whereby knowledge gets transferred to participating individuals who can use the newly obtained knowledge for future strategy work. To recap, an organisation-wide engagement and collaborative setting was new, and now, it was noted that *“it’s more in the DNA now, the collaborative approach and now its stronger”* (P5). Furthermore, the ICT-SIT members also gained project management experience in collaboration with the PMO of the SGCU.

As the ICT Strategy was being formulated and executed, the HR Strategy was being developed and used the same approach – as it was realised that the ICT Strategy development process was effective. The Sec-Gen notes that *“It’s being replicated for HR. Our HR strategy followed the ICT Strategy – was*

very much developed in the same way. And we've just completed our multi-annual strategy which we're required to do was also done the same way. So overall, strategy making now is done in a much more consultative way" (P38).

Due to its success, the HR Team adopted the strategy setup and model from the ICT Strategy. One ICT observer noted that: *"[ICT Strategy] has a different approach to co-leads, that's for sure. Whether it's good or bad, only time will tell"* and goes on to say that *"The biggest difference is that there is much more emphasise in ICT strategy on tangible outputs and result. There is a lot more in ICT, less scope to fail in ICT. Failure won't be a published failure because you have to go back and do it right. There is a lot more in HR strategy that is much more conceptual and fact-finding"* (P1).

A Director who sat on the ICT-SIT and newly formed HR-SIT noted that *"is a similar structure from the HR strategy implementation – in terms of ownership, the level of commitment and interest of the ICT-SIT has resulted in the HR people taking a much strong lead in delivering and shaping... knowledge is more and ownership is more. You have to be careful that we don't lose sight of that balance – don't lose the business user input. And this would be important for the new ICT Strategy"* (P15).

Furthermore, the HR team noted that they *"really benefited from, having the experience from the ICT strategy as they were further ahead than us. Developing the strategy, doing the consultations, and coming up with the finished product is only the first phase of the project. The second phase was to develop a structure that would effectively allow for strategy implementation"* (P2).

However, changes were made due to learning regarding the co-lead structure. For example, the HR unit stated that *"ICT had exactly the same issues that we had... that we wanted a co-lead mechanisms that would allow an ICT co-lead to work with a business co-lead. And this was the same for the HR, where an HR professional co-lead with a co-lead from across the organisation. So it was very challenging to get people to give up their time for the role, to get the right people and the right mix of people... we needed a cross-section of the department. So that we would get perspective from different levels and types of staff. And so, for the first year of the implementation process, there was a lot of trial and error. Sign-up to become co-leads and then they didn't have time due to their day job. There was no real possibility at the time to have people workload reduced to have them assigned full-time on the strategy work. So it was in addition to their already very busy work loads"* (P2).

5.3.3.3 Technical Aligning in Execution

5.3.3.3.1 Planning Mechanism

The planning mechanism in the execution phase operated through the production of the implementation roadmap and the ICT action plan – in addition to the mid-term review. The former commenced the execution phase while the latter ensured that the implementation was progressing correctly and allowed for planning changes to occur for realignment.

Implementation Roadmap and ICT Action Plan

The implementation roadmap was produced by the Executive Management Group, which is a Management Board Sub-Group chaired by the Sec-Gen. The Implementation arrangements and roadmap were proposed by the EMG and outlined the creation of the ICT-SSG (ICT Strategy Steering Group), the ICT-SIT and their engagement to facilitate the creation of the roadmap. Under which, they outlined the need to partner business and ICT, maximise development opportunities for staff, build capabilities to participation in advanced educational programmes as well as the selecting of eight co-leads for the new Middle Management Network. Workshops were held to facilitate discussion between the EMG as well as the ICT-SIT to develop a shared understanding of their roles in implementing the ICT Strategy.

The ICT Action Plan was an outcome of the planning mechanism whereby business and ICT are aligned with through the strategy artefact. Furthermore, it was used as a guiding tool for the ICT-SIT, whereby the eight co-leads worked on the actions. Each goal area had three to four actions that were to be completed for the implementation of the ICT Strategy.

Mid-Term Review

The Mid-Term Review was produced out of shared discussions that took place between senior managers during a workshop – which was attended by the MB, ICTG-SC, ICT-SIT, SGCU and the ICT Unit. The workshop emphasised on-the-job leadership development while also focusing on collaborative learning. The workshop itself consisted of six review sessions: four of which related to the goal areas while the other two were a review of ICT Unit resourcing and a review of the form and function of the ICT-SIT.

5.4 Comparison: Framework versus Extant Literature

This section is concerned with comparing the mechanisms presented in the framework with extant literature. While a literature review has been presented in Chapter 2, the emphasis of this section is to compare the mechanisms as they link to the literature. While the literature review guided the data collection and analysis as a conceptual lens, the classification of mechanisms is unique to this research and categorised based on grounded theory coding.

5.4.1 Structural Alignment

Structural alignment is defined as coordinating activities across business units and ICT units” (Brown, 1999: 429). Based on this definition, structures are used to facilitate the coordination of activities through governance and control mechanisms. Contingency theory suggests that structures are formed from demands imposed by technical tasks that are to be achieved (Gupta et al., 1994) and therefore emerged in the DFAT as a result of seeking to prepare and execute the ICT2020 Strategy. The governance mechanisms therefore refer to the management systems whereby business-ICT actions

are coordinated while the control mechanisms refer to the control processes and artefacts that are used to guide actor's actions during the strategy development process. The following section will now compare the mechanisms derived from the research with the extant literature on strategic alignment specifically and draws on the wider management domain for additional context.

5.4.1.1 Governance

From a contingency theory perspective, governance has been proposed as a variable to facilitate and or mediate business-ICT technical alignment and assist in social alignment (Gerow et al., 2015; Wu et al., 2015). Most commonly, ICT Governance has referred to structural mechanisms from an individual leadership perspective (i.e., CIO-CEO communication, CIO on the board), from an expertise perspective (i.e., ICT expertise of business) as well as a group perspective (i.e., steering committee, councils and advisory). Similar to the literature, this research also identified the creation of governance structures – such as the ICT Governance Steering Committee (ICTG-SC) which was comprised of senior members of both business and ICT and operated as a sub-group of the management board. This group facilitated the ICT2020 Strategy development process and thereby created structural alignment between business and ICT. Prior groups as noted in the narrative chapter (i.e., KMTF) did not have significant management support nor ICT members and therefore the interviewees who formed the KMTF was not effective in facilitating the alignment between the two divisions.

What was unique in the research was the repurposing and adaptation of ICT governance structures to the specific phases of the strategy development process. Literature typically focuses on existing groups in a cross-sectional manner and investigates the members of the group, degree of communication, as well as the degree of shared knowledge and mutual understanding (i.e., social alignment) but have not investigated the process. Strategic management literature often classifies ICT Governance as a precursor or enabler of strategic alignment. The thesis, however, classifies ICT Governance as a structural alignment mechanism that precedes social and technical alignment. The reason for doing so is to segregate the alignment classifications from the wider strategic management into their separate compartments to identify the unique mechanisms at play. ICT Governance plays an important role, and leading scholars in the field noted that ICT Governance practices and approaches “enable that ICT sustains and extends the business goals, or in other words, enable that ICT is aligned to the business needs” (De Haes & Van Grembergen, 2009: 123). As such, it is evident that governance mechanisms are vital in enabling the alignment.

5.4.1.2 Control

The control mechanism is used to refer to control processes that are used to guide the strategy development process and consists of policies, systems, oversight as well as project management. These types of factors set specific rules, objectives and procedures and therefore reflect rules of engagement in which the organisation-wide strategy development is to occur.

Within the framework derived from the research, the control mechanisms are part of the structural component, but focus on aspects where the processes are controlled as well as the degree and centralisation of control. For example, control in the discovery phase is primarily concentrated at senior management level where the guiding of actions is done in a top-down manner to provide the initial enablement of the ICT2020 strategy development process. In the formation phase, the strategy work is democratised in the sense that control is given across the hierarchy and dispersed among various divisional and unit groupings. In the execution phase, the control is primarily situated within the teams allocated for implementation.

From a literature standpoint, strategic alignment did not cover the locus of control across strategy development phases, but rather the strategy as a process domain elucidated types of strategic processes based on the degree of control – for example Mintzberg & Water's (1985) distinction between deliberate and emergent strategies or Burgelman's (1991) autonomous versus intended strategising. This research however, found that the degree of control shifted across the phases and therefore various degrees of emergent and deliberate actions arose. Furthermore, the concentration of control across phases also denoted the impact of various groups on the guiding of the strategy development process.

5.4.2 Social Alignment

Social alignment succeeds structural alignment, as the research has indicated that structural components – such as governance and control mechanisms – dictate the social structures in the organisation.

5.4.2.1 Relational

As specified in Chapter 2 (Section 2.3.1.5) relationships play a vital role in promoting ICT initiatives which in turn have contributed to the development of technical alignment. Relationships in literature primarily refer to the business-ICT relationships at executive level whereby CIO and CEO relations, interactions and communication via both formal and informal channels facilitate business and ICT goals, objectives and missions being aligned (Jarvenpaa & Ives, 1990; Edwards, 2000; Chen et al., 2010; Moon et al., 2018; Shao, 2019). Such relationships were also exhibited within the Department through the ICTG-SC – a sub-group of the executive board – and therefore allowed the Head of ICT to have direct exposure and communication channel to the TMT. While the literature focuses on executive-level relationships between business and ICT, this research also uncovered the importance of cross-departmental business-ICT relationships across hierarchies to achieve technical alignment, rather than the relationships aimed purely at support, resource allocation and staff mobilisation.

Relational mechanisms presented in the theoretical framework primarily relate to network searching activities, relationship forming and leveraging as well as the deepening of engagement amongst

business and ICT cohorts. Network searching activities refers to actors seeking out relationships within the intraorganisational network – while also searching within the professional network for actors from other governmental Departments. In the context of the study, evidence presented illustrated that the senior members of the Department brought in members from other governmental Departments to participate and engage in the strategy workshops. Previous research has found that actors may make use of informal networks of organisations (Chan, 2002) that may assist in achieving and sustaining alignment. Network searching also occurred whereby business and ICT relationships were fostered prior to the strategy development process due to prior engagements (i.e., passport office project) – where ICT was able to re-establish a connection and gain insight from the business. This is supported in the literature by Reich & Kaarst-Brown's (2003) study of ICT career transitions where the case organisation dispersed their ICT personnel and overtime, a network was established between ICT and business that was used to disseminate knowledge and create both formal and informal relationships. The relational mechanism (i.e., network searching) interacts and supports the knowledge transfer mechanisms as these relationships generate intellectual capital via social networks and produce new knowledge (Tsai, 2001).

Relationship forming and leveraging at individual and group-level has not received attention within the strategic alignment literature nor in the wider information systems research domain. While relationships have received attention, the process of individuals forming these relationships or leveraging these relationships to achieve alignment does not. However, the literature may benefit from incorporation of organisation behaviour literature by understanding stages of bilateral and group relationship formation as well as power dynamics to ascertain the implications of such processes to technical alignment. For example, research on innovation processes of groups find that relational interplay between social (i.e., relationships between actors) and material elements (i.e., strategic artefacts) facilitate innovation (Garud et al., 2013) and could therefore be linked to greater technical alignment. Similar to relationship forming and leveraging, the degree of engagement is not a prominent theme within strategic alignment literature which rather draws on organisation development via the thematic areas of participation of actors within the strategy development process. Specifically, strategic alignment literature could draw on other literature such as forms of participation (i.e., Abildgaard et al., 2020) to differentiate between different dimensions of participation (i.e., in workshops and group work for strategy development) to determine how the directness (i.e., degree of deepening engagement) influences technical alignment.

5.4.2.2 Knowledge Transfer

Knowledge transfer is a common theme within strategic alignment, but often refers to social capital as opposed to explicitly the sharing of information. Knowledge transfer in research typically focuses on

the outcome of transferring knowledge, such as shared understanding and mutual knowledge between business and ICT (Boynton et al., 1994; Nelson & Coopride, 1996; Ranganathan & Sethi, 2002). Within the context of this research, the emphasis is primarily on learning and development and communication. Specifically, this focuses on the transfer of both explicit and tacit knowledge. Whereas explicit knowledge is easily expressed and transferred through oral and written communication, tacit knowledge is acquired through experience and therefore facilitated through on-the-job learning and development as well as obtaining insight from different individuals such as external advisors and other departments.

Overall, this draws on social capital theory to reflect that actors within the Department house knowledge resources and that the knowledge transfer mechanisms enacted through governance and control mechanisms facilitate sharing through communication (i.e., newsletters, videos, documents and strategy artefacts) and learning and development (i.e., peer-review, ICTG-SC meetings, strategy groups and workshops as well as on-the-job project management for implementation). Furthermore, in the literature some attempts were made to incorporate the knowledge-based view of strategy to note that knowledge sharing improves technical alignment, and therefore organisational performance (e.g., Kearns & Lederer, 2003; Kearns & Sabherwal, 2007). Others have noted that sharing knowledge between business and ICT units amplifies ICT Governance capabilities (Kude et al., 2017) leading to the notion that governance and control mechanisms are more effective when knowledge sharing occurs between business and ICT senior leadership on the steering committees as well as middle management level within the working groups and strategy workshops.

Learning and development tends to draw on organisational development literature, which was not the emphasis of the strategic alignment literature review. From an organisation development perspective – especially how it ties in with strategic planning, provides insight and confirms the mechanisms, since it draws on “participative and collaborative process of discussion, debate and experiment that involves all those concerned” (Bargal et al., 21992; French & Bell, 1990; cited in Burnes & Cooke, 2012). This facilitates the generation of tacit knowledge amongst participants and further develops the business-ICT relationships to ensure mutual understanding and shared knowledge while also forming relationships that result in a network for future projects and initiatives. Particularly, it was found that a control mechanism (i.e., democratisation of strategy work) facilitated engagement through the strategy workshops and group discussions taking place with participants from all levels and across departments to share knowledge – therefore resulting in a mutual understanding of needs that allowed for objectives and goals to be aligned in the planning process (technical alignment). For a future avenue, business-ICT alignment research could capture and draw on insights from the intersection between strategic management and organisation development (e.g., Appelbaum, 1997;

Schneider et al., 2003; Beer et al., 2005) to further understand the role of the knowledge sharing mechanism across the discovery, formation and execution phases.

Communication is a key aspect of social alignment (Edwards, 2000) and is considered a key enabler of facilitating intellectual alignment (Teo & Ang, 1999; Vermerris et al., 2014). Research, as noted in the literature review typically focus on the quality and richness of communication (Calhoun & Lederer, 1990; Johnson & Lederer, 2006), communication channels (Hu & Huang, 2006) as well as the role of communication as an aligning mechanism (Vermerris et al., 2014). Overall, from a literature standpoint, within the research, the communication mechanisms differ on the specific phase concerned as well as having different objectives.

5.4.3 Technical Alignment

Technical alignment refers to the planning mechanisms through which strategy artefacts are created, whereby these artefacts reflect alignment of business and ICT's goals and objectives. Furthermore, technical alignment succeeds social alignment, where social capital in the form of knowledge transfer via relational networks contribute to intellectual capital and result in business-ICT alignment of goals, missions and objectives.

5.4.2.1 Planning

Planning is at the centre of strategic alignment research and constitutes much of the early ICT literature that later developed into the concept of strategic alignment. Early strategic alignment research emphasised Strategic Information Systems Planning (SISP) as a process whereby technical alignment is the outcome (Lederer & Salmela, 1996; Mentzas, 1997; Grover & Segars, 2005; Newkirk et al., 2008) – as this process would facilitate the creation of a strategic artefact where business and ICT goals and objectives are aligned. While it is agreed that planning is a requirement for technical alignment, the precise approach taken varies. For example, scholars have adopted a contingency theory approach to formulate and discuss how industry characteristics, private-public context, environmental uncertainty organisation size and strategic orientation impact the effectiveness of planning for business-ICT alignment (see Section 2.3.2.2.1 – 2.3.2.2.5).

The planning mechanism is distinct in each of the phases. The discovery phase is aimed at initial assessment of the existing strategies – both internal (i.e., corporate- and business-level strategies) and external (i.e., governmental strategies and reform initiatives) – and serves to understand the collection of strategies and where the ICT2020 strategy could potentially 'fit in'. In addition, the wider organisational systems is critiqued on the basis to understand how ICT can support the organisation. This phase is similar to Mentza's (1997) notion of strategic awareness whereby members involved in the SISP process identify existing business and ICT systems. This notion was also supported by Newkirk

& Colleagues (2008) who noted that greater assessment is required for the strategic awareness and strategy conception phases – and that greater emphasis on the latter two domains predicted technical alignment. Similarly, Earl (1993) indicates the same, whereby studying business before ICT as well as top management involvement in such a process is a critical success factor.

Within both the formation and execution phases, strategic artefacts were produced as an outcome of planning. While previous scholars have conducted empirical studies on the planning process as well as producing artefacts whereby business and ICT goals and objectives are aligned (i.e., technical alignment), the precise format of these artefacts has not received much attention. For example, research typically focused on the communication of the business plans to foster alignment (Calhoun & Lederer, 1990). Within this study, an interviewee noted that the length of the traditional ‘strategy statements’ were off putting due to their length of over 50 pages. Therefore, future research could also examine the length and distribution approach of the strategy artefacts in respect to existing research on communication to determine the most effective way to foster both social and technical alignment in organisations.

Finally, the final vital planning mechanism are the mid-term reviews to facilitate evaluation during the on-going implementation phase in an effort to re-align objectives through incremental change.

5.5 Summary & Conclusion

Overall, this section presents the theoretical framework derived from both literature and research and presents evidence to make a case for each of the strategic alignment mechanisms. As indicated and illustrated throughout, this research has uncovered some mechanisms that are not examined extensively in literature. Therefore, Chapter 6 will shed light on these findings and present both theoretical contributions as well as future research agenda to further develop and build on the theoretical framework.

Chapter 6: Conclusion

6.1 Introduction

This chapter concludes the doctoral thesis and builds on the previous chapter by outlining the contributions, limitations and the future research agenda. Section 6.2 outlines the overarching contributions to theory and practice. Section 6.3 makes the reader aware of the limitations of the study, particularly, drawing on the methodological choices. Section 6.4 offers potential avenues for further research based on the contributions and findings identified. Section 6.5 provides concluding remarks of the research journey.

6.2 Contributions

The aim of research is to contribute to literature – and therefore this section seeks to outline those contributions to theory, empiricism and professional practice on the topic of strategic alignment. First, section 6.2.1 presents the theoretical contributions, which includes a phase-based view of strategic alignment, a segregated analysis of strategic alignment as well as the mechanisms. Section 6.2.2 outlines the empirical contributions which relate primarily to the insight captured from the Department of Foreign Affairs via the case study approach – which may support further foreign affairs research. Section 6.2.3 outlines the contributions to professional practice as the insights obtained from the study are useful in assisting future strategy work in government departments. Finally, Section 6.2.4 presents a conceptual contribution whereby a methodological approach is offered for the examination of strategic alignment processes from a strong process perspective, as defined by Whitehead.

6.2.1 Theoretical Contribution

The contribution to theory in the wider management domain has been extensively discussed (Van de Ven, 1989; Whetten, 1989; Eisenhardt, 1989; Dyer & Wilkins, 1991; Sutton & Straw, 1995; Weick, 1995) and agreement among scholars suggests that it's the principle of the scientific discipline. The theory presented here is a process theory grounded in data and assists in organising conceptual thoughts and generating a coherent explanation of strategic alignment in the context of public service organisations. The emergent explanatory framework is closely tied to the narrative and therefore the theoretical framework reflects the phenomenon under investigation. The contribution seeks to fill the gaps presented in Section 2.3.3 where a counterargument was offered against the criticisms of strategic alignment – where consistent calls have been made for longitudinal studies of strategic alignment, which also facilitates the transition from pure a content-based approach to a process-based interpretation of strategy work.

6.2.1.1 A Phase-based View of Strategic Alignment

As outlined in Section 2.3.5.4, there are only a few process-oriented studies on strategic alignment (Burn, 1993, 1996; Sabherwal et al., 2001; Street et al., 2018; Yeow et al., 2018). These studies offer initial insight that alignment should be viewed from a dynamic strategy and change perspective – where cycles of alignment and realignment occur. For example, Burn (1993, 1996) examined strategic alignment longitudinally and identified instances of where ICT either leads or lags business, and vice versa. This lead-lag model of business-ICT strategy alignment (i.e., technical alignment mechanism) illustrates that different organisational configurations (Miles & Snow typology) result in different instances of where ICT 'pulls' or business 'pulls'. Sabherwal et al. (2001) also adopt Miles & Snow's typology to examine strategic alignment over time and they identify multiple cycles of evolution and revolution in case organisations without offering distinct phases. Street et al. (2018) adopt Sabherwal et al.'s theoretical framework (Miles & Snow typology) and methodological approach but apply it in

the context of new ventures – and thereby identify multiple ‘perspectives’ on strategic alignment such as: causation, effectuation and bricolage.

Yeow et al. (2018: 56) were the first to make significant progress in the study of strategic alignment from a processual study by adopting a single case study and offering a “process model [that] explicates a set of generalizable organizational actions that enables the aligning process, thus contributing to current research that has begun to look at different actions required to achieve alignment”. The study produces an overview of aligning actions based on dynamic capability model of strategy (i.e., content-based model) and identified three phases (exploratory, building, and extending) in which three types of aligning actions (sensing, seizing and transforming) operate. Their research focuses on technical alignment with an emphasis on resource allocation across alignment phases to determine the strength of business-ICT strategy alignment.

The phases uncovered here contribute by 1) showing that strategic alignment is inherently embedded within strategy work and specifically within the strategy development process rather than being a unique process itself; and 2) presenting the discovery, formation and execution phases of strategy development through which alignment forms through the structural, social and technical dimensions. While previous studies have addressed alignment and re-alignment via the lead-lag model or investigated aligning actions, this study further develops the notion of alignment being embedded in strategy work and therefore that aligning occurs within the strategy process as opposed to being separate. This contribution was facilitated through the longitudinal research design, where it was found that the strategy development process enabled structural, social and technical alignment – as opposed to singular actions by individuals or groups. Furthermore, prior studies have consistently outlined critical success factors, enablers and antecedents to strategic alignment, but this study offers the opportunity to place the specific factors or enablers into precise phases to understand at what stage these are most vital – as alignment is not a one-off event but developing and changes overtime.

6.2.1.2 Segregated View of Strategic Alignment

Typically, the literature uses the term ‘strategic alignment’ to denote either structural, social or technical alignment – or a combination of these. As alluded to in the literature review, researchers adopted various conceptualisations and definitions of strategic alignment, by either focusing on the structural, social, technical or operational components. This conundrum was further exemplified by Gerow et al. (2015: 541) who noted that “the existing empirical alignment research does not always specify the alignment dimension; rendering it difficult to aggregate findings across studies”. As opposed to the predominant singular lens deployed, this study contributes by segregated strategic alignment into structural, social and technical alignment. While studies have indeed viewed aspects of alignment in these respective components, no study has viewed all three dimensions of alignment in a singular study.

The segregated view also makes explicit mention of the sequential nature whereby structural alignment (i.e., governance and control mechanisms) shape the development of social alignment, and social alignment facilitates technical alignment. This type of visualisation contributes by offering a more structured and systematic lens of examining alignment within strategy development processes. Furthermore, the argument made here is that technical alignment (which is often referred to as strategic alignment) cannot be viewed from a singular lens, as there are structural and social components that impact intellectual alignment.

6.2.1.3 Mechanisms

The third contribution is that of mechanisms. Having deployed a critical realist processual study, the thesis uncovered a set of mechanisms responsible for structural, social and technical alignment. To date, no study has yet explicitly investigated strategic alignment to delineate a set of mechanisms but have deployed positivist and interpretivist approaches to identify critical success factors, antecedents and enablers that lead to technical alignment. Based on the literature review, these types of findings relate to social and structural components, and therefore are to be classified as such. One may present the notion that the lack of research aimed at mechanisms is not a theoretical failing, but rather a methodological one – where the most popular forms of research method (i.e., quantitative contingency and congruence setups) and philosophies (i.e., positivist) are primarily suited to identify prerequisites to alignment such as success factors or antecedents rather than mechanisms. For example, Pentland (1999) notes that narratives are vital in describing the sequence of events, and that mechanisms are identified through explaining the sequence of events. While the mechanisms are context-specific, as per the nature of critical realist case studies, further research is required to confirm the set of mechanisms in differing contexts to identify a core set of process motors that guide and develop the strategy development process. The outcome would be a dual set of strategic alignment mechanisms: 1) a general set of mechanisms consistent across all organisations; and 2) a context-specific set of mechanisms consistent within specific types of organisations (i.e., by size, industry, private/public). The mechanisms identified in this study are illustrated in Section 5.2.

To conclude, initial progress has been made with identification of the mechanisms for the respective strategic alignment dimensions – but further research is required to investigate structural alignment mechanisms (governance and control), social alignment mechanisms (relational and knowledge transfer) and technical alignment (planning).

6.2.2 Empirical Contribution

Empirical contributions are “accounts of a phenomenon or details of a phenomenon not previously covered by research or covered to a limited extent” (Agerfalk & Karlsson, 2020: 111). Indeed, one reason the Department of Foreign Affairs was selected as a case study was its uniqueness as well as

the degree of access to information – which severely limits other researcher’s ability to obtain significant contextual data from internal strategy artefacts, access to members of the executive board as well as currently serving ambassadors and other diplomats. The utility of such a contribution is twofold: on one hand, government research in strategy work is making significant strides (Hansen et al., 2022) and the case narrative particularly can offer another researcher secondary data to pursue a multi-case study or be used to investigate future Departmental ICT strategies and use the narrative as a precursor to understand the context, structure and strategies of the case’s timeframe; and secondly, the case adds value to the senior managers and diplomats of the Department, who can review the case narrative as a real-life case study to learn about strategy work in the public sector and ultimately benefit future strategies in the service.

6.3.3 Professional Practice

In addition to the requirement to contribute theoretically from an academic and scholarly publication point of view, the argument to contribute to professional practice remains. Therefore, this section outlines how professionals are able to utilise the findings of this study to assist in strategy work in a governmental organisation. Throughout the past decades, the theory-praxis gap has been examined in information systems research specifically and it was proposed that future research should seek to adopt a critical realist ontology to offer greater explanatory power to practitioners through the identification of mechanisms (Smith, 2006). The following section will therefore outline two contributions that offer utility to professional practice: 1) a collaborative approach to strategy work that fosters engagement and participation while drawing on a wide range of internal and external expertise; and 2) learning and development as a process for business-ICT knowledge transfer and future alignment capabilities.

6.3.3.1 Collaborative Strategy Work

The research uncovered a collaborative model of strategy work that facilitated greater alignment across the formation and execution phases. The collaborative approach was selected within the discovery phase by senior management who decided on an approach that emphasises co-ownership, co-creation and co-leadership – which manifested in the strategy workshops through the four groups in the formation phase as well as the co-lead structure during the execution phase. This model therefore engaged both business and ICT in a structural setting to produce social alignment and subsequent technical alignment (i.e., the production of the strategy artefacts). The co-lead model of work fosters relational and knowledge transfer mechanisms between the ICT unit and the various business units and therefore can mitigate the risk of misalignment. While the literature typically focused on social alignment at executive level (e.g., Schlosser et al., 2015), this research found that incorporating mid-level and entry-level employees had a significant positive effect – as they have indicated that they were able to communicate issues that senior management was not aware of.

Collaboration is largely related to the relational mechanism – as it deepens engagement and facilitates knowledge exchange activities. Collaboration does not only occur from an intraorganizational perspective between units, but also is evident from an interorganizational perspective whereby members of auxiliary governmental agencies engage (i.e., OGCIO and DPER) to share resources and knowledge to achieve ICT alignment of DFAT with the central government’s ICT strategy. Collaboration in the public service context is often linked to the notion of ‘open democracy’ whereas in the private sector to ‘open innovation’. Both these notions reflect the increased collaboration amongst organisational networks – and constitutes engagements with various external actors. Another guiding action for practitioners operating within the public service domain is to draw on external expertise within the wider government ecosystem – which refers both to the national central government organisation (i.e., DPER & OGCIO), other Departments as well as the European Commission (e.g., Directorate-General for Informatics). Within the case study, the use of external expertise played a vital role in the discovery phase of the strategic development process. Like the collaborative model of alignment, bringing in experts who have experience with digital transformation and ICT-related strategy development in the public sector context proves fruitful to facilitate understanding and promotes learning.

To conclude on professional practice, senior management, when designing and preparing for the strategy development process, need to establish the approach from the beginning and ask unit and department heads for specific members who are willing to allocate their time and effort in engaging with ICT to formulate goal areas and identify needs. In the formation phase, it’s vital to bring together employees from all levels across the department – on one hand, to have senior management there to offer support and commitment as well as lower-level employees to bring information and knowledge from their experiences. In the execution phase, it’s vital to establish a co-lead model to have teams of business and ICT working in unison to implement the objectives – rather than having either business or ICT, as this furthers the relationship between the two groups and offers benefits for further projects.

6.3.3.2 Learning and Development

This study found that learning and development plays a crucial role in the achievement of technical alignment, as learning and development amongst the business and ICT participants facilitated relationships and knowledge transfer which played a significant role in the production of strategic artefacts in both the formation and execution phases. This section will outline two actions from a practitioner standpoint: 1) on-the-job learning; and 2) intra-Department job rotation.

On-the-job learning and development processes were crucial for the development of competences that facilitates the strategy development process. In relation to the framework, on-the-job learning emphasises both control and knowledge transfer mechanisms – the former referring to project management skills while the latter on the development of tacit knowledge. These skills leveraged the

employee's ability to participate in the strategic development process to ensure adherence to the planning mechanisms and to foster engagement with their co-lead partners to achieve the production of the strategy artefact.

For example, on-the-job learning is essential to organisational knowledge management and knowledge transfer whereby a non-ICT employee develops an understanding of ICT and the ICT Unit in the context of the business and therefore facilitates subsequent technical alignment. This can be further emphasised through the knowledge-based view of strategy where researchers have shown that knowledge sharing and participation between business and ICT units lead to performance increases and a competitive advantage (e.g., Kearns & Lederer, 2003; Kearns & Sabherwal, 2007).

Finally, this research also uncovered that cross-functional staffing – via the Doha Declaration's requirement for Foreign Ministries to rotate staff continuously – and the collaborative model of alignment facilitates knowledge integration throughout the organisation which also improved shared domain knowledge. This creation of social capital amongst business-ICT participants improves the ability to ensure alignment between business and ICT goals.

Intra-unit job rotation is another critical factor linked to the human-centric approach like on-the-job learning and development. In a literature review on the impact of HRM on strategic alignment, Oehlhorn et al., (2020) indicated on-the-job development could facilitate alignment. From a practical standpoint, this resonates based on discussions with the interviewees. Much of alignment between business and ICT units requires engagement, relationships and the ability to leverage network. For example, within the DFAT's passport unit, an ICT member was delegated to the unit to operate as an inhouse ICT expert for the passport system. Through this three-year stint, the ICT member fostered relationships with the business units that remained after being assigned to the ICT unit again. This facilitated the co-lead relationships with the members and acquainted the business unit with ICT knowledge and language while respectively also assisting the ICT member in understanding the needs and requirements from the business side. This instance indicates relational mechanisms that contribute to technical alignment.

6.3.4 Conceptual Contribution

The final contribution to be discussed is of a conceptual nature; specifically, the construction and resultant debate regarding the examination of process metaphysics in the context of critical realism and contextualism for the inquiry in strategic alignment. While neither the deployment of critical realist ontology nor the adoption of process philosophy is unique in the domain of information systems, the in-depth examination of 'process' warrants a conceptual contribution and lays the ground for further research. To summarise, chapter 3 offers a debate by illustrating the theoretical underpinnings of the critical realism philosophy, contextual world view as well as process metaphysics.

While complementary from a high-level perspective, certain ontological and epistemological pillars have tensions with one another; specifically, between the Whiteheadian processual interpretation and the critical realist transcendental realist ontology as well as process logic's epistemological implication in conjunction with critical realist and contextualist epistemological relativism. The contribution therefore lies by resolving these tensions through a discussion and presenting a set of notions that led to the researcher's philosophical position that guided inquiry of strategic alignment. These ontological positions – as outlined in section 3.3.1 – emphasise 'strong process' as well as an open-system and strong-realist ontology.

In order to delineate the similarities and differences of processual perspectives taken in strategic alignment, it is important to provide a high-level overview of processual positions in literature. In doing so, it is necessary to reiterate Van de Ven's (1992: 170) identification of three process archetypes in general management literature: 1) process as an explanation for variance theory; 2) process as a category of concepts; and 3) process as a developmental event sequence. To date, it has been observed (i.e., the literature review) that the majority of SA literature is classified by the 1st and 2nd definition of process. For example, the studies adhering to the 1st definition tend to deploy contingency theories whereby variables are examined via a multi cross-sectional method (e.g., obtain data points a specific time across multiple times) to understand the process of strategic alignment by observing changes in variables – and thereby use inference to understand cause and effect. On the other hand, studies adhering to the 2nd definition are those that adopt the content-based approach to strategic management, by imposing pre-defined categories (i.e., process as a category of concepts) onto the strategic alignment development process that leads researchers to determine if change occurred and not how change occurred (i.e., 'what' is aligned based on prior literature, now 'how' the alignment took place). The 3rd definitions tend to share greater similarity with the approach taken in this thesis by adhering to sequences of events over time. However, here a distinction needs to be made and this is where the contribution emerged. The 3rd definition of Van de Ven's (1992) process category is more aligned with a 'soft' or 'weak' approach to process – whereby the subject of the inquiry and investigation is an entity (i.e., company, group, etc) rather than the process itself. The process-based SA literature discussed in the literature review tended towards weak processism (Section 2.3.2.3.2).

This thesis, however, took a strong processual position as alluded to in Chapter 3 through debating and examining various philosophical and intellectual strands – where the argument was made to choose process over substance and therefore inherently focus on the process itself, characterised as an enactment. Ultimately, the position taken reflects Whiteheadian process thinking that takes a strong approach with process primacy over substance. While some argue that this approach poses pragmatic challenges (e.g., Bizzi & Langley, 2012), the critical realist philosophy offers a solution through allowing the identification of mechanisms (i.e., process motors) that capture the dynamics

that shape and guide the process as it unfolds overtime. As such, this thesis contributes by offering a methodology that adheres to strong process in the context of alignment research.

To conclude, the main advantage of this conceptual advancement is the methodological fit between the components outlined in Chapter 3; namely, the delineation of key steps and positions towards a greater understanding of process theory in the examination of strategic alignment. Further, this study is the first to deploy this logic in the context of strategic alignment – and therefore offers an initial steppingstone for further investigating development process through this lens. For example, the weak view of process assumes bounded systems (i.e., formal hierarchies, groups and relationships) and doesn't consider that boundaries are more malleable – such as informal structures and relationships, whereby the process is impacted by emergent actions via autonomous actors; that is, actors guiding and shaping the process outside the scope of the project's mandate. By conducting an in-depth narrative review and drawing heavily on rich contextual data spanning multiple years and decades and understanding of mechanisms responsible for understanding the development of strategic alignment become apparent. As such, this thinking widens the understanding and introduces a wider range of individuals, entities and processes outside the standard strategy groups or standard business/ICT units that influence the development of strategic alignment. Therefore, this methodological setup constitutes a conceptual contributes by allowing researchers to think of strategic alignment differently and more holistically – and puts it on track for future research.

6.4 Limitations

All studies have limitations, and therefore so does this research program. As is evident throughout the thesis, conscious choices were made regarding the methodological approach to ensure that the methodology could achieve the objectives of the study. For example, initial inquiry and choices revolved around using quantitative studies due to the researcher's competence but shifted significantly once gaps were identified within the literature review. Constant calls for longitudinal, process and critical realist-based studies have resulted in a set of choices reflected in this study. However, these choices nevertheless carry limitations, even though these were selected based on prior limitations in existing research. The following section outlines the limitations which relate primarily to the method and data quality as well as the approach to reviewing literature.

Limitation 1 (Method): the method adopted that of a single case study – which from a positivist perspective, lacks the ability for generalisability since $n = 1$. The reason for selecting this approach is to facilitate an in-depth contextual inquiry into the DFAT's ICT2020 Strategy and thereby capturing the events and projects from 2000 to 2019 while also providing historical context to obtain an understanding of the characteristics of the Department. As it was based on a single case study, this

study may lack generalisability as the phenomenon was only examined within this bounded context, and therefore it may be beneficial to conduct additional case studies to confirm the findings.

Limitation 2 (Data Collection): the primary data was collected through interviews – and therefore, limitations are associated to the medium, retrospective data quality, the researcher’s competence as well as the use of real-time and post-hoc transcribing. The medium used was via telephone – as the preferred method by the interviewees, aside from two which explicitly requested Skype. The medium was used due to COVID-19 restrictions, although the ideal planned medium would have been face-to-face in person dialogue for those diplomats and employees based in Ireland. This approach is limited as the researcher was not able to view facial expressions and therefore guide the discussion for the unstructured component of the semi-structured interview method due to the inability to precisely gauge questions in response to certain statements. Therefore, the researcher had to rely on tone of voice in order to determine whether to dive deeper into a certain topic. Interview data is also fraught with retrospective data quality, whereby interviewees potentially lack the ability to precisely pinpoint an event or elaborate on context on scenarios that are from multiple years ago. To mitigate this risk, triangulation was used to best inform the case narrative – from both secondary and primary data.

Being a junior researcher, the researcher’s interviewing skills are not as extensive as seasoned scholars and therefore may have reduced the ability to gain additional insight. Finally, post-hoc transcribing and real-time notetaking were used. A significant portion of the interviewees are active diplomats (including several ambassadors) and therefore the active decision was made to not record the interviewees to remove the interviewees hesitancy to speak freely. This decision was paramount as the diplomats openly were able to discuss issues, failures as well as events that are viewed as negative. This facilitated the ability to gain deep contextual insight and obtain pure data. Interviewees often also noted that a specific statement was ‘off the record’, as some information shared is restricted and/or classified, due to it being linked to the Department’s ICT infrastructure, process and security. On the other hand, post-hoc transcribing meant that the interviewee data may not be as precise as transcribing recorded data. Nonetheless, this risk was mitigated by asking to follow up questions to the interviewees in case of a potential misunderstanding. Additionally, some questions were further clarified via email to ascertain whether its content was correctly interpreted. Furthermore, over time, the note taking became more advanced and precise – as notes were taken via the computer and fast typing skills allowed for strong transcribing to include the context. Finally, the entire narrative and appendices section was read by the now Deputy Secretary General, Head of ICT and Head of Cyber at the Department where they reviewed the documents and chapter and confirmed its accuracy while also recommending minor changes – such as terminology, additional context or removing a certain ICT-related component (i.e., security-based).

Limitation 3 (Literature Review): refers to the choice of a narrative review format that was selected to facilitate the capturing of strategic alignment literature and may be interpreted as a limitation. Furthermore, the term 'alignment' uses various synonymous and thereby makes it difficult to capture all of the research. Additionally, researchers have commonly used strategic alignment to refer to planning, operational alignment or technical alignment. Systematic reviews are often promoted due to their theoretical ability to capture most if not all the literature based on systematic search of key words using Boolean functions and inclusion/exclusion criteria across various academic search engines. Some may argue that narrative reviews offer less rigour as they may not obtain the same coverage. The narrative review facilitated the ability to forward and backward trace articles as well as to include selected topics on strategy process to elucidate how strategy development processes in the context of business-ICT alignment may be interpreted as a phenomenon.

6.5 Future Research Agenda

This section sets out areas for further academic inquiry into the process view of strategic alignment. The current study provides a foundational phased model of strategic alignment by understanding the structural, social and technical aligning mechanisms – which can aid in advancing the strategic alignment literature specifically, and potentially strategic information systems research in general. Section 6.5.1 proposes the consideration of operational alignment in the context of overall strategic alignment. Section 6.5.2 suggests greater in-depth studies on the socio-structural relationship within the strategic alignment to fully understand how structural mechanisms trigger and guide social mechanisms. Section 6.5.3 considers advancing the explanatory model of strategic alignment by applying it in the private sector domain. Section 6.5.4 presents some mechanism that could benefit from further inquiry as Chapter 5 was not able to align closely with literature regarding the findings.

6.5.1 Structural Aligning & Strategy as Practice

Operational (or Structural) alignment has been examined in strategic alignment literature, but often under the aegis of general strategic alignment as well as referring to certain structural properties of organisations. Furthermore, operational alignment is closely tied to strategy as practice view as it emphasises alignment between business and ICT at the operational 'day-to-day' actions of business and ICT units. To reiterate, the interest of the study was to emphasise the strategic aspect to understand how aligning mechanisms guide the strategy development process – as well as to emphasise strategy as a process within the context of information systems. Operational alignment at operational level was not considered for the study, but structural components emerged. While traditional management literature often cited the structure-strategy debate, to denote whether structure follows or precedes strategy, this research found that structure often seemed to precede social alignment, which itself precedes technical alignment (i.e., planning to ensure business-ICT strategy alignment). Operational alignment therefore warrants further assessment for future research

where the day-to-day actions could reflect mechanisms at micro-level whereby agents adopt certain practices that increase the likelihood or effectiveness of aligning within the specific context.

Galliers et al. (2012) issued a call for papers for the *Journal of Strategic Information Systems* with the emphasis on micro strategy to make an initial attempt to resolve the 'rigor versus relevance' debate. Other authors argued that the debate emerged due to the core emphasis on macro-level strategising which is void of doing strategy (Jarzabkowski & Spee, 2009). Furthermore, 'strategy-as-practice' – scholars argue, is conceptually different from 'strategy-as-process'; however, it's best to view both as complementary with inherent synergies (Burgelman et al., 2018). The ability to combine both practice and process of strategy furthers the frequently cited need to link micro with macro events, and vice versa. Obtaining a multidimensional view of simultaneous strategy- and operational-level events and actions could prove beneficial to the advancement of a dynamic model of strategic alignment.

6.5.2 Socio-Structural Dynamics

Most research focuses on the study of formal structures – that is, structures that are clearly stated and reflected within the organisations, such as hierarchy and reporting lines. However, this research has indicated that the informal network plays a significant role in alignment. Due to a high-degree of job-rotation in the diplomatic service, individuals were able to gather experiences throughout the various department's divisions and units and generate an informal network.

This study sought to understand the foundation of socio-structural dynamics – as prior research has not examined how structural alignment progresses to social alignment. The reason for portraying this, is that Gerow et al. (2015) demonstrate the governance structure (as a variable) has a significant impact on social alignment – presented in their nomological network. While the explanatory framework offers initial insight into the mechanisms, further examination of literature is necessary to fully understand how structures shape and guide social capital creation and influence communication and knowledge transfer through the various mediums. Interestingly, all organisations are social networks and communication is human nature – as such, this domain could potentially draw on sociology, network theory, knowledge management as well as human communication.

The further this agenda, future research might investigate: 1) informal networks by applying network theory methodologies to the study of strategic alignment in organisations; 2) churn and job-rotations impact on alignment in organisations; and 3) the use of informal structures to push for change and projects. For example, Bizzi & Langley (2012) provide an initial overview of studying processes in and around networks – which present complexity of organisations and understand how interorganisational networks emerge – and could be suitable in understanding informal network emergence. Additionally, strategic alliances research could be applied at interorganisational level instead of industry-level whereby allegiances amongst organisational cohorts determine management's ability to enable or

inhibit the strategy development process. Taking a global view – whereby the DFAT is comprised of multiple missions across the world – then an interorganisational network perspective may also be suitable (Ghoshal & Bartlett, 1990) in understanding alignment across geographic locations.

Churn and job-rotation is common in the public sector due to requirements, but can also be investigated in the private sector, for example, voluntary rotation and job placements in other departments could facilitate a bond and thereby informal communication channel between various business units. Aside from the relational aspect, knowledge transfer also increases by facilitating understanding of how ICT develops the infrastructure and systems within the business unit, as well as how the business unit utilises the ICT infrastructure and systems. Further investigation could prove useful in understanding how informal social alignment mechanisms improve technical alignment between business and ICT Units.

Finally, informal structures could pave the way for better understanding. As noted in the case narrative, the initial KMTF was informal in nature as no formal mandate was given nor resources to push the project further. The creation of the task force was voluntary and driven by actors concerned with advancing the use of ICT within the organisation. These informal groups can drum up support at executive level and therefore drive certain projects. Within strategic management, several studies have examined autonomous behaviour and corporate entrepreneurship and how it results in emergent strategy which ultimately impacts corporate strategising (i.e., Burgelman, 1983; Mirabeu & Maguire, 2014).

6.5.3 Differing Context

Due to the contextual requirement for critical realist single case study research designs to uncover and identify mechanisms, future research might investigate various contextual settings using the outlined processual methodology and theoretical dimensions to provide greater explanatory power. Context is vital in the understanding of strategic alignment, especially relevant in structural and social dimensions – which itself have an impact on technical alignment. Context in the sense here refers to organisational and national culture as well as firm characteristics such as industry, size and whether it's a private or public sector organisation. Furthermore, it is evident that firm characteristics and culture mutually impact one another – and therefore the general requirement for differing contexts is essential.

For example, cultural influences have the possibility of inducing socio-cognitive inertia (Besson & Rowe, 2012) and therefore the degree of resistance is tied to the culture or firm characteristics, that can inhibit technical alignment (Cooper, 1994; Silince & Frost, 1995). Additionally, organisational culture has shown to influence the behaviour of leadership, whereby the CEO in more agile and flexible corporate settings positively influences technical alignment (Shao, 2019). Other studies have also

emphasised values and culture, whereby business and ICT doesn't effectively operate together therefore produces conflict (Martisons & Westwood, 1997). However, most of these studies are applied in the general information systems domain; however, these topics could merit application specifically to technical alignment. As such, the future research agenda should investigate contextual settings across structural, social and technical alignment to determine how culture shapes the strategy development process. The overarching aim is to identify a core set of alignment mechanisms that remain consistent across context, as well as identifying context-specific mechanisms.

6.5.4 Mechanisms

This study presents a set of five mechanisms relating to their respective alignment dimension. While these mechanisms are grounded within the data – and therefore specific to the context – other mechanisms may arise when the research is replicated in a different context. Furthermore, the mechanisms that were uncovered did not have support in the literature within the strategic alignment domain – and as such, require further investigation by drawing on auxiliary management domains such as knowledge management, organisation development and organisation behaviour. The following section will outline a future research agenda for social alignment and technical alignment, as well as a further phase-based interpretation of the mechanisms in literature.

This research has uncovered that the relational and knowledge transfer mechanism is vital in leading to social alignment. While both have been researched in literature, future research could further the understanding from this study in relation to strategic alignment. For example, future research could investigate the role of individual-level relationships forming and the leveraging of relationships to understand the impact on social alignment, by drawing on organisation behaviour. Specifically, relationship forming between business and ICT was seen as crucial to facilitate knowledge transfer between the two groups of individuals which manifested in the production of strategic artefacts – where business and ICT mutual understanding led to alignment between business and ICT goals and objectives. Furthermore, the knowledge transfer mechanisms present a future avenue for research; specifically, how knowledge sharing facilitates technical alignment. It is recommended to draw on organisation development literature to further investigate participative engagement and its impact on knowledge creation, retention and sharing between business and ICT. Prior research typically examined knowledge transfer between executives – and investigations at middle or lower management levels could provide insight due to their 'on the ground' knowledge.

The second avenue for research in relation to mechanisms is further detailing the re-alignment actions within the execution phase, to ensure that technical alignment is sustained throughout the implementation of the strategy. While research within strategic management and related planning literature in information systems has examined evaluation as a phase after implementation, there is a

need to find investigate evaluation and reviews within the implementation phase to understand how actors proactively ensure alignment throughout the implementation phase. From a process theory standpoint, if actors were to implement the strategy developed in the formulation phase, the strategy would not be implemented as intended due to emergent and autonomous actions that influence the end goals. As such, these review and evaluation mechanisms seek to re-align technical components (similar to push-pull model from Burn) to facilitate this.

The third avenue of research is to include critical success factors, enablers and disablers as well as antecedents into discovery, formation and execution phases to offer more relevant insight. Previous research is cross-sectional, and surveys were issued to hundreds or thousands of organisations, therefore it is difficult to identify success factors, enablers or antecedents to specific phases as the organisations being questioned or researched were operating in different phases of strategy development or were asked questions from a time where no strategy development work was on-going.

6.5 Concluding Remarks

This chapter outlines the contribution to research, empiricisms as well as professional practice and therefore concludes the doctoral thesis from a research standpoint. The six chapters outlined reflect the work conducted over several years of the research journey. The aim of the research project and resultant doctoral thesis was to explore my interests as well as develop skills required to contribute to literature by conducting structured research.

Bibliography

100 Years - Department of Foreign Affairs. (n.d.). Retrieved May 23, 2022, from <https://www.dfa.ie/about-us/ourhistory/100years/>

Abildgaard, J. S., Hasson, H., von Thiele Schwarz, U., Løvseth, L. T., Ala-Laurinaho, A., & Nielsen, K. (2020). Forms of participation: The development and application of a conceptual model of participation in work environment interventions. *Economic and Industrial Democracy*, 41(3), 746–769. <https://doi.org/10.1177/0143831X17743576>

- Ackoff, R. L. (1967). Management Misinformation Systems. *Management Science*, 14(4), 147–157.
- Ågerfalk, P. J., & Karlsson, F. (2020). Artefactual and empirical contributions in information systems research. *European Journal of Information Systems*, 29(2), 109–113.
<https://doi.org/10.1080/0960085X.2020.1743051>
- Ahlstrom, P., & Karlsson, C. (2008). Longitudinal Field Studies. In *Researching Operations Management* (p. 40). Routledge.
- Al-Saji, A. (2004). The memory of another past: Bergson, Deleuze and a new theory of time. *Continental Philosophy Review*, 37(2), 203–239. <https://doi.org/10.1007/s11007-005-5560-5>
- Alford, J., & Greve, C. (2017). Strategy in the Public and Private Sectors: Similarities, Differences and Changes. *Administrative Sciences*, 35(7), 1–17. <https://doi.org/10.3390/admsci7040035>
- Ali, S., & Green, P. (2012). Effective information technology (IT) governance mechanisms: An IT outsourcing perspective. *Information Systems Frontiers*, 14(2), 179–193.
<https://doi.org/10.1007/s10796-009-9183-y>
- Andrews, R., Boyne, G. A., Law, J., & Walker, R. M. (2009). Strategy formulation, strategy content and performance: An empirical analysis. *Public Management Review*, 11(1), 1–22.
<https://doi.org/10.1080/14719030802489989>
- Astley, W. G., & Van De Ven, A. H. (1983). Central Perspectives and Debates in Organization Theory. *Administrative Science Quarterly*, 28, 245–273.
- Avenier, M.-J., & Thomas, C. (2015). Finding one's way around various methodological guidelines for doing rigorous case studies: A comparison of four epistemological frameworks. *Systèmes d'Information et Management*, 20(1), 1–38. <https://doi.org/10.3917/sim.151.0061>
- Avila, O., & Garcés, K. (2017). Change management support to preserve business-information technology alignment. *Journal of Computer Information Systems*, 57(3), 218–228.
<https://doi.org/10.1080/08874417.2016.1184006>
- Avramidis, E., & Smith, B. (1999). An introduction to the major research paradigms and their methodological implications for special needs research. *Emotional and Behavioural Difficulties*, 4(3), 27–36. <https://doi.org/10.1080/1363275990040306>
- Baker, J., Jones, D. R., Cao, Q., & Song, J. (2011). Conceptualizing the Dynamic Strategic Alignment Competency. *Journal of the Association for Information Systems*, 12(4), 299–322.
- Baker, L. M. (2006). Observation: A complex research method. *Library Trends*, 55(1), 171–189.
<https://doi.org/10.1353/lib.2006.0045>
- Bakos, J. Y., & Treacy, M. E. (1986). Information technology and corporate strategy: A research perspective. *MIS Quarterly: Management Information Systems*, 10(2), 107–119.
<https://doi.org/10.2307/249029>
- Ball, L., & Harris, R. (1982). SMIS Membership Analysis SMIS Members : A Membership Analysis By : Leslie Ball. *MIS Quarterly*, 6(1), 19–38.
- Banker, R. D., Hu, N., Pavlou, P. A., & Luftman, J. (2011). CIO Reporting Structure, Strategic Positioning, and Firm Performance. *MIS Quarterly*, 35(2), 487–504.
- Barnard, C. (1938). *The Functions of the Executive*. Harvard University Press.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. In *Journal of Management* (Vol. 17, Issue 1, pp. 99–120). <https://doi.org/10.1177/014920639101700108>
- Barribal, K. L., & While, A. (1994). Collecting data using a semi-structured interview : a discussion paper. *Journal of Advanced Nursing*, 19, 328–335.

- Barrington, A., Carpenter, B., & MacFeely, S. (2014). Setting out a vision for the civil service in Ireland. *Administration*, 62(3), 65–92.
- Benbasat, B. H. R. and I. (2000). Factors That Influence the Social Dimension of Alignment between Business and Information Technology Objectives. *MIS Quarterly*, 24(1), 81–113.
- Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The Case Research Strategy in Studies of Information Systems Case Research. *MIS Quarterly*, 11(3), 369–386.
<https://doi.org/10.2307/248684>
- Benlian, A., & Haffke, I. (2016). Journal of Strategic Information Systems Does mutuality matter ? Examining the bilateral nature and effects of CEO – CIO mutual understanding. *Journal of Strategic Information Systems*, 25(2), 104–126. <https://doi.org/10.1016/j.jsis.2016.01.001>
- Besson, P., & Rowe, F. (2012). Strategizing information systems-enabled organizational transformation: A transdisciplinary review and new directions. *Journal of Strategic Information Systems*, 21(2), 103–124. <https://doi.org/10.1016/j.jsis.2012.05.001>
- Bharadwaj, A. (2000). A Resource-based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation. *MIS Quarterly*, 24(1), 169–196.
- Bhaskar, R. (2008). *A Realist Theory of Science*. Routledge. <https://doi.org/10.2307/2184170>
- Bizzi, L., & Langley, A. (2012). Studying processes in and around networks. *Industrial Marketing Management*, 41(2), 224–234. <https://doi.org/10.1016/j.indmarman.2012.01.007>
- Boyle, R. (1997). Civil Service Reform in the Public of Ireland. *Public Money and Management*, 17(1), 49–53.
- Boyle, R. (2020). Hindsight, insight and foresight: Some reflections on reforming the public service. *Administration*, 68(4), 7–29.
- Boyne, G. A. (2002). Public and private management: what's the difference? *Journal of Management Studies*, 39(1), 97–122.
- Boyne, G. A., & Walker, R. M. (2004). Strategy Content and Public Service Organizations. *Journal of Product Innovation Management*, 14(2), 231–252. <https://doi.org/10.1093/jopart/muh015>
- Boynton, A. C., Zmud, R. W., & Jacobs, G. C. (1994). The influence of IT management practice on IT use in large organizations. *MIS Quarterly: Management Information Systems*, 18(3), 299–316. <https://doi.org/10.2307/249620>
- Broadbent, M., & Weill, P. (1993). Improving business and information strategy alignment: Learning from the banking industry. *IBM Systems Journal*, 32(1), 162–179. <https://doi.org/10.1147/sj.321.0162>
- Brown, C. V. (1999). Horizontal Mechanisms under Differing IS Organization Contexts. *MIS Quarterly*, 23(3), 421–454. <https://doi.org/10.2307/249470>
- Buchanan, D., & Dawson, P. (2007). Discourse and audience: Organizational change as multi-story process. *Journal of Management Studies*, 44(5), 669–686. <https://doi.org/10.1111/j.1467-6486.2006.00669.x>
- Buchwald, A., Urbach, N., & Ahlemann, F. (2014). Business Value through Controlled IT: toward an integrated model of IT governance success and its impact. *Journal of Information Technology*, 29(2), 128–147. <https://doi.org/10.1057/jit.2014.3>
- Burgelman, R. A. (1983). A Model of the Interaction of Strategic Behavior, Corporate Context, and the Concept of Strategy. *The Academy of Management Review*, 8(1), 61–70. <https://doi.org/10.2307/257168>

- Burgelman, R. A. (1991). Intraorganizational Ecology of Strategy Making and Organizational Adaptation : Theory and Field Research. *Organization Science*, 2(3), 239–262.
- Burgelman, R. A. (1996). A Process Model of Strategic Business Exit: Implications for an Evolutionary Perspective on Strategy. *Strategic Management Journal*, 17(Special Issue: Evolutionary Perspectives on Strategy), 193–214.
- Burgelman, R. A. (2002). Strategy as Vector and the Inertia of Coevolutionary Lock-in. *Administrative Science Quarterly*, 47(2), 325–357.
- Burn, J. M. (1993). Information systems strategies and the management of organizational change - a strategic alignment model. In *Journal of Information Technology* (Vol. 8, Issue 4, p. 205). <https://doi.org/10.1057/jit.1993.32>
- Burn, J. M. (1996). IS innovation and organizational alignment – a professional juggling act *Journal of Information Technology*. *Journal of Information Technology*, 11, 3–12.
- Burn, J. M., & Szeto, C. (2000). A comparison of the views of business and IT management on success factors for strategic alignment. *Information & Management*, 37(4), 197–216. [https://doi.org/10.1016/S0378-7206\(99\)00048-8](https://doi.org/10.1016/S0378-7206(99)00048-8)
- Burnes, B. (2004). Kurt Lewin and the Planned Approach to Change: A Re -Appraisal. *Journal of Management Studies*, 41 (6), 977–1002.
- Burns, T., & Stalker, G. M. (1961). *The Management of Innovation*. Tavistock Publications.
- By, R. T. (2005). Organisational change management: A critical review. *Journal of Change Management*, 5(4), 369–380. <https://doi.org/10.1080/14697010500359250>
- Bygstad, B., & Munkvold, B. E. (2011). Exploring the role of informants in interpretive case study research in IS. *Journal of Information Technology*, 26(1), 32–45. https://doi.org/10.1007/978-3-319-29269-4_4
- Bygstad, B., Munkvold, B. E., & Volkoff, O. (2016). Identifying generative mechanisms through affordances: a framework for critical realist data analysis. *Journal of Information Technology*, 31(1), 83–96. <https://doi.org/10.1057/jit.2015.13>
- Calhoun, K. J., & Lederer, A. L. (1990). From Strategic Plan to Strategic Practice : The Communications Connection. *American Journal of Business*, 5(2), 60–63.
- Carr, N. (2003). IT doesn't matter. *Harvard Business Review*, 81(5), 41.
- Carroll, J. M., & Swatman, P. A. (2000). Structured-Case: A Methodological Framework for Building Theory in Information Systems Research. *European Journal of Information Systems*, 9(4), 235–242. [file:///D:/Papers/carroll & Swatman \(2000\).pdf](file:///D:/Papers/carroll%20&%20Swatman%20(2000).pdf)
- Carter, N., Bryant-lukosius, D., Dicenso, A., & Blythe, J. (2014). The Use of Triangulation in Qualitative Research. *Methods & Meanings*, 41(5), 545–547. <https://doi.org/10.1188/14.ONF.545-547>
- Chan, E., & Huff, S. L. (1992). Strategy: an information perspective systems research. *Journal of Strategic Information Systems*, 1(4), 191–204.
- Chan, Y. E. (2002). Why Haven't We Mastered Alignment? The Importance of the informal organization structure. *MIS Quarterly Executive*, 1(2), 97–112.
- Chan, Y. E., Huff, S. L., & Copeland, D. G. (1998). Assessing realized information systems strategy. *The Journal of Strategic Information Systems*, 6(4), 273–298. [https://doi.org/10.1016/S0963-8687\(97\)00005-X](https://doi.org/10.1016/S0963-8687(97)00005-X)
- Chandler, A. (1962). *Strategy and Structure: chapters in the history of the industrial enterprise*. The M.I.T Press. [Accessed via:

https://archive.org/stream/strategystur00chan_0#page/n5/mode/2up

- Charlemagne - How Ireland Gets Its Way. (2020). *The Economist*. www.economist.com
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. Sage Publications.
- Chen, D. Q., Mocker, M., Preston, D. S., & Teubner, A. (2010). Information Systems Strategy: Reconceptualization, Measurement, and Implications. *MIS Quarterly*, 34(2), 233–259. <https://doi.org/Article>
- Chen, R. S., Sun, C. M., Helms, M. M., & Jih, W. J. (2008). Aligning information technology and business strategy with a dynamic capabilities perspective: A longitudinal study of a Taiwanese Semiconductor Company. *International Journal of Information Management*, 28(5), 366–378. <https://doi.org/10.1016/j.ijinfomgt.2008.01.015>
- Chen, W., & Hirschheim, R. (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001. *Information Systems Journal*, 14(3), 197–235. <https://doi.org/10.1111/j.1365-2575.2004.00173.x>
- Chia, R. (1999). A 'Rhizomic' Model of Organizational Change and Transformation : Perspective from a Metaphysics of Change. *British Journal of Management*, 10, 209–227.
- Chia, R., & King, I. W. (1998). The Organizational Structuring of Novelty. *Organization*, 5(4), 461–478. <https://doi.org/10.1177/135050849854002>
- Child, J. (1972). Organizational Structure, Environment and Performance: The Role of Strategic Choice. *Sociology*, 6(1), 1–22. <https://doi.org/10.1177/003803857200600101>
- Chong, A. Y., Hom, H., Kong, H., Chan, F. T. S., & Darmawan, N. (2011). Does employee alignment affect business-IT alignment? *Journal of Computer Information Systems*, 10–20.
- Ciborra, C. U. (1998). Strategic Information Systems Viewpoint Crisis and foundations : an inquiry into the nature and limits of models and methods in the information systems discipline. *Journal of Strategic Information Systems*, 7, 5–16.
- Cock, C. De, & Sharp, R. J. (2007). Process theory and research : Exploring the dialectic tension. *Scandinavian Journal of Management*, 23, 233–250. <https://doi.org/10.1016/j.scaman.2006.05.003>
- Cohen, L. J. (1978). The Coherence Theory of Truth. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, 34(4), 351–360.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity : A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128–152.
- Coltman, T., Tallon, P., Sharma, R., & Queiroz, M. (2015). Strategic IT alignment: Twenty-five years on. *Journal of Information Technology*, 30(2), 91–100. <https://doi.org/10.1057/jit.2014.35>
- Costa, P. L., Graça, A. M., Marques-Quinteiro, P., Santos, C. M., Caetano, A., & Passos, A. M. (2013). Multilevel research in the field of organizational behavior: An empirical look at 10 years of theory and research. *SAGE Open*, 3(3), 1–17. <https://doi.org/10.1177/2158244013498244>
- Costello, G., & Donnellan, B. (2011). Dialogical Action Research as Engaged Scholarship: An Empirical Study. *Thirty Second International Conference on Information Systems*, 1–17.
- Danermark, B., Ekstrom, M., Jakobsen, L., & Karlsson, J. C. (2002). *Explaining Society: Critical Realism in the Social Sciences*. Routledge.
- David, M. (2016). The Correspondence Theory of Truth. In *Stanford Encyclopedia of Philosophy* (pp. 1–64).

- Dawson, P. (1994). Organizational Change: A Processual Approach. In *Organization Studies* (Vol. 18).
- DeRose, K. (1992). Contextualism and Knowledge Attributions. *International Phenomenological Society*, 52(4), 913–929.
- Devlin, L. (1966). *Report of Public Services Organisation Review Group (1966 - 1969): Part 1 (named, the Devlin Report)*.
- Dobusch, L., & Kapeller, J. (2012). *Striking New Paths: Theory and Method in Path Dependency Research*.
- Doherty, N. ., Marples, C. ., & Suhaimi, A. (1999). The relative success of alternative approaches to strategic information systems planning: an empirical analysis. *The Journal of Strategic Information Systems*, 8(3), 263–283. [https://doi.org/10.1016/S0963-8687\(99\)00024-4](https://doi.org/10.1016/S0963-8687(99)00024-4)
- Donagan, A. (1964). Historical Explanation: The Popper-Hempel Theory Reconsidered. *History and Theory*, 4(1), 3–26.
- Donaldson, L. (2001). *The Contingency Theory of Organizations*. Sage Publications.
- Donaldson, L. (2006). The Contingency Theory of Organizational Design: Challenges and Opportunities. In *Organizational Design - The Evolving State-of-the-Art* (1st ed., pp. 19–40). Springer.
- Downward, P., Finch, J. H., & Ramsay, J. (2002). Critical realism, empirical methods and inference: a critical discussion. *Cambridge Journal of Economics*, 26(4), 481–500. <https://doi.org/10.1093/cje/26.4.481>
- Drazin, R., & Van de Ven, A. H. (1985). Alternative Forms of Fit in Contingency Theory. *Administrative Science Quarterly*, 30(4), 514. <https://doi.org/10.2307/2392695>
- Dubin, R. (1978). *Theory building*. Free Press.
- Durand, R., & Vaara, E. (2009). Causation, Counterfactuals, and Competitive Advantage. *Strategic Management Journal*, 30, 1245–1264. <https://doi.org/10.1002/smj>
- Dutta, S. (1996). Linking IT and business strategy: The role and responsibility of senior management. *European Management Journal*, 14(3), 255–268. [https://doi.org/10.1016/0263-2373\(96\)00005-9](https://doi.org/10.1016/0263-2373(96)00005-9)
- Dyer, G. W., & Wilkins, A. L. (1991). Better Stories, Not Better Constructs, to Generate Better Theory: A Rejoinder to Eisenhardt. *Academy of Management Review*, 16(3), 613–619.
- Earl, M., & Feeny, D. (2000). How To Be a CEO for the Information Age. *Sloan Management Review*, 41(2), 11–23. <http://ezproxy.csu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=2717147&site=ehost-live>
- Earl, M. J. (1989). *Management Strategies for Information Technology*. Prentice-Hall, Inc.
- Earl, M. J. (1993). Experiences in strategic information systems planning. *MIS Quarterly*, 17(1), 1–24. <https://doi.org/10.2307/249507>
- Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118–128. <https://doi.org/10.1016/j.indmarman.2008.06.004>
- Edwards, B. A. (2000). Chief Executive Officer Behaviour: The catalyst for strategic alignment. *International Journal of Value-Based Management*, 13(1), 47–54.
- Ein-dor, P., & Segev, E. (1978). Organizational Context and the Success of Management Information Systems. *Management Science*, 24(10), 1064–1077.

- Ein-dor, P., & Segev, E. (1982). *Organizational Context and MIS Structure : Some Empirical Evidence*. 6(3), 55–68.
- Eisenhardt, K. M. (1989). Building Theories from Case Study. *Academy of Management Review*, 14(4), 532–550.
- Fahey, L., & Christensen, H. K. (1986). Evaluating the Research on Strategy Content. *Journal of Management*, 12(2), 167–183. <https://doi.org/10.1177/014920638601200203>
- Farjoun, M. (2002). TOWARDS AN ORGANIC PERSPECTIVE ON STRATEGY. *Strategic Management Journal*, 23, 561–594. <https://doi.org/10.1002/smj.239>
- Fedorowicz, J., Gelinas, U. J., Gogan, J. L., & Williams, C. B. (2009). Strategic alignment of participant motivations in e-government collaborations: The Internet Payment Platform pilot. *Government Information Quarterly*, 26(1), 51–59. <https://doi.org/10.1016/j.giq.2008.03.004>
- Feeny, D. F., Edwards, B. R., & Simpson, K. M. (1992). Understanding the CEO/CIO Relationship. *MIS Quarterly*, 16(4), 435–448.
- Ferlie, E., & Ongaro, E. (2015). *Strategic management in public services organizations: Concepts, schools and contemporary issues*. Routledge.
- Fichman, R. G. (2004). Real options and IT platform adoption: Implications for theory and practice. *Information Systems Research*, 15(2). <https://doi.org/10.1287/isre.1040.0021>
- Fink, L., & Neumann, S. (2009). Exploring the perceived business value of the flexibility enabled by information technology infrastructure. *Information and Management*, 46(2), 90–99. <https://doi.org/10.1016/j.im.2008.11.007>
- Fleetwood, S. (2009). The Ontology of Things, Properties and Powers. *Journal of Critical Realism*, 8(3), 343–366. <https://doi.org/10.1558/jocr.v8i3.343>
- Fletcher, A. J. (2017). Applying critical realism in qualitative research : methodology meets method. *International Journal of Social Research Methodology*, 20(2), 181–194.
- Fombrun, C. J., & Astley, W. G. (1983). Beyond Corporate Strategy. *Journal of Business Strategy*, 31983(2), 47–54.
- Fry, L. W., & Smith, D. A. (1987). Congruence , Contingency , and Theory Building. *Academy of Management Review*, 12(1), 117–132.
- Galbraith, J. R. (1974). Organization Design: An Information Processing View. *Interfaces*, 4(3), 28–36.
- Garud, R., Tuertscher, P., & Van de Ven, A. H. (2013). Perspectives on Innovation Processes. *Academy of Management Annals*, 7(1), 775–819. <https://doi.org/10.5465/19416520.2013.791066>
- Gerow, J. E., Grover, V., & Thatcher, J. (2016). Alignment’s nomological network: Theory and evaluation. *Information and Management*, 53(5), 541–553. <https://doi.org/10.1016/j.im.2015.12.006>
- Gerow, J. E., Thatcher, J. B., & Grover, V. (2015). Six types of IT-business strategic alignment: an investigation of the constructs and their measurement. *European Journal of Information Systems*, 24(5), 465–491. <https://doi.org/10.1057/ejis.2014.6>
- Ghosh, B., & Scott, J. E. (2009). Relational Alignment in Offshore IS Outsourcing. *MIS Quarterly Executive*, 8(1), 19–29.
- Giddens, A. (1984). *The Constitution of Society*. Polity Press.
- Ginsberg, A., & Venkatraman, N. (1985). Contingency Perspectives of Organizational Strategy : A Critical Review of the Empirical Research University of Pittsburgh. *Academy of Management*

Review, 10(3), 421–434.

- Glaser, B. (1978). *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. Sociology Press.
- Greenwood, R. & Hinings, C. R. (1996). *Understanding radical organizational change: Bringing together the old and the new institutionalism*. *Academy of Management Review*, 21(4), 1022–1054.
- Gresov, C., & Drazin, R. (1997). Equifinality: Functional Equivalence in Organization Design. *Academy of Management Review*, 22(2), 403–428.
- Grover, V., & Segars, A. H. (2005). An empirical evaluation of stages of strategic information systems planning: Patterns of process design and effectiveness. *Information and Management*, 42(5), 761–779. <https://doi.org/10.1016/j.im.2004.08.002>
- Guba, E.G., & Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In *Handbook of Qualitative Research* (pp. 105–117). Sage Publications.
- Guba, Egon G. (1990). The Alternative Paradigm Dialog. In *The paradigm dialog* (pp. 17–27). <https://doi.org/10.1080/1357527032000140352>
- Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Gutierrez, A., Orozco, J., & Serrano, A. (2009). Factors affecting IT and business alignment: a comparative study in SMEs and large organisations. *Journal of Enterprise Information Management*, 22(1/2), 197–211. <https://doi.org/10.1108/17410390910932830>
- Hafsi, T., & Thomas, H. (2005). The Field of Strategy:: In Search of a Walking Stick. *European Management Journal*, 23(5), 507–519. <https://doi.org/https://doi.org/10.1016/j.emj.2005.09.006>
- Hambrick, D. C. ., Cho, T. S., & Chen, M.-J. (1996). The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves. *Administrative Science Quarterly*, 41(4), 659–684.
- Hannan, M. T., & Freeman, J. (1977). The Population Ecology of Organizations. *American Journal of Sociology*, 82(5), 929–964.
- Hannan, M. T., & Freeman, J. (1984). Structural Inertia and Organizational Change. *American Sociological Review*, 49(2), 149–164.
- Hannan, M. T., Pólos, L., & Carroll, G. R. (2002). *Structural Inertia and Organizational Change Revisited III: The Evolution of Organizational Inertia*. 1734, 29.
- Hau, Y. S., Kim, B., Lee, H., & Kim, Y. G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33(2), 356–366. <https://doi.org/10.1016/j.ijinfomgt.2012.10.009>
- Heirich, M. (1964). The Use of Time in the Study of Social Change. *American Sociological Review*, 29(3), 386–397.
- Henderson, J. C., & Venkatraman, H. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, 32(1), 472–484. <https://doi.org/10.1147/sj.382.0472>
- Henderson, John C., & Sifonis, J. G. (1988). The Value of Strategic IS Planning: Understanding Consistency, Validity, and IS Markets. *MIS Quarterly*, 12(2), 187. <https://doi.org/10.2307/248843>

- Hernes, T. (2014). *A Process Theory of Organizations*. Oxford University Press.
- Hernes, T., & Bakken, T. (2003). Implications of Self-Reference : Niklas Luhmann ' s Autopoiesis and Organization Theory. *Organization Studies*, 24(9), 1511–1535.
- Heroux, S., & Fortin, A. (2018). The moderating role of IT-business alignment in the relationship between IT governance, IT competence, and innovation AU - Héroux, Sylvie. *Information Systems Management*, 35(2), 98–123. <https://doi.org/10.1080/10580530.2018.1440729>
- Hitt, L. M., & Brynjolfsson, E. (1996). Business Profitability , Different Measures of Information Surplus : Three Different Measures of Information Technology Value. *MIS Quarterly*, 20(2), 121–142.
- Hitt, M. A., Ireland, R. D., & Palia, K. A. (1982). Industrial Firms' Grand Strategy and Functional Importance: Moderating Effects of Technology and Uncertainty. *Academy of Management Journal*, 25(2), 265–298. <https://doi.org/10.2307/255990>
- Hoddy, E. T. (2019). Critical realism in empirical research : employing techniques from grounded theory methodology grounded theory methodology. *International Journal of Social Research Methodology*, 22(1), 111–124. <https://doi.org/10.1080/13645579.2018.1503400>
- Höglund, L., Holmgren Caicedo, M., Mårtensson, M., & Svärdsten, F. (2018). Strategic Management in the Public Sector: How Tools Enable and Constrain Strategy Making. *International Public Management Journal*, 21(5), 822–849. <https://doi.org/10.1080/10967494.2018.1427161>
- Hood, C. (1991). *A Public Management for all seasons?* *Public Administration*, 69(1), 3–19.
- Horovitz, J. (1984). New perspectives on strategic management. *Journal of Business Strategy*, 4(3), 19–33. <https://doi.org/10.1108/eb039029>
- Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. (1999). Theory and research in strategic management: swings of a pendulum. *Journal of Management*, 25(3), 417–456. <https://doi.org/10.1177/014920639902500307>
- Hrebiniak, L. G. (1981). The organization and environment research program: Overview and Critique. In *Perspectives on organization design and behavior* (pp. 338–345). Wiley-Interscience.
- Hrebiniak, L. G., & Joyce, W. F. (1985). Organizational Adaptation : Strategic Choice and Environmental Determinism. *Administrative Science Quarterly*, 30(3), 336–349.
- Hu, Q., & Huang, C. D. (2006). *Using the Balanced Scorecard to Achieve Sustained IT-Business Alignment : A Case Study*. 17(February). <https://doi.org/10.17705/1CAIS.01708>
- Huang, C. D., & Hu, Q. (2007). Achieving IT-business strategic alignment via enterprise-wide implementation of balanced scorecards. *Information Systems Management*, 24(2), 173–184. <https://doi.org/10.1080/10580530701239314>
- Huang, R., Zmud, R. W., & Price, R. L. (2010). Influencing the effectiveness of IT governance practices through steering committees and communication policies. *European Journal of Information Systems*, 19(3), 288–302. <https://doi.org/10.1057/ejis.2010.16>
- Huff, A. S., & Reger, R. K. (1987). A Review of Strategic Process Research. *Journal of Management*, 13(2), 211–236.
- Hutzschenreuter, T., & Kleindienst, I. (2006). Strategy-process research: What have we learned and what is still to be explored. *Journal of Management*, 32(5), 673–720. <https://doi.org/10.1177/0149206306291485>
- Irvine, A., Drew, P., & Sainsbury, R. (2012). “Am I not answering your questions properly?” Clarification, adequacy and responsiveness in semi-structured telephone and face-to-face

- interviews. *Qualitative Research*, 13(1), 87–106. <https://doi.org/10.1177/1468794112439086>
- Ives, B., & Learmonth, G. P. (1984). The information system as a competitive weapon. In *Communications of the ACM* (Vol. 27, Issue 12, pp. 1193–1201). <https://doi.org/10.1145/2135.2137>
- Jackson, I. F. (1989). Information systems planning and alignment: A progress assessment. *Journal of Information Technology*, 4(4), 216–229. <https://doi.org/10.1057/jit.1989.36>
- Jarvenpaa, S. L., & Ives, B. (1990). Information Technology and Corporate Strategy : A View from the Top Stable URL : <http://www.jstor.org/stable/23010663> and Corporate Strategy : *Information Systems Research*, 1(4), 351–376.
- Jennifer E. Gerow, Varun Grover, Jason Thatcher, and P. L. R. (2014). Looking Toward the Future of IT-Business Strategic Alignment through the Past: A Meta-Analysis. *MIS Quarterly*, 38(4), 1059–1085. <http://misq.org/looking-toward-the-future-of-it-business-strategic-alignment-through-the-past-a-meta-analysis.html>
- Jick, T. D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24(4), 602. <https://doi.org/10.2307/2392366>
- Johnson, A. M., & Lederer, A. L. (2006). The Impact of Communication between CEOs and CIOs on their Shared Views of the Current and Future Role of IT. *Information Systems Management*, 24(903467338), 85–90. <https://doi.org/10.1080/10580530601038246>
- Johnson, R. A., Kast, F. E., & Rosenzweig, J. E. (1964). Systems Theory and Management. *Management Science*, 10(2), 367–384. <https://doi.org/10.2307/2627306>
- Johnston, H. R., & Carrico, S. R. (1988). Developing Capabilities to Use Information Strategically. *MIS Quarterly*, 12(1), 37. <https://doi.org/10.2307/248801>
- Jurisch, M. C., Ikas, C., Wolf, P., & Krcmar, H. (2013). Key Differences of Private and Public Sector Business Process Change. *E-Service Journal*, 9(1), 3–27.
- Kappelman, L., Maurer, C., Mclean, E. R., Kim, K., Johnson, V. L., Guerra, K., Torres, R., & Snyder, M. (2021). The 2020 SIM IT Issues and Trends Study. *MIS Quarterly Executive*, 20(1), 69–107.
- Karahanna, E., Preston, D. S. (2013). *The Effect of Social Capital of the Relationship Between the CIO and Top Management Team on Firm Performance..* *Journal of Management Information Systems*, 30(1), 15-56. <https://doi.org/10.2753/MIS0742-1222300101>
- Karimi, J., Bhattacharjee, A., Gupta, Y. P., & Somers, T. M. (2000). The effects of MIS steering committees on information technology management sophistication. *Journal of Management Information Systems*, 17(2), 207–230. <https://doi.org/10.1080/07421222.2000.11045641>
- Kearns, G.S., & Lederer, A. . (2000). The effect of strategic alignment on the use of IS-based resources for competitive advantage. *The Journal of Strategic Information Systems*, 9(4), 265–293. [https://doi.org/10.1016/S0963-8687\(00\)00049-4](https://doi.org/10.1016/S0963-8687(00)00049-4)
- Kearns, Grover S. (2006). The effect of top management support of SISP on strategic IS management: Insights from the US electric power industry. *Omega*, 34(3), 236–253. <https://doi.org/10.1016/j.omega.2004.10.008>
- Kearns, Grover S., & Lederer, A. L. (2003). A resource-based view of strategic IT alignment: How knowledge sharing creates competitive advantage. *Decision Sciences*, 34(1), 1–29. <https://doi.org/10.1111/1540-5915.02289>
- Kearns, Grover S., & Sabherwal, R. (2007). Strategic Alignment Between Business and Information Technology: A Knowledge-Based View of Behaviors, Outcome, and Consequences. *Journal of Management Information Systems*, 23(3), 129–162. <https://doi.org/10.2753/MIS0742->

- Kekes, J. (1994). The Pragmatic Idealism of Nicolas Rescher. *Philosophy and Phenomenological Research*, 54(2), 391–394.
- Kelly, D., & Amburgey, T. L. (1991). Organizational Inertia and Momentum : A Dynamic Model of Strategic Change. *The Academy of Management Journal*, 34(3), 591–612.
- Kim, K. K., & Michelman, J. E. (1990). An examination of factors for the strategic use of information systems in the healthcare industry. *MIS Quarterly: Management Information Systems*, 14(2), 201–214. <https://doi.org/10.2307/248778>
- King, W. R. (1978). Strategic Planning for Management Information Systems. *Management Science*, 2(1), 27–32.
- Knight, E. (2015). Book Review: A Process Theory of Organizations. *Organization Studies*, 36(10), 1423–1426. <https://doi.org/10.1177/0170840615588740>
- Krotov, V. (2015). Bridging the CIO-CEO gap : It takes two to tango. *Business Horizons*, 58(3), 275–283. <https://doi.org/10.1016/j.bushor.2015.01.001>
- Kude, T., Lazic, M., Heinzl, A., & Neff, A. (2018). Achieving IT-based synergies through regulation-oriented and consensus-oriented IT governance capabilities. *Information Systems Journal*, 28(5), 765–795. <https://doi.org/10.1111/isj.12159>
- Lachman, R. (1985). Public and Private Sector Differences : CEOs ' Perceptions of Their Role Environments. *The Academy of Management Journal*, 28(3), 671–680.
- Langley, A. (1999). Strategies for Theorizing from Process Data. *The Academy of Management Review*, 24(4), 691–710.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differetiation and Integration in Large Complex Organizations.pdf. *Administrative Science Quarterly*, 12(1), 1–47.
- Lederer, A. L., & Mendelow, A. L. (1987). Information Resource Planning : Overcoming Difficulties in Identifying Top Management's Objectives. *MIS Quarterly*, 11(3), 389–399.
- Lederer, A. L., & Mendelow, A. L. (1989). Coordination of information systems plans with business plans. *Journal of Management Information Systems*, 6(2), 17–18. <https://doi.org/10.1080/07421222.1989.11517854>
- Lederer, A. L., & Salmela, H. (1996). Toward a theory of strategic information systems planning. *The Journal of Strategic Information Systems*, 5(3), 237–253. [https://doi.org/10.1016/S0963-8687\(96\)80005-9](https://doi.org/10.1016/S0963-8687(96)80005-9)
- Lee, A. S. (1989). A Scientific Methodology for MIS Case Studies. *MIS Quarterly*, March, 33–50.
- Lee, S. M., Tan, X., & Trimi, S. (2005). Current Practices of Leading E-Government Countries. *Communications of the ACM*, 48(10), 99–104.
- Leonard-Barton, D. (1990). A Dual Methodology for Case Studies: Synergistic Use of a Longitudinal Single Site with Replicated Multiple Sites. *Organization Science*, 1(3), 248–266. <https://doi.org/10.1287/orsc.1.3.248>
- Levallet, N., & Chan, Y. E. (2018). Role of Digital Capabilities in Unleashing the Power of Managerial Improvisation. *MIS Quarterly Executive*, 17(1), 1–21.
- Lewin, A. Y., & Volberda, H. W. (1999). Prolegomena on Coevolution: A Framework for Research on Strategy and New Organizational Forms. *Organization Science*, 10(5), 519–534. <https://doi.org/10.1287/orsc.10.5.519>

- Liang, H., Wang, N., Xue, Y., & Ge, S. (2017). Unraveling the Alignment Paradox : How Does Business — IT Alignment Shape Organizational Agility? *Information Systems Research*, 28(4), 863–879.
- Liedtka, J. M., & Rosenblum, J. W. (1996). Shaping Conversations: Making Strategy, Managing Change. *California Management Review*, 39(1), 141–157.
- Lin, N. (1999). Building a Network Theory of Social Capital. *Connections*, 22(1), 28–51.
- Llewellyn, S., & Tappin, E. (2003). Strategy in the Public Sector : Management in the Wilderness. *Journal of Management Studies*, 40(4), 955–982.
- Luftman, J. (2000). Assessing Business-IT Alignment Maturity. *Communications of the AIS*, 4(14), 1–51.
- Luftman, J., & Ben-Zvi, T. (2010). Key Issues for IT Executives 2009: Difficult Economy's Impact on IT. *MIS Quarterly Executive*, 9(1), 49–59. <https://doi.org/10.1108/02635570910926564>
- Luftman, J., & Brier, T. (1999). Achieving and sustaining business-IT alignment. *California Management Review*, 42(1), 109–122. <https://doi.org/10.2307/41166021>
- Luftman, J., Kempaiah, R., & Nash, E. (2006). Key issues for IT executives. *MIS Quarterly Executive*, 5(2), 81–99. <https://doi.org/10.1109/HICSS.2008.37>
- Luftman, J., & McLean, E. R. (2004). Key issues for IT executives. *MIS Quarterly Executive*, 3(2), 89–104.
- Macfarlane, J. (2014). *Assessment Sensitivity: Relative Truth and its Applications*. Clarendon Press.
- Maitlis, S., & Christianson, M. (2014). Sensemaking in Organizations: Taking Stock and Moving Forward. *Academy of Management Annals*, 8(1), 57–125. <https://doi.org/10.1080/19416520.2014.873177>
- March Simon, Herbert A., J. G. (1958). *Organizations*. John Wiley & Sons.
- March, J. G., & Olson, J. P. (1975). The Uncertainty of the Past: Organizational Learning under Ambiguity. *European Journal of Political Research*, 3(2), 147–171. <https://doi.org/https://doi.org/10.1111/j.1475-6765.1975.tb00521.x>
- Markus, M. L., & Robey, D. (1988). Information Technology and Organizational Change: Causal Structure in Theory and Research. *Management Science*, 34(5), 583–599.
- Markus, M. L., & Rowe, F. (2018). Is IT Changing the World? Conceptions of Causality for Information Systems Theorizing. *MIS Quarterly*, 42(4), 1255–1280. <https://doi.org/10.25300/MISQ/2018/12903>
- Mårtensson, P., & Lee, A. S. (2004). Dialogical Action Research at Omega Corporation. *MIS Quarterly*, 28(3), 507–536.
- Mason, R. O., & Mitroff, I. I. (1973). A Program for Research on Management Information Systems. *Management Science*, 19(5), 475–487. <https://doi.org/10.1287/mnsc.19.5.475>
- McDermott, D., & Doyle, J. (1980). Non-Monotonic Logic I. *Artificial Intelligence*, 13(1980), 41–72.
- McFarlane, F. W. (1984). Information technology changes the way you compete. *Harvard Business Review*, 62(3), 98–103. <https://doi.org/Article>
- Mentzas, G. (1997). Implementing an IS strategy—A team approach. *Long Range Planning*, 30(1), 84–95. [https://doi.org/10.1016/S0024-6301\(96\)00099-4](https://doi.org/10.1016/S0024-6301(96)00099-4)
- Merali, Y., Papadopoulos, T., & Nadkarni, T. (2012). Information Systems Strategy: Past, Present, Future? *Journal of Strategic Information Systems*, 21(1), 125–153

- Miles, R. E., & Snow, C. C. (1978). *Organizational Strategy, Structure and Process*. McGraw-Hill.
- Miller, D. (1993). The Architecture of Simplicity. *The Academy of Management Review*, 18(1), 116–138.
- Miller, J. G. (1978). *Living systems*. McGraw-Hill.
- Miller, K. D., & Tsang, E. W. K. (2011). Testing management theories: Critical realist philosophy and research methods. *Strategic Management Journal*, 32(2), 139–158.
<https://doi.org/10.1002/smj.868>
- Mingers, J. (2004). Paradigm wars: Ceasefire announced who will set up the new administration? *Journal of Information Technology*, 19(3), 165–171.
<https://doi.org/10.1057/palgrave.jit.2000021>
- Mingers, John. (2001). Combining IS Research Methods: Towards a Pluralistics Method. *Information Systems Research*, 12(3), 240–259.
- Mingers, John. (2003). *Review of the Information Systems Literature*. 233–249.
- Mingers, John. (2006). Chapter 2: Philosophical Foundations: Critical Realism. In *Realising Systems Thinking: Knowledge and Action in Management Science*.
- Mingers, John. (2002). Real-izing Information Systems : Critical Realism as an Underpinning Philosophy for Information Systems. *23rd International Conference on Information Systems*, 295–303. <https://doi.org/10.1016/j.infoandorg.2003.06.001>
- Mingers, John, Mutch, A., & Willcocks, L. (2013). Critical Realism in Information Systems Research. *MIS Quarterly*, 37(3 (Special Issue)), 795–802.
- Mingers, John, & Standing, C. (2017). Why things happen – Developing the critical realist view of causal mechanisms. *Information and Organization*, 27(3), 171–189.
<https://doi.org/10.1016/j.infoandorg.2017.07.001>
- Ministers and Secretaries Act, 1924*. (n.d.). Retrieved May 23, 2022, from <https://www.irishstatutebook.ie/eli/1924/act/16/enacted/en/html>
- Mintzberg, H. (1978). Patterns in Strategy Formation. *Management Science*, 24(9), 934–948.
<https://doi.org/10.1287/mnsc.24.9.934>
- Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*. Free Press.
- Mintzberg, H., Ahlstrand, B. W., & Lampel, J. (1998). *Strategy Safari: A guided tour through the wilds of strategic management*. Free Press.
- Mintzberg, H., & McHugh, A. (1985). Strategy Formation in an Adhocracy. *Administrative Science Quarterly*, 30(2), 160–197.
- Mintzberg, H., & Waters, J. A. (1985). Of Strategies, Deliberate and Emergent. *Strategic Management Journal*, 6(3), 257–272.
- Mintzberg, H., & Westley, F. (1992). Cycles of Organizational Change. *Strategic Management Journal*, 13(1), 39–59.
- Mjøset, L. (2009). The Contextualist Approach to Social Science Methodology. In *The SAGE Handbook of Case-Based Methods* (pp. 39–68). Sage Publications.
- Moon, Y. J., Choi, M., & Armstrong, D. J. (2018). The impact of relational leadership and social alignment on information security system effectiveness in Korean governmental organizations. *International Journal of Information Management*, 40(December 2017), 54–66.
<https://doi.org/10.1016/j.ijinfomgt.2018.01.001>

- Morgan, G., & Smircich, L. (1980). The Case for Qualitative Research. *Academy of Management Review*, 5(4), 491–500. <https://doi.org/10.2307/257453>
- Morris, E. K. (1997). SOME REFLECTIONS ON CONTEXTUALISM, MECHANISM, AND BEHAVIOR ANALYSIS. *The Psychological Record*, 47, 529–542.
- Mueller, J., & Kunisch, S. (2018). Central Perspective and Debates in Strategic Change Research. *International Journal of Management Reviews*, 20, 457–482. <https://doi.org/10.1111/ijmr.12141>
- Mulhall, A. (2003). In the field: notes on observation in qualitative research. *Methodological Issues in Nursing Research*, 41(3), 306–313.
- Murray, J. A. (2001). *Reflections on SMI*.
- Nadler, D. A., & Tushman, M. L. (1980). A model for diagnosing organizational-behavior. *Organizational Dynamics*, 9(2), 35–51. [https://doi.org/10.1016/0090-2616\(80\)90039-x](https://doi.org/10.1016/0090-2616(80)90039-x)
- Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *The Academy of Management Review*, 23(2), 242–266.
- Nelson, K. M., & Coopride, J. G. (1996). The Contribution of Shared Knowledge to IS Group Performance. *MIS Quarterly*, 20(4), 409. <https://doi.org/10.2307/249562>
- Newkirk, H. E., Lederer, A. L., & Johnson, A. M. (2008). Rapid business and IT change: Drivers for strategic information systems planning? *European Journal of Information Systems*, 17(3), 198–218. <https://doi.org/10.1057/ejis.2008.16>
- Niederman, F., Brancheau, J. C., & Wetherbe, J. C. (1991). Information systems management issues for the 1990s. *MIS Quarterly: Management Information Systems*, 15(4), 475–495. <https://doi.org/10.2307/249452>
- Nolan, R. L. (1982). Managing information systems by committee. *Harvard Business Review*, 60(4), 72–79.
- Nute, D. (1999). Norms, priorities, and defeasibility. In *Norms, Logics and Information Systems* (pp. 201–218). IOS Press.
- Oehlhorn, C. E., Maier, C., Laumer, S., & Weitzel, T. (2020). Human resource management and its impact on strategic business-IT alignment: A literature review and avenues for future research. *Journal of Strategic Information Systems*, 29(4), 101641. <https://doi.org/10.1016/j.jsis.2020.101641>
- Oh, H., Chung, M., & Labianca, G. (2004). Group Social Capital and Group Effectiveness: The Role of Informal Socializing Ties. *The Academy of Management Journal*, 47(6), 860–875.
- Oh, W., & Pinsonneault, A. (2007). On the Assessment of the Strategic Value of Information Technologies: Conceptual and Analytical Approaches. *MIS Quarterly*, 31(2), 239–265.
- Oliver, C. (2012). Critical Realist Grounded Theory : A New Approach for Social Work Research. *British Journal of Social Work*, 42, 371–387.
- Olsen, P. I. (2011). The Relevance and Applicability of Process Metaphysics to Organizational Research. *Philosophy of Management*, 10(2), 53–74.
- Online, R., & Dawson, P. M. (1997). In at the deep end: conducting processual research on organisational change. *Scandinavian Journal of Management*, 13(134), 389–405. [https://doi.org/10.1016/S0956-5221\(97\)00025-0](https://doi.org/10.1016/S0956-5221(97)00025-0)
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organisations: research approaches and assumptions. *Information Systems Research*, 2(1), 1–28.

- Orlikowski, Wanda J. (1996). Improvising Organizational Transformation over Time: A Situated Change Perspective. *Information Systems Research*, 7(1), 63–92. <https://doi.org/10.1287/isre.7.1.63>
- Osborne, S. P. (2006). The New Public Governance? *Public Management Review*, 8(3), 377–388. <https://doi.org/10.1080/14719030600853022>
- Our History - Department of Foreign Affairs*. (n.d.). Retrieved May 23, 2022, from <https://www.dfa.ie/irish-embassy/greece/our-role/about-ireland/our-history/>
- Pare, G., Bourdeau, S., Marsan, J., Nach, H., & Shuraïda, S. (2008). Re-examining the causal structure of information technology impact research. *European Journal of Information Systems*, 17, 403–416. <https://doi.org/10.1057/ejis.2008.34>
- Parsons, G. L. (1983). Information Technology: A New Competitive Weapon. *Sloan Management Review*, 25(1), 3.
- Parthasarathy, R., & Sethi, S. P. (1993). Relating Strategy and Structure to Flexible Automation : A Test of Fit and Performance Implications. *Strategic Management Journal*, 14(7), 529–549.
- Pascale, R. T. (1999). Surfing the Edge of Chaos. *Sloan Management Review*, 40(3), 83–94.
- Pavlou, P. A., & El Sawy, O. A. (2010). The “third hand”: IT-enabled competitive advantage in turbulence through improvisational capabilities. *Information Systems Research*, 21(3), 443–471. <https://doi.org/10.1287/isre.1100.0280>
- Peak, D. A., Guynes, C. S., Prybutok, V. R., & Xu, C. (2011). Aligning Information Technology with Business Strategy: An Action Research Approach. *Journal of Information Technology Case & Application Research*, 13(1), 16–42. <https://doi.org/10.1080/15228053.2011.10856200>
- Peppard, J. (2018). Rethinking the concept of the IS organization. *Information Systems Journal*, 28(1), 76–103. <https://doi.org/10.1111/isj.12122>
- Peppard, J., Galliers, R. D., & Thorogood, A. (2014). Information systems strategy as practice: Micro strategy and strategizing for IS. *Journal of Strategic Information Systems*, 23(1), 1–10. <https://doi.org/10.1016/j.jsis.2014.01.002>
- Perry, C. (1998). Processes of a case study methodology for postgraduate research in marketing. *European Journal of Marketing*, 32(9), 785–802.
- Perry, J. L., & Rainey, H. G. (1988). The Public-Private Distinction in Organization Theory : A Critique and Research Strategy. *The Academy of Management Review*, 13(2), 182–201.
- Pettigrew, A. M. (1985a). Contextualist research and the study of organizational change processes. *Research Methods in Information Systems*, 53–78.
- Pettigrew, A. M. (1985b). *Contextual Research: A Natural Way to Link Theory and Practice in E.E., Lawler (ed), Doing Research that is useful in Theory and Practice, Jossey Bass, Chapter 7*
- Pettigrew, A. M. (1987). Context and Action in the Transformation of the Firm. *Journal of Management Studies*, 24(6), 649–670.
- Pettigrew, A. M. (1990). Longitudinal field research on change: theory and practice. *Organization Science*, 1(3), 267–292. <https://doi.org/10.1287/orsc.1.3.267>
- Pettigrew, A. M. (1997). What is a processual analysis? *Scandinavian Journal of Management*, 13(4), 337–348. [https://doi.org/10.1016/S0956-5221\(97\)00020-1](https://doi.org/10.1016/S0956-5221(97)00020-1)
- Pinto, J. A. M. (2005). The Population Ecology Paradigm: Review And Critique. *Journal of Business & Economics Research* 2, 3(10), 1–8. <https://doi.org/10.19030/jber.v3i10.2812>

- Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal Research: The Theory, Design, and Analysis of Change. *Journal of Management*, 36(1), 94–120. <https://doi.org/10.1177/0149206309352110>
- Poister, T. H., Pitts, D. W., & Edwards, L. H. (2010). Strategic Management Research in the Public Sector : A Review , Synthesis , and Future Directions. *The American Review of Public Administration*, 40(5), 522–545. <https://doi.org/10.1177/0275074010370617>
- Poister, T. H., Streib, G. D., Productivity, S. P., Review, M., Mar, N., & Streib, G. D. (1999). Strategic Management in the Public Sector : Concepts , Models , and Processes Linked references are available on JSTOR for this article : STRATEGIC MANAGEMENT. *Public Productivity & Management Review*, 22(3), 308–325.
- Polkinghorne, D. E. (1988). *Narrative Knowing and the Human Sciences*. State University of New York Press.
- Porter, M. (1980). How competitive forces shape strategy. *The McKinsey Quarterly*, 5(January), 34–50. <https://doi.org/10.1080/07399018808962934>
- Porter, M. E. (2001). Strategy and the Internet. *Harvard Business Review*, March, 63.
- Powell, T. C. (1992). Organizational alignment as strategic advantage. *Strategic Management Journal*, 13, 119–134.
- Premkumar, G., & King, W. R. (1992). An empirical assessment of information systems planning and the role of information systems in organizations. *Journal of Management Information Systems*, 9(2), 99–125. <http://www.jstor.org/stable/10.2307/41432908>
- Preston, D., & Karahanna, E. (2005). The development of a shared CIO/executive management understanding and its impact on information systems strategic alignment. *Information Systems Control Journal*, 2.
- Preston, D., & Karahanna, E. (2009). How to develop a shared vision: The Key to IS Strategic Alignment. *MIS Quarterly Executive*, 8(1), 1–8.
- Preston, D. S., & Karahanna, E. (2009). Antecedents of IS strategic alignment: A nomological network. *Information Systems Research*, 20(2), 159–179. <https://doi.org/10.1287/isre.1070.0159>
- Rahimi, F., Møller, C., & Hvam, L. (2016). Business process management and IT management: The missing integration. *International Journal of Information Management*, 36(1), 142–154. <https://doi.org/10.1016/j.ijinfomgt.2015.10.004>
- Rainey, H. G., & Bozeman, B. (2000). Comparing Public and Private Organizations : Empirical Research and the Power of the A Priori. *Journal of Public Administration Research and Theory*, 10(2), 447–469. <https://doi.org/10.1093/oxfordjournals.jpart.a024276>
- Ranganathan, C., & Sethi, V. (2002). Rationality in strategic information technology decisions: The impact of shared domain knowledge and IT unit structure. *Decision Sciences*, 33(1), 59–86. <https://doi.org/10.1111/j.1540-5915.2002.tb01636.x>
- Rathnam, R. G., Johnsen, J., & Wen, H. . (2004). Alignment of business strategy and it strategy: A case study of a fortune 50 financial services comany. *Journal of Computer Information Systems*, 45(2), 1–8. <https://doi.org/Article>
- Raymond, L., Pare, G., & Bergeron, F. (1995). Matching information technology and organizational structure : an empirical study with implications for performance. *European Journal of Information Systems*, 4(3), 3–16.
- Reich, B. H., & Benbasat, I. (1996). Measuring the Linkage between Business and Information Technology Objectives. *MIS Quarterly*, 20(1), 55. <https://doi.org/10.2307/249542>

- Reimann, B. C. (1973). On the Dimensions of Bureaucratic Structure: An Empirical Reappraisal. *Admin*, 18(4), 462–476.
- Rescher, N. (1996). *Process Metaphysics: An Introduction to Process Philosophy*. State University of New York Press.
- Reynolds, P., & Yetton, P. (2015). Aligning business and IT strategies in multi-business organizations. *Journal of Information Technology*, 30(2), 101–118. <https://doi.org/10.1057/jit.2015.1>
- Ring, P. S., & Perry, J. L. (1985). Strategic Management in Public and Private Organizations : Implications of Distinctive Contexts and Constraints. *The Academy of Management Review*, 10(2), 279–286.
- Rosenberg Hansen, J., & Ferlie, E. (2016). Applying Strategic Management Theories in Public Sector Organizations: Developing a typology. *Public Management Review*, 18(1), 1–19. <https://doi.org/10.1080/14719037.2014.957339>
- Rousseau, D. M. (1985). Issues of level in organizational research: Multi-level and cross-level perspectives. In *Research in Organizational Behavior* (Vol. 7, pp. 1–38). <https://doi.org/0-89232-497-X>
- Sabherwal, R., & Kirs, P. (1994). The alignment between organizational critical success factors and information technology capability in academic institutions. *Decisions Sciences*, 25(2), 301–330.
- Sabherwal, Rajiv, Hirschheim, R., & Goles, T. (2001). The Dynamics of Alignment: Insights from a Punctuated Equilibrium Model. *Organization Science*, 12(2), 179–197.
- Sambamurthy, V., & Zmud, R. W. (1999). Arrangements for Information Technology Governance: A Theory of Multiple Contingencies. *MIS Quarterly*, 23(2), 261–290.
- Sandberg, J., & Tsoukas, H. (2011). Grasping the Logic of Practice: Theorizing through Practical Rationality. *Academy of Management Review*, 36(2), 338–360.
- Sandelands, L., & Drazin, R. (1989). On the Language of Organization Theory. *Organization Studies*, 10(4), 457–478. <https://doi.org/10.1177/017084068901000401>
- Sayer, A. (1992). *Method in Social Science*. <https://doi.org/10.4324/9780203310762>
- Sayer, A. (2000). *Realism and Social Science*. Sage Publications.
- Schlosser, F., Beimborn, D., Weitzel, T., & Wagner, H. T. (2015). Achieving social alignment between business and IT - An empirical evaluation of the efficacy of IT governance mechanisms. *Journal of Information Technology*, 30(2), 119–135. <https://doi.org/10.1057/jit.2015.2>
- Schmitt, A., Raisch, S., & Volberda, H. W. (2016). Strategic Renewal: Past Research, Theoretical Tensions and Future Challenges. *International Journal of Management Reviews*, 00, 1–18. <https://doi.org/10.1111/ijmr.12117>
- Schoonhoven, C. B. (1981). Problems with Contingency Theory : Testing Assumptions Hidden within the Language of Contingency " Theory ". *Administrative Science Quarterly*, 26(3), 349–377.
- Schreyögg, G., & Sydow, J. (2011). Organizational Path Dependence : A Process View. *Organization Studies*, 32(3), 321–335. <https://doi.org/10.1177/0170840610397481>
- Schultz, M., & Hernes, T. (2013). A Temporal Perspective on Organizational Identity. *Organization Science*, 24(1), 1–21.
- Schwarz, A., Kalika, M., Kefi, H., & Schwarz, C. (2010). A Dynamic Capabilities Approach to Understanding the Impact of IT-Enabled Businesses Processes and IT-Business Alignment on the Strategic and Operational Performance of the Firm I . INTRODUCTION IT-enabled Capabilities Dynamic Approach Understanding the I. *Communications of the AIS*, 26, 57–84.

- Schwarz, G. M. (2012). The Logic of Deliberate Structural Inertia. *Journal of Management*, 38(2), 547–572. <https://doi.org/10.1177/0149206309361206>
- Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research. *Political Research Quarterly*, 61(2), 294–308.
- Segars, A. H., & Grover, V. (1998). Strategic Information Systems Planning Success: An Investigation of the Construct and Its Measurement. *MIS Quarterly*, 22(2), 139–163. <https://doi.org/10.2307/249393>
- Seibt, J. (2018). Process Philosophy. In *Stanford Encyclopedia of Philosophy*. Stanford University.
- Serving the Country Better*. (1985).
- Shao, Z. (2019). Interaction effect of strategic leadership behaviors and organizational culture on IS-Business strategic alignment and Enterprise Systems assimilation. *International Journal of Information Management*, 44(13), 96–108. <https://doi.org/10.1016/j.ijinfomgt.2018.09.010>
- Sillince, J. A. A., & Frost, C. (1995). Operational, environmental and managerial factors in non-alignment of business strategies and IS strategies for the police service in England and Wales. *European Journal of Information Systems*, 4(2), 103–115. <https://doi.org/10.1057/ejis.1995.12>
- Silva, L., & Hirschheim, R. (2007). Fighting Against Windmills: Strategic Information Systems and Organisational Deep Structures. *MIS Quarterly*, 31(2 (Special Issue)), 327–354.
- Slevin, D. P., & Covin, J. G. (1997). Strategy Formation Patterns , Performance , and the Significance of Context. *Journal of Management*, 23(2), 189–209.
- Sminia, H. (2009). Process research in strategy formation: Theory, methodology and relevance. *International Journal of Management Reviews*, 11(1), 97–125. <https://doi.org/10.1111/j.1468-2370.2008.00253.x>
- Smith, M. L. (2006). Overcoming theory-practice inconsistencies: Critical realism and information systems research. *Information and Organization*, 16(3), 191–211. <https://doi.org/10.1016/j.infoandorg.2005.10.003>
- Straub, D. W., & Ang, S. (2011). Editor's Comments: Rigor and Relevance in IS Research: Redefining the Debate and a Call for Future Research. *MIS Quarterly*, 35(1), iii–xi.
- Street, C., Gallupe, B., & Baker, J. (2018). The influence of entrepreneurial action on strategic alignment in new ventures: Searching for the genesis of alignment. *Journal of Strategic Information Systems*, 27(1), 59–81. <https://doi.org/10.1016/j.jsis.2017.06.002>
- Sutton, R. I., & Staw, B. M. (1995). What Theory is Not. *Administrative Science Quarterly*, 40, 371–384.
- Sydow, J., Schreyögg, G., & Koch, J. (2009). Organizational path dependence: opening the black box. *Academy of Management Review*, 34(4), 689–709. <https://doi.org/10.5465/AMR.2009.44885978>
- Tai, J. C. F., Wang, E. T. G., & Yeh, H. Y. (2019). A study of IS assets, IS ambidexterity, and IS alignment: the dynamic managerial capability perspective. *Information and Management*, 56(1), 55–69. <https://doi.org/10.1016/j.im.2018.07.001>
- Tan, F. B. (1995). The responsiveness of information technology to business strategy formulation an empirical study. *Journal of Information Technology*, 10..pdf. *Journal of Information Technology*, 10, 171–178.
- Taylor, F. W. (1911). *The Principles of Scientific Management*. Harper & Brothers.
- Teo, T., & Ang, J. (1999). Critical success factors in the alignment\rof IS plans with business plans.

International Journal of Information Management, 19, 173–185.

- Thietart, R.-A., & Forgues, B. (1995). Chaos Theory and Organization. *Organizational Science*, 6(1), 19–32.
- Thietart, R.-A., & Forgues, B. (2011). Complexity Science and Organization. In P. Allen, S. Maguire, & B. McKelvey (Eds.), *The SAGE Handbook of Complexity and Management* (pp. 53–64). Sage Publications.
- Thompson, E. P. (1967). Time, work-discipline, and industrial capitalism. *Past and Present*, 38(1), 56–97. <https://doi.org/10.1093/past/38.1.56>
- Tichy, N. M. (1983). *Managing Strategic Change*. John Wiley & Sons
- Tonra, B. (1999). The Europeanisation of Irish Foreign Affairs. *Irish Studies in International Affairs*, 10, 149–165.
- Tsai, W. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of Management Journal*, 44(5), 996–1004. <https://doi.org/10.2307/3069443>
- Tsang, E. W. K. (2014a). Case studies and generalization in information systems research: A critical realist perspective. *Journal of Strategic Information Systems*, 23(2), 174–186. <https://doi.org/10.1016/j.jsis.2013.09.002>
- Tsang, E. W. K. (2014b). Generalizing from research findings: The merits of case studies. *International Journal of Management Reviews*, 16(4), 369–383. <https://doi.org/10.1111/ijmr.12024>
- Tsoukas, H. (1989). The Validity of Idiographic Research Explanations. *Academy of Management Review*, 14(4), 551–561. <https://doi.org/10.5465/AMR.1989.4308386>
- Tsoukas, Haridimos. (2005). Afterword: why language matters in the analysis of organizational change. *Journal of Organizational Change*, 18(1), 96–104. <https://doi.org/10.1108/09534810510579878>
- Tsoukas, Haridimos, & Chia, R. (2002). On Organizational Becoming: Rethinking Organizational Change. *Organization Science*, 13(5), 567–582. <https://doi.org/10.1287/orsc.13.5.567.7810>
- Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review*, 38(4), 8–29. <https://doi.org/10.2307/41165852>
- Valorinta, M. (2011). IT alignment and the boundaries of the IT function. *Journal of Information Technology*, 26(1), 46–59. <https://doi.org/10.1057/jit.2010.28>
- Van de Ven, A. H. (1992). Suggestions for Studying Strategy Process: a Research Note. *Strategic Management Journal*, 13(Special), 169–188.
- Van De Ven, A. H., & Huber, G. P. (1990). Longitudinal Field Research Methods for Studying Processes of Organizational Change. *Organization Science*, 1(3), 213–219.
- Van De Ven, A. H., & Poole, M. S. (1995). Explaining Development and Change in Organizations. *Academy of Management Review*, 20(3), 510–540. <https://doi.org/10.2307/258786>
- Van De Ven, A. H., & Poole, M. S. (2005). Alternative approaches for studying organizational change. *Organization Studies*, 26(9), 1377–1404. <https://doi.org/10.1177/0170840605056907>
- Van der Wal, Z., De Graaf, G., & Lasthuizen, K. (2008). What's Valued Most? Similarities and differences between the organizational values of the public and private sector. *Public Administration*, 86(2), 465–483. <https://doi.org/10.1111/j.1467-9299.2008.00719.x>

- Van Grembergen, W. (2004). Governance in IT Outsourcing Partnerships. In *Strategies for Information Technology Governance*. Idea Group Publishing.
<https://doi.org/10.4018/9781591401407.ch012>
- Venkatraman, N. (1989). The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence. *Academy of Management Review*, 14(3), 423–444.
<https://doi.org/10.5465/AMR.1989.4279078>
- Venkatraman, N., & Camillus, J. C. (1984a). Exploring the Concept of “Fit” in Strategic Management. *Academy of Management Review*, 9(3), 513–525. <https://doi.org/10.2307/258291>
- Venkatraman, N., & Camillus, J. C. (1984b). Exploring the Concept of “Fit” in Strategic Management. *Academy of Management Review*, 9(3), 513–525.
- Venkatraman, N., & Ramanujam, V. (1987). Planning System Success: A Conceptualization and an Operational Model. *Management Science*, 33(6), 687–705.
<https://doi.org/10.1287/mnsc.33.6.687>
- Vergne, J.-P., & Durand, R. (2010). The Missing Link Between the Theory and Empirics of Path Dependence: Conceptual Clarification, Testability Issue, and Methodological Implications. *Journal of Management Studies*, 47(4), 736–759. <https://doi.org/10.1111/j.1467-6486.2010.00913.x>
- Vermerris, A., & Heck, E. Van. (2014). *No time to waste : the role of timing and complementarity of alignment practices in creating business value in IT projects*. 23(6), 629–654.
<https://doi.org/10.1057/ejis.2013.11>
- Vitale, M. R., Ives, B., & Beath, C. M. (1986). Linking information technology and corporate strategy: an organizational view. *Proceedings of the Seventh International Conference on Information Systems*, 15, 17.
- Volberda, H. W., Baden-Fuller, C., & Van Den Bosch, F. A. J. (2001). Mastering Strategic Renewal: Mobilising Renewal Journeys in Multi-unit Firms.pdf. *Long Range Planning*, 34, 159–178.
- Volkoff, O., Strong, D. M., & Elmes, M. B. (2007). Technological Embeddedness and Organizational Change. *Organization Science*, 18(5), 832–848. <https://doi.org/10.1287/orsc.1070.0288>
- Von Bertalanffy, L. (1968). General System Theory. In *Georg. Braziller New York*.
<http://books.google.es/books?id=N6k2mILtPYIC>
- Wade, M., & Hulland, J. (2004). the Resource-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research. *MIS Quarterly*, 28(1), 107–142.
<https://doi.org/Article>
- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4(2), 74–81. <https://doi.org/10.1057/ejis.1995.9>
- Walsham, Geoff. (1995). The emergence of interpretivism in IS research. *Information Systems Research*, 6(4), 376–394.
- Wei, H. L., Wang, E. T. G., & Ju, P. H. (2005). Understanding misalignment and cascading change of ERP implementation: A stage view of process analysis. *European Journal of Information Systems*, 14(4), 324–334. <https://doi.org/10.1057/palgrave.ejis.3000547>
- Weick, K. E. (1979). *The Social Psychology of Organizing*. Random House.
- Weick, K. E., & Quinn, R. E. (1999). Organizational Change and Development. *Annual Review of Psychology*, 50, 361–386. <https://doi.org/10.1146/annurev.psych.50.1.361>

- Weill, P., & Olson, M. H. (1989). An Assessment of the Contingency Theory of Management Information Systems. *Journal of Management Information Systems*, 6(1), 59–85.
- Weiss, J. W., Thorogood, A., & Clark, K. D. (2006). Three IT-Business Alignment Profiles: Technical Resource, Business Enabler, and Strategic Weapon. *Communications of the AIS*, 18, 676–691. <https://doi.org/Article>
- Whetten, D. A. (1989). What Constitutes a Theoretical Contribution? *The Academy of Management Review*, 14(4), 490–495.
- Whipp, R., & Pettigrew, A. M. (1992). Managing Change for Competitive Success: Briding the Strategic and Operational. *Industrial and Corporate Change*, 1(1), 205–233.
- Willcoxson, L., & Chatham, R. (2004). Progress in the IT/business relationship: A longitudinal assessment. *Journal of Information Technology*, 19(1), 71–80. <https://doi.org/10.1057/palgrave.jit.2000004>
- Williams, C. K., & Wynn Jr, D.E. (2012). A critical realist script for creative theorising in information systems. *European Journal of Information Systems*, 27(3), 315–325. <https://doi.org/10.1080/0960085X.2018.1435231>
- Williams, M. (2001). *Problems of Knowledge: A Critical Introduction to Epistemology* (Vol. 53, Issue 211). Oxford University Press.
- Williams, W., & Lewis, D. (2008). Strategic Management Tools and Public Sector Management: The Challenge of Context Specificity. *Public Management Review*, 10(5), 653–671. <https://doi.org/10.1080/14719030802264382>
- Wolters, A. M. (1983). On The Idea of Worldview and Its Relation to Philosophy. In *Stained Glass* (pp. 14–25). University Press of America.
- Wong, T. C., Ngan, S. C., Chan, F. T. S., & Chong, A. Y. L. (2012). A two-stage analysis of the influences of employee alignment on effecting business-IT alignment. *Decision Support Systems*, 53(3), 490–498. <https://doi.org/10.1016/j.dss.2012.03.008>
- Wu, S. P.-J., Straub, D. W., & Liang, T.-P. (2015). How Information Technology Governance Mechanisms and Strategic Alignment Influence Organizational Performance: Insights from A Matched Survey of Business and IT Managers. *MIS Quarterly*, 39(2), 497–518.
- Wynn, J. D., & Williams, C. K. (2012). Principles for Conducting Critical Realist Case Study Research in Information Systems. *MIS Quarterly*, 36(3), 787–810. <http://aisel.aisnet.org/cgi/viewcontent.cgi?article=3048&context=misq%5Cnhttp://web.b.ebscohost.com.idpproxy.reading.ac.uk/ehost/pdfviewer/pdfviewer?sid=b06d5087-1c61-4f3e-9d28-d9ddacd3b32d@sessionmgr113&vid=5&hid=125>
- Yeow, A., Soh, C., & Hansen, R. (2018). Aligning with new digital strategy: A dynamic capabilities approach. *Journal of Strategic Information Systems*, 27(1), 43–58. <https://doi.org/10.1016/j.jsis.2017.09.001>
- Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd ed.). Sage Publications.
- Young, R. C. (1988). Is Population Ecology a Useful Paradigm for the Study of Organizations? *American Journal of Sociology*, 94(1), 1–24.
- Zachariadis, M., Scott, S., & Barrett, M. (2013). Methodological Implications of Critical Realism for Mixed-Method Research. *MIS Quarterly*, 37(3), 855–879. <https://doi.org/10.25300/MISQ/2013/37.3.09>
- Zviran, M. (1990). Relationships between Organisational and Information Systems Objectives: Some Empirical Evidence. *Journal of Management Information Systems*, 7(1), 65–84.

Appendices

Appendix 1: Interviewee List

Interview #	Participant #	Department (Current)	Current Role	ICT or Business
I1	P1	DFA	Senior Mngt.	ICT
I2	P2	DFA	Senior Mngt.	Business
I3	P3	DFA	Top Mngt.	Business
I4	P4	DFA	Senior Mngt.	Business
I5	P5	DFA	Top Mngt.	Business
I6	P6	DFA	Ambassador	Business
I7	P7	DPER (OGCIO)	CEO	ICT
I8	P8	DFA	Top Mngt.	Business
I9	P9	DFA	Senior Mngt.	ICT
I10	P10	Company	Consultant	ICT
I11	P11	DFA	Senior Mngt.	Business
I12	P12	DFA	Top Mngt.	Business
I13	P13	DFA	Top Mngt.	Business
I14	P14	DFA	Lower Mngt.	Business
I15	P15	DFA	Top Mngt.	Business
I16	P16	DFA	Ambassador	Business
I17	P17	DFA	Senior Mngt.	ICT
I18	P18	DAFM	Senior Mngt.	ICT
I19	P19	DFA	Senior Mngt.	Business
I20	P20	DFA	Senior Mngt.	Business
I21	P21	DFA	Senior Mngt.	ICT
I22	P22	DFA	Ambassador	Business
I23	P23	DFA	Senior Mngt.	Business
I24	P24	DFA	Top Mngt.	Business
I25	P25	DETE	Senior Mngt.	ICT
I26	P26	DFA	Senior Mngt.	Business
I27	P27	DFA	Ambassador	Business
I28	P28	DFA	Top Mngt.	Business
I29	P29	DFA	Senior Mngt.	ICT
I30	P30	DFA	Top Mngt.	Business
I31	P31	DFA	Senior Mngt.	ICT
I32	P32	DFA	Senior Mngt.	Business
I33	P33	DFA	Senior Mngt.	Business
I34	P34	DFA	Senior Mngt.	ICT
I35	P34	DFA	Senior Mngt.	ICT
I36	P35	DFA	Top Mngt.	Business
I37	P35	DFA	Top Mngt.	Business
I38	P36	DPER (OGCIO)	Top Mngt.	ICT
I39	P36	DPER (OGCIO)	Top Mngt.	ICT
I40	P37	DFA	Retired	ICT
I41	P38	DFA	CEO	Business

Appendix 2: Digital First – Event Programme – DFAT

Digital First

Wednesday, 9 March 2016

The Ballroom, Iveagh House, Department of Foreign Affairs and Trade, St Stephen's Green South

EVENT PROGRAMME

9.00	REGISTRATION & REFRESHMENTS
9.30	Welcome by the Chair Orlaigh Quinn , Assistant Secretary - Public Service Reform and Delivery Department of Public Expenditure and Reform
9.35	Opening Address Robert Watt , Secretary General Department of Public Expenditure and Reform
9.45	Water Conservation Grant Digital Delivery Alan Flynn Department of Social Protection
10.10	Passport Service Reform Programme Fiona Penollar Passport Office
10.30	Panel Discussion and Q&A – Chaired by Orlaigh Quinn Alan Flynn , Department of Social Protection Fiona Penollar , Passport Office
10.40	NETWORKING & REFRESHMENTS
11.10	Lightning Topics 1. Open Data Evelyn O'Connor , Department of Public Expenditure and Reform 2. Integrated Licensing Application Service (www.licences.ie) Michelle Kearney , Department of Jobs, Enterprise and Innovation
11.35	MyAccount Conor McDonough Office of the Revenue Commissioners
12.00	Panel Discussion and Q&A – Chaired by Orlaigh Quinn Evelyn O'Connor , Department of Public Expenditure and Reform Conor McDonough , Office of the Revenue Commissioners Michelle Kearney , Department of Jobs, Enterprise and Innovation
12.15	Digital First - Where to from here? Barry Lowry , Incoming GCIO Office of the Government Chief Information Officer, Department of Public Expenditure and Reform
12.25	Closing Remarks by the Chair Orlaigh Quinn
12.30	CLOSE

Organised by: Office of the Government Chief Information Officer

Supported by: Reform and Delivery Office

Register today by emailing: egov@per.gov.ie



Digital First Event

Wednesday, 9 March 2016

The Ballroom, Iveagh House, Department of Foreign Affairs and Trade, St Stephen's Green South

Details

Government should use the appropriate mix of channels of communication and engagement to improve citizen satisfaction in service delivery, reach new levels of engagement and trust, and increase efficiency within the Public Service.

At this event, a selection of public service organisations will set out how they have delivered or are planning to deliver new services through a Digital First approach, as identified in the Public Service ICT Strategy. Successful delivery of digital services requires a business led focus supported by ICT initiatives. This event therefore is aimed at business and ICT innovators.

	
Chaired by Orlaigh Quinn Assistant Secretary Public Service Reform and Delivery Office Department of Public Expenditure and Reform	Opening Address by Robert Watt Secretary General Department of Public Expenditure and Reform

Speakers from the following Organisations

	Department of Public Expenditure and Reform
	Department of Social Protection
	Office of the Revenue Commissioners
	Department of Jobs, Enterprise and Innovation
	Department of Foreign Affairs and Trade

Register today by emailing: egov@per.gov.ie

Appendix 3: Workshop Results – Analysis of External & Internal ICT Environment

Table 1: Workshop Results: Analysis of the External Environment

Strategy Inputs: Analysis of the External ICT Environment
Theme 1: Citizen Demand and Expectations
- Citizens expect digital delivery of services and demand for fast services. - Online systems need to be user friendly (easy to use and intuitive) - Demand for Wi-Fi in Embassies and Missions
Theme 2: Security
- Requirement for improved and evolved data protection and security policy - Citizen data needs to be protected to improve confidence. - Cyber security and threat for hacks and espionage
Theme 3: Communication
- DFAT websites need standardised branding to allow for uniformity in communication and sending consistent image and messages. - Rising need for social media to interact with citizens. - Dealing with queries and assisting citizens through Social Media platforms - Multiple foreign language capability
Theme 4: Other
- Inter-agency collaboration, communication and data sharing through integrated platforms - Training needs to develop a more professional ICT staff network. - Compliance of data regulations from EU - E-working solutions

Table 2: Workshop Results: Analysis of the Internal ICT Environment

Strategy Inputs: Analysis of the Internal ICT Environment
Theme 1: Application of ICT
- Need for technology to support large scale interventions. - Technological advancements that offer new options for automating roles - Data analysis capability of modern ICT to save resources. - ICT system to allow for flexible working patterns. - Overcoming desire to use off-the-shelf systems and products. - Intranet needs to offer insight into structure and 'Who's who' function to see who is working on what (as opposed to traditional circulation list) - Overcome tendency to focus on in-house solutions to ICT issues or self-build application which mean that the DFA is unable to benefit from commercially available functionality.
Theme 2: Mobility
- Requirement of having access to intranet and documents remotely and on-the-go. - Ability to attend VC meetings via their desk phones or desktop computers. - Lighter laptops - Disconnect between Windows desktop and iOS mobile devices reduces interoperability. - SECTION DELETED BY REQUEST OF DFA
Theme 3: Security
- SECTION DELETED BY REQUEST OF DFA
Theme 4: Other
- Need for better VC approach – proposing the use of 'Skype for Business'. - Missions have been using Shadow IT for communication. - Lack of support for ICT, e.g., Asian Missions having issues with out-of-hours ICT support.

Appendix 4: Survey Responses

Table below is a synthesis from all survey responses (n = +300) and placed into key thematic areas.

Table 1: Survey Responses

Theme 1: Flexibility, Accessibility and Remote Working
Respondents noted the need for increased flexibility and accessibility in relation to internal systems to improve mobility. This was particularly emphasised by Missions abroad and the work requirements during travel. Furthermore, greater connectivity is required to access documents.
Theme 2: Internal Communication
Respondents raised the concern of email functionality, reporting mechanisms, inter-agency communication as well as the intranet. Regarding emails, the following has been noted: “overload of internal e-mail, over-use of e-mail groups and lack of focus”, and another stated, “overload of email by ‘chat type’ messages that could be transferred to a department IM system”. Email does not offer integrated solutions to contacts, calendars and task. Intranet needs to be improved to support internal communication and inter-agency collaboration.
Theme 3: External Communication
Respondents note the need for consistent communication across various DFA channels, including social media – which results in improved image and reputation. Need to transition from traditional print to digital media.
Theme 4: Knowledge Management & Filing System
Respondents note significant issues pertaining to knowledge management. Some have noted the “need for more central reservoirs of information stored and retrievable based on key search words”; other shared the sentiment and noted that “we are all swamped... and often cannot find the facts we need when we need them”. Others have noted the need for “creating a user-friendly department-wide knowledge management system” to get required knowledge. Others have made comments regarding the standardisation of filing documents as well as ease of use regarding classification designation for those documents. Overall, the general consensus is that the current systems is out of date and requires a more analytical approach to retravel to “countering institutional knowledge-loss”
Theme 5: Cyber Security and Data Protection
Most respondents have emphasised the global changing environment requires greater emphasis on cyber security and data protection. Additionally, the responses seem to present a complex issue; on hand, there is a need for increased security – but on the other, there is a need for ease of access to the internal system. As one person notes: “the demand for speed and agility in technology is sometimes in conflict with our security”. To combat this solution, a respondent proposed “training in cyber-security and the proper handling of secure documents should be rolled out to all staff”. In addition, concerns have been raised in relation to GDPR and how these change in law will influence the way data and information is stored – as well as related security implications.
Theme 6: External Demands
Regarding external demands, many have drawn on the rise of social media as a viable alternative due to its reach. However, others have noted demands from Brexit. Specifically, the need to communicate the latest updates on Ireland’s position to both the citizens as well as relevant policy makers in the EU and UK. For example, one respond stated “as a small bilateral Embassy in Europe, Brexit is the major change factor. We need the latest tools to communicate our Brexit policy as the Art. 50 negotiations advance”; while another stated that “we would appreciate additional means to enhance our public messaging on Ireland’s place in Europe. We would especially appreciate any tools to drill down into the vast quantity of reports on Brexit and the Future of Europe”.
Theme 7: Citizen Needs
Two key aspects of ‘citizen needs’ have been identified. First, the increased use of online/digital payments when paying for consular services. Three respondents note the transition to more online payment and thus urge the Department to consider developing their own “online application for taking payments across our services”. Secondly, another employee has identified that “Citizens have expectations that Wi-Fi and other electronic services are available to them in the Embassy, this is not the case and can create difficulties”.

Appendix 5: ICT Strategy Development – Review & Draft

ICT Strategy Development – Phase 1 Review DRAFT

Draft Mission Statement for ICT Strategy: *To deliver outstanding public services using digital channels, facilitate new structures for collaboration within the Department and with external partners, protect our network's security and empower our staff at home and abroad with best-in-class technology tools, in order to maximise the capability of the Department to deliver on its Statement of Strategy.*

Goals and Issues Emerging from Staff Feedback

Goal Area 1: To provide excellent public services, delivered using customer focussed technologies, and to develop the ICT capabilities necessary to promote Ireland's interests and influence internationally. **EMPOWERING OUR CITIZENS**

Related Issues in Staff Feedback:

- Public expectations of easy-to-use and secure digital services;
- Citizen can communicate with the department using digital channels
- To be conscious of the linguistic needs of our international citizens/customers/contacts;
- The need to accept and embrace the 24/7 demand for services;
- Customer expectations around the availability of services on mobile platforms;
- Fully deliver on Passport Reform;
- The need to think 'digital first';
- Importance of positive (and de-politicised) public communication about our work, especially as regards ICT strategy/solutions;
- Need to embrace audio-visual, web, social media and other new technologies in our ICT infrastructure as part of efforts to project Ireland's interests and influence;
- Views of DFAT among public/media/Oireachtas/other Government Departments;
- Readiness to publicly combat fake news/fraud;
- To *maintain* online innovation as technologies change;
- Use of technology to support branding, campaigns;
- Ability of Missions to communicate quickly and with flexibility in their regions including via 'mobile offices';
- Recognition of the 24/7 nature of news and consular crises and the need for staff to be able to respond quickly on all available platforms;
- Capacity of ICT Unit to deliver change (financial & human resources);
- Value of delegating ICT responsibilities to staff/Missions;
- Capability for full ICT Support 24/7.

Possible Workshop Participants for this Goal Area:

~~~~~

~~~~~

Goal Area 2: To collaborate seamlessly within the Department, and with external partners, using suitable technology platforms to integrate systems, share and retain knowledge, innovate and drive change. **COLLABORATION, INNOVATION, KNOWLEDGE, INTEGRATION, AND CHANGE.**

Related Issues in Staff Feedback:

- The importance of DFAT Strategy driving ICT, rather than vice versa;
- The need for all our ICT systems to talk to each other;
- The need for a data classification system to allow more sharing of information, new information storage systems;
- Better understanding of Management Board change priorities – strengthening the link with strategy;
- Strong demand across Missions for integrated contact management system;
- Need to increase our online collaboration options within DFAT and with Government departments/state agencies/other partners;
- Demand for integrated Management Information System;
- The need to better keep abreast of developments across Government, including common ICT solutions developed by the OGCIO or under Civil Service Renewal;
- The importance of factoring in data protection/General Data Protection Regulation in all projects;
- The need to better cope with large volumes of material, particularly by email, or – better still – to find alternative ways to manage, and collaborate on, this material online;
- Reducing ICT-related marginalisation of staff in High Risk and SDM locations;
- Need for solutions cognisant of DFAT rates of churn/mobility; support for handovers;
- Integrated grants management system for Votes 27 and 28;
- Need for close/tight ICT cooperation with Knowledge Management and Innovation Taskforce (KMIF) and Project Management Office (PMO);
- Need to take full advantage of CRM;
- Systems needed which underpin Diaspora contact;
- Need to leverage one-to-one videoconferencing;
- ICT to balance the development of solutions for the Department with availability of central OGCIO solutions;
- Deployment of new systems must be matched by a culture of embracing them;
- Need for ICT support for Department reporting systems and guidelines.

Possible Workshop Participants for this Goal Area:

[REDACTED]

Goal Area 3: To empower our staff to deliver on the Department's High Level Goals by making available best-in-class technology solutions that support mobility, flexibility and real-time access to useable data. **EMPOWERING OUR DIPLOMATS**

Related Issues in Staff Feedback:

- How to achieve an appropriate and sustainable balance between security needs and full functionality needed to empower staff;
- What do we mean by security? – data? State secrets?
- The IT experience on a desktop differs from mobile experience;
- Greater availability of key desktop services on all mobile devices, especially for staff abroad;
- Increased emphasis on online training;
- Value of real-time access to data/resources/records – a potential game-changer!
- Importance of generating the correct/most necessary data, before questions of easy access are answered;
- Potential to develop better metrics to illustrate quality of our work, drawing on real-time data; to have adequate systems to draw down and present data;
- More robust classification of data;
- The need to continually examine how we compare with other Foreign Ministries and other Government Departments and to challenge ourselves to become world class/market leaders;
- Recognition of changing nature of work – enhancement of eWorking capability;
- Awareness of opportunities and risks around social media;
- Avoiding multiple identities/passwords;
- Extension of videoconferencing to mobile scenarios, external participants;
- The importance of building in flexibility – we don't know what the ICT options will be 5 years from now, but we can ready ourselves to take advantage.

Possible Workshop Participants for this Goal Area:

[REDACTED]

Goal Area 4: To protect our network's security and to develop the ICT capabilities necessary to promote Ireland's interests and influence internationally

Related Issues in Staff Feedback:

- How to achieve an appropriate and sustainable balance between security needs and full functionality needed to empower staff;
- What do we mean by security? – data? State secrets?
- The need for a data classification system to allow more sharing of information, new information storage systems;
- Need to embrace audio-visual, web, social media and other new technologies in our ICT infrastructure as part of efforts to project Ireland's interests and influence;
- Views of DFAT among public/media/Oireachtas/other Government Departments;
- To *maintain* online innovation as technologies change;
- Use of technology to support branding, campaigns;
- Ability of Missions to communicate quickly and with flexibility in their regions including via 'mobile offices';
- Recognition of the 24/7 nature of news and consular crises and the need for staff to be able to respond quickly on all available platforms, including to combat fake news;
- Capacity of ICT Unit to deliver change (financial & human resources);
- Value of delegating ICT responsibilities to staff/Missions;
- Capability for full ICT Support 24/7;
- The importance of building in flexibility – we don't know what the ICT options will be 5 years from now, but we can ready ourselves to take advantage.

Possible Workshop Participants for this Goal Area:

Appendix 6: Preliminary ICT Issues

In Order to advance the Strategic Goals and the Actions listed under them we need to consider ICT issues.....

ICT Infrastructure

- Current environment (brief statement of 'as is' with regard to technology)
- Communications infrastructure – delivery of Mission services
- Service portfolio (current commitments to service delivery)
- Tech Challenges (software maturity, exponential storage growth, migration issues)
- Target Operating Model (preferred platforms, landscape for new services)

ICT Organisation / Skills

- ICT management / leadership
- Staff complement / skill levels/ Training
- Technical capacity
- Outsourced services / resources
- Change Management

Approach to Applications Development

- Business Unit engagement
- KMTF / ICT Sub-Committee approval to proceed
- Agile principles
- Business analysis
- Requirements definition
- Procurement / Commissioning of ICT resources
- Test Strategy

Risks and constraints

- Sanction / compatibility with OGCIO for strategic actions
- Maintenance of sufficient skill levels
- Maintenance of sufficient staff levels.

- Capacity of market to deliver
- Security constraints

Project Management Approach

- Key PM milestones incorporated into project planning
- Assistance where necessary from Department's PM Unit
- Balance struck between strict PM adherence and standards and practices of software development
- Strategic Actions must be timetabled for delivery within the strategy

Budgeting / Financial Resources

- Sufficient funding should be available to advance the Strategic Actions
- Actions must be costed using best available pricing models
- Delivery of projects should be phased within the strategy timescale to make smart use of resourcing / funding
- Projects with major capital elements to be included in departments 4 year capital programme

Implementation and Monitoring

- All actions emerging from the strategy must be appropriately managed and monitored via internal ICT Unit controls, wider project team meetings, Knowledge Management Task Force and Management Board sub-Committee for ICT

The implementation of the Strategy itself shall be monitored by the ICT Sub-Committee at two monthly intervals.

Appendix 7: Thematic Patterns in Workshop (Initial Goal Areas)

GA1: “to prove excellent public services, delivered using customer focussed technologies”. Positive: 1) the Online Passport Renewals project was touted as an exemplary example of a well delivered project and engaged multiple stakeholders and ultimately led to better services for the citizens. 2) the development of the Travelwise App which offers citizens up-to-date and current information – which has received praise from citizens; 3) the utilisation of social media in enhancing the DFAT’s brand and reputation to a larger demographic; 4) the implementation of ePQ and eSubmissions which has improved business processes; and 5) the adoption of online payment systems for the Missions that offer a more efficient and secure service for the citizens paying for consular services Challenges: 1) services provided by DFAT are not ‘mobile friendly’ for the citizens. 2) DFAT’s brand is not consistent across various citizen-facing mediums. 3) DFAT perceived as lagging with regards to range and delivery of online services compared to other agencies. 4) compliance challenges such as GDPR and Payment Card Industry Data Security Standard (PCI DSS). 5) SECTION DELETED BY REQUEST OF DFA 6) the requirement by central government to integrate future services into MyGovID and PPSN; 7) no CRM system; and 8) citizen-DFAT communication channels are limited and outdated Priorities & Actions: Priority 1: develop a single customer interface that is supported by MyGovID and integrated with both internal and external government information systems. This includes A) engagement with the Department of Social Protection to test ‘proof of content’, building the integration infrastructure, assessing current services for potential integration readiness as well as ensuring the TOM includes MyGov ID capacity for future services; B) migrate existing services to the MyGovID infrastructure; and C) integrate future systems with the MyGovID infrastructure and assess for service improvements. Priority 2: increase the range of customer-facing services that are complaint, digitally enabled, mobile friendly with a consistent brand across the mediums. This includes A) identifying opportunities for online services that replace current manual processes; B) align government portals and consolidate design principles across mediums while also ensuring a response and mobile designs; and C) implementing a new methodology for design principles on new projects. Priority 3: deploy a dynamic CRM system that meets requirements of the business units. This includes: A) consulting business units to understand their needs and requirements; B) installing and designing exercise encompassing a multitude of stakeholders to ensure needs are met; and C) implementing the CRM system to the business units and ensuring it is comparative and works – while also phasing out older systems that it replaces. Priority 4: implementing a secure Passport Production System that meets user needs and requirements. This includes: A) providing input and support to the procurement process; B) implementing the new system and ensuring principles are met; and C) ensuring on-going support and maintenance of the system.
GA2: “to promote seamless collaboration within the Department, and with external partners, using secure and integrated technology platforms to share and retain knowledge, drive innovation and support change”. Positive: 1) the MB has become more open and made attempts to reach out and connect to staff; 2) the Digital Asset Management System has changed the way files are used throughout the department. 3) intranet has become more effective by providing more ‘highly valued systems’ that are used by staff to carry out work; 4) the use of the Intranet as a collaborative work space for projects and committees; 5) increased level of communication and cooperation across units as well as more willingness to participant in cross-unit projects; and 6) better communication between DFAT and internal/external stakeholders Challenges: 1) difficulties in working simultaneously on shared documents and projects housed on an external cloud. 2) systems working independently but doing similar things (e.g. flexi system and PeoplePoint); 3) staff not aware of tools already exist and tools needed to more effectively work; 4) staff churn rates and rotations leads to information loss. 5) information handling is an issue since storage is non-systematic and non-uniform. 6) too much information is stored on emails which leads to inaccessibility and potential loss of information. 7) security and compliance are seen as inhibitors to sharing and utilisation information; and 8) to centralised approach for contacts management Priorities & Actions:

Priority 1: develop a collaborative workspace as an alternative to email. This includes and requires: A) engagement of business to carry out a requirement- and needs-based analysis to identify and agree on system requirements; B) commence the development of platform; and C) deliver the new system to the business units.

Priority 2: implement an effective data classification policy supporting by information classification tools to meet the needs of both internal and external users. This includes A) agreeing on data classification levels to develop a policy on classifying certain documents as well as determining technology required to support this policy; B) commence procurement exercise and classify all current and future information; C) migration of data and filing system to central OGCIO eDocs solution.

Priority 3: deploying an effective and appropriate Contacts Management System. This will include A) an understanding of the various business unit needs; B) the delivering of the solution at the HQ as well as Missions abroad; and C) ongoing support for the implementation as well as continuous improvements.

Priority 4: consume and contribute to collaboration platforms across government, which requires: A) an analysis on existing and future system to determine the suitability for a 'build to share' platform while also developing systems with new 'build to share' capabilities; B) migrating existing website hosting services to government hosting centre; and C) migrating the Financial Management system to shared services.

GA3: "to empower our staff to deliver on the Department's high-level goals by making available best-in-class technology solutions that support mobility, flexibility and real-time access to useable data".

Positive:

- 1) the Intranet as a communication and collaboration medium is valued – which are now used for briefs, shared calendars, event reporting and country notes;
- 2) the implementation of video conferencing and video messaging has improved communication and accessibility;
- 3) mobile access to emails has also improve accessibility and flexibility.
- 4) the development of an internal staff directors and subsequent mobile app is appreciated amongst staff; and
- 5) a streamlined, common desktop experience that is supported by a reliable corporate network to support frequent staff rotation.

Challenges:

- 1) the use of metrics by functional units – poorly understood within the ICT unit;
- 2) mobile access primarily focused on email – and email is seen as 'cumbersome';
- 3) limitations to video conference.
- 4) access to video conference is either shared or grade-based.
- 5) external video conference is difficult and nor not available; and
- 6) access to external collaboration resources such as those based on cloud services are not supported.

Priorities & Actions:

Priority 1: strengthen DFAT's capability and capacity to identify and adapt new technologies as well as supporting continuous innovation and change. This priority requires that: A) the DFAT strengthens the role and function of the SPU with regards to driving innovation and change across the Department – in addition to increasing their global footprint; B) engaging, empowering and enabling senior/middle managers as agents of innovation and change across the DFAT; and C) through the SPU, invest in the development of the Senior Management Network (SMN) and a new Middle Management Network (MMN) as a means through which innovation is advanced.

Priority 2: to develop and implement a data analytics function by developing data analysis skills across the DFAT. This is achieved by: A) creating a data analytics function and recruiting specialists in this domain; B) conduct an audit with the intent of producing a data architecture while engaging various units to understand their requirements; and C) identify and implement appropriate data analysis platform.

Priority 3 is concerned with improving remote access to provide a streamlined, secure and stable mobile environment. This is achieved by: A) upgrading existing central infrastructure to support increased mobility as well as identifying and testing suitable mobile devices; B) deploying new mobile devices that exhibit enhanced capabilities including file access and editing software; and C) upgrading remote access services such as improved communication tools to allow for video conferencing and video calling.

Finally, priority 4 is aimed at implementing an integrated online Grants Management Systems; and requires: A) liaising with various business units to determine and obtain consensus on the system requirements; B) designing, testing and installing the system in line with the system development methodology outlined in GA1; and C) integrating the GMS with the MyGovID platform.

GA4: “to protect our network’s security and to develop the ICT capabilities necessary to promote Ireland’s interests and influence internationally”.
Positive: 1) the creation of the ICTG-SC as a useful governance mechanism that supports and guides the ICT Unit in relation to the ICT2020 Strategy. 2) the culture of the ICT Unit characterised as agile due to their supportiveness and responsiveness; 3) engagement and co-operation with the business units on projects. 4) the use of SharePoint as a development platform for internal systems. 5) Security Awareness training for staff; and 6) the increased ability of the Department to deal with external security threats and protection their assets.
Challenges: 1) too much focus on security as opposed to providing services to business units; 2) maintain the balance of security vs usability. 3) the professionalisation of the ICT unit – still requires more resources to update skills and to further support business units in the future. 4) ICT not seen as a facilitator or enabler of change – where the ICT Unit still seen as a support function; 5) ICT viewed as a responder rather than innovator. 6) Information management is viewed as inappropriate for the needs of the Department and is inhibiting the development of more flexible mobile services; and 7) services provided by the ‘Build to Share’ platform may not be ‘one size fits all’.
Priorities & Actions: Priority 1: reconfiguring DFAT’s ICT resources and capabilities to better meet the needs of the Department and the Missions abroad. This includes the need to: A) strengthen ICT leadership at the top management level, specifically the MB (e.g. executive functions associated with the Chief Information Officer role); B) reviewing the organisational arrangement for ICT (and related steering committees) and to agree optimal distribution of functions for future projects; C) modernising the ICT Unit and realigning its resources and capabilities to better meet business needs (e.g. strategic development that includes business engagement, programme delivery, customer support, training and operations management); and D) investing in the development of ICT-related capabilities of management and staff throughout the organisation and subsidiaries. Priority 2: strengthening the capability and capacity of the Department to deliver ICT-enabled business change programmes. This includes the need to: A) invest in developing the capability and capacity of the Department to deliver and guide large-scale ICT-enabled business change programmes; B) develop and embed modern programme management practices that are consistent with the advice by OGCI; and C) adopt modern value management practices in order to fully capture the value (e.g., business, public social) of ICT investments. Priority 3: implementing an updated security policy that is better aligned to the needs of various business units and adopt a risk-based approach to security. This includes A) reviewing and amending existing security policy as well as supporting information classification exercise and continuing to deliver Security Awareness training across the organisation; B) adopting a risk-based approach to new systems and services; and C) carrying out on-going annual review of the security policies. Priority 4: designing and implementing an appropriate Electronics Records and Documents Management (ERDM). This includes A) creating an ERDM policy in line with business needs and central government policy; B) deploying robust system and technologies to support and maintain policy while agreeing and communicating norms and behaviours to staff across the organisation; and C) assigning an ‘Information Manager’ for each business unit to create an Information Managers Network to support policy and migration to the use of eDocs (GA2).

Appendix 8: ICT Strategic Framework & ICT Action Plan

STRAPLINE: MAXIMISING THE POWER OF CONNECTIONS				
AMBITION: TO CONNECT CITIZENS, STAFF AND STAKEHOLDERS, AND TO DELIVER ON DEPARTMENTAL PRIORITIES THROUGH THE ADOPTION OF BEST-IN-CLASS TECHNOLOGY SOLUTIONS.				
GOALS	1. PROVIDING EXCELLENT PUBLIC SERVICES	2. PROMOTING SEAMLESS COLLABORATION	3. EMPOWERING OUR STAFF	4. DEVELOPING OUR RESOURCES AND CAPABILITIES
OUR STRATEGIC PRIORITIES	1. Develop a single customer interface supported by MyGovID and integrated with internal and external (government) information systems. 2. Increase the range of customer-facing services that are compliant, digital first, mobile friendly, and with a common brand. 3. Deploy a dynamic Customer Relationship Management System that meets the service needs of customers and business units. 4. Implement a secure Passport Production System that meets the needs of service users.	1. Develop a collaborative workspace as an alternative to Email. 2. Implement an effective data classification policy supported by information classification tools to meet the needs of internal and external users. 3. Deploy an effective and appropriate Contacts Management System. 4. Consume and contribute to collaboration platforms across government.	1. Strengthen our capability and capacity to identify and adapt new technologies and support continuous innovation and change. 2. Develop and implement a data analytics function supported by data analysis skills across the Department. 3. Improve remote access to provide a streamlined, secure and stable mobile environment. 4. Implement an integrated, online Grants Management System.	1. Reconfigure our ICT resources and capabilities to better meet the needs of the Department and its Missions. 2. Strengthen the capability and capacity of the Department to deliver ICT-enabled business change programmes. 3. Implement an updated Security Policy and Posture better aligned to the needs of Business Units and adopt a risk based approach to Security. 4. Design and implement an appropriate Electronic Records and Documents Management (ERDM) Policy supported by robust systems and technologies.
OUTCOMES	1. By 2022, we will have increased the range of accessible, secure and highly available public services.	2. By 2022, we will have developed responsive, flexible ICT solutions that enhance the collaborative capability and capacity of the Department and its Missions.	3. By 2022, we will have empowered our staff to deliver an excellent public service based on an enhanced capacity for innovation and change.	4. By 2022, we will have reconfigured our ICT resources and capabilities to deliver on Departmental priorities.

Goal (1)	Delivering outstanding public services				
Co-Leaders	ICT/ Business Partnership				
Priorities	Actions	18-19	19-20	Benefits	People
1.1 Increase the range of customer-facing services that are digital first, mobile friendly, compliant, secure and with a consistent brand.	a. Identify opportunities for online services (internal and external) that replace key manual processes. b. Consolidate design principles across DFAT platforms and align with Government portals. c. Incorporate 'responsive' or 'mobile' design and metrics as pre-requisites for web services. d. Implement design principles methodology on all new projects.			Strengthen the Department's brand, improved customer services and meeting compliance obligations.	
1.2 Develop a single customer interface supported by MyGovID and integrated with internal and external (government) information systems.	a. Engage with Dept. Social Protection to carry out a proof of concept exercise. On completion, build the MyGovID integration infrastructure. Assess current services for integration readiness and ensure target operating model includes MyGovID capacity for new services. b. Migrate existing services (e.g. online passports) to the MyGovID service. c. Integrate future systems with the MyGovID service taking on board any service improvements.			Secure, single point of contact for customers. Systems built in line with central Government ICT strategy	
1.3 Deploy a dynamic Contacts Management System that meets the service needs of customers and business units.	a. Consult with Business Units to identify requirements and carry out procurement exercise. b. Carry out installation and design exercise involving multiple stakeholders to ensure needs are met. Train support staff. c. Roll-out solution to Business Units and ensure new business systems developed are compatible and integrated with the CRM solution. d. Phase out redundant customer service channels.			Centralised and streamlined customer/contacts management, improved customer service, enhanced communication, greater efficiency and improved analytical data/reporting capabilities	
1.4 Enhance the effectiveness and integrity of the Passport and Consular Management Systems to meet the needs of service users.	a. Provide input and support to procurement exercise. b. Install new solution ensuring design and installation standards and principles are adhered to. c. Support and maintain new systems.			Improved customer services and an integrated service delivering a citizen focused, efficient and consistent service while maintaining the integrity of the Irish passport.	

Goal (2)	Promoting seamless collaboration				
Co-Leaders	ICT / Business Partnership				
Priorities	Actions	18-19	19-20	Benefits	People
2.1 Exploit the potential of collaborative workspaces and platforms that operate effectively internally/externally including across government	a. Analyse existing build to share catalogue to identify opportunities and engage business units and carry out a needs analysis. b. Begin development of platform(s), carry out procurement exercise if required. c. Migrate existing systems (websites, FMS) to central government provided platforms.			Enhanced internal and external collaboration and access to information	
2.2 Meet the evolving needs of internal users and external partners by implementing an updated data classification policy supported by appropriate tools.	a. Agree on data classification levels and develop classification policy and associated information handling guidelines. Determine technology requirements to support policy. b. Carry out procurement exercise and deploy data classification technology. Classify all current and future information from "Day 1". Launch information campaign to move information from Email. c. Migrate Departments file system to central OGCI0 eDocs solution.			Ensure adequate protection and control of the Department's information, support information security, support risk based decision making on access to external services (e.g. cloud)	
2.3 Enhance collaborative capacity through the adoption of a modern Electronic Records and Documents Management System.	a. Create Electronic Records & Documents Management policy in line with business needs and central government policy. b. Deploy robust systems and technologies to support and maintain policy. Agree and communicate norms and behaviours to staff. c. Assign "Information Manager" for each business unit and create Information Managers Network to support policy and migration to and use of eDocs (Goal 2).			Effective organisation and protection of Departmental information and ensure legal and regulatory compliance	

Goal (3)	Enabling and empowering our people					
Co-Leaders	ICT / Business Partnership					
Priorities	Actions	18-19	19-20	Benefits	People	
3.1 Deliver a remote access user experience that seamlessly replicates the desktop environment.	a. Upgrade central infrastructure to support increased mobility. Identify and test suitable mobile devices. Define requirements of "the mobile worker". b. Deploy new mobile devices with enhanced capabilities including file access and editing capabilities. c. Upgrade remote access services to include improved communication tools e.g. Video Conferencing and Video calling.			Increased mobility, agility and access to information, business continuity and support of eWorking and similar initiatives		
3.2 Drive continuous creativity, innovation and change by strengthening our capability and capacity through the adoption of new technologies.	a. Strengthen the role and functions of the Strategy and Performance Unit (SPU) in terms of driving innovation and change across the Department and its Missions. b. Engage, empower, and enable all managers as principal agents of innovation and change across the Department and its Missions. c. Under the aegis of the SPU, invest in the development of the Senior Management Network (SMN) and a new Middle Management Network (MMN) as the principal means through which key innovations are communicated across the organisation.			Enhanced productivity through improved processes, staff will be aware of and invested in Departmental objectives and strategies and increased staff motivation and creativity		
3.3 Support effective decision-making, policy formulation and information sharing by implementing a data analytics function supported by data analysis skills.	a. Create a data analytics function and recruit relevant specialist(s). b. Carry out system and data audit producing a data architecture. Engage business units to determine data requirements. c. Identify and implement appropriate data analysis platform.			Support management decision making, improved reporting and analysis and support agile business processes		
3.4 Transform the grants process and strengthen our engagement with partners through the delivery of an Integrated online Grants Management System.	a. Liaise with Business Unit to determine and agree system requirements. b. Design, test and install system ensuring development is in line with design principles. c. Integrate system with MyGovID platform.			Improved business process, support grant related decision making, enhanced monitoring, reporting and compliance		

Goal (4)	Investing in the development of our ICT capabilities				
Co-Leaders	ICT / Business Partnership				
Priorities	Actions	18-19	19-20	Benefits	People
4.1 Strengthen strategic ICT leadership and engage champions across the Department and its Missions.	a. Strengthen ICT leadership at the level of the Management Board (to include executive functions associated with the role of Chief Information Officer). b. Review organisational arrangements for ICT (e.g. ICT Unit, KMTF, SPU) and agree optimal distribution of functions for the future. c. Invest in developing the ICT-related capabilities of management and staff throughout the Department and its Missions.			Enhanced strategic leadership, exemplary distribution of ICT functions, improved ICT skills throughout the Department	
4.2 Invest in and re-configure the ICT Unit to better meet business needs.	a. Invest in the development of ICT management team through the provision of focused mentoring support (individually and collectively). b. Reconfigure the Department's ICT resources and capabilities into three distinct clusters (i.e. strategic development, programme delivery, and operations management) ¹ supported by an ICT Control framework. c. Assess capability gaps in each of the three clusters and determine appropriate capability building measures including investment in new hires. d. Assess the Department's technical ICT capabilities, identify key gaps, and determine appropriate capability building measures.			A modern ICT Unit with the technology, tools and skills to support and enhance the Business	
4.3 Enhance the capability and capacity of the Department to deliver ICT-enabled business change programmes.	a. Invest in building the capability and capacity of the Department to shape and deliver large-scale ICT-enabled business change programmes. b. Develop and embed modern programme management practices consistent with the advice offered by OGCIO.			A Department equipped to deliver ICT enabled change programmes	

¹ A modern ICT Unit is generally organised around three distinct clusters including strategic development, programme delivery, and operations management. The ICT leadership team consists of the Head of the ICT Unit and the Heads of the three clusters just noted. Clusters maximise performance through the deployment of multi-disciplinary high-performance teams that combine internal and external resources as appropriate. The strategic development cluster focuses on high-value activities such as ICT governance, ICT strategy and architecture, ICT programme and project management, ICT value management, ICT evaluation, business engagement, business consulting, and business analysis. The programme delivery unit focuses on the design, development, and delivery of major programmes of ICT-enabled business change whilst also advancing a highly integrated approach to both organisational and technological change. The operations management cluster focuses on the delivery of best-in-class ICT operations and infrastructure services within a well-defined ICT service management framework. The reconfiguration of the Department's ICT resources and capabilities should ideally be informed by a modern ICT competency framework such as SFIA

	c. Adopt modern value management practices as a means to fully capture the value (e.g. business, public, social) of ICT investments.				
4.4 Develop a risk based approach to ICT security that effectively manages security requirements and business needs.	a. Review and amend existing Security Policy. Support information classification exercise. Continue to deliver Security Awareness programme. b. Adopt a risk based approach to new systems and services. c. Continuous (annual) review of Security policies.			An adaptive Security posture more aligned to the needs of the Business	

Appendix 9: Peer Review Conference Programme



An Roinn Gnóthaí Eachtracha agus Trádála
Department of Foreign Affairs and Trade

ICT STRATEGY DEVELOPMENT [2018-2022]

PEER REVIEW CONFERENCE

VERSION 1.3

DATE	THEME	FOCUS
04/10/17	1	PROVIDING EXCELLENT PUBLIC SERVICES
05/10/17	2	PROMOTING SEAMLESS COLLABORATION
11/10/17	3	EMPOWERING OUR STAFF
12/10/17	4	DEVELOPING OUR RESOURCES AND CAPABILITIES
15/11/17	-	PEER REVIEW CONFERENCE

1



BRIEFING NOTE

BACKGROUND

Peer review is a recurring activity in high-quality strategy development work where key written outputs are reviewed and critiqued by individuals and groups with similar interests and expertise to those who created such outputs in the first instance. It contributes to the formation of high-quality artefacts which are essential to the development of an effective statement of strategy intended to guide the organisation's development path for the years ahead

WORKING NOTES

The key strategy development outputs to be peer reviewed include the four working notes developed from the thematic workshops on 04/10, 05/10, 11/10 and 12/10. All working notes will be made available electronically at least seven days prior to the Peer Review Conference.

PEER REVIEW TEAMS

Peer review teams will be drawn primarily, but not exclusively, from management and staff across the organisation. The Management Sub-Board on ICT Governance will complement the work of these teams where appropriate. The proposed makeup of peer review teams is 3 outlined in Tables I overleaf.

PEER REVIEW PROCESS

The peer review process is straightforward. It draws on the wisdom, knowledge, skill and expertise of management and staff across the organisation as they offer an invaluable and independent critique of the written outputs created by the multiple teams involved in the strategy development work. The essential elements of the review process include:

- a) The Strategy & Performance Unit forwards the final drafts of working notes to the designated Peer Review Teams one week prior to the Peer Review Conference.
- b) Peer Review Teams execute a desk review of relevant working notes prior to their presentation at the Peer Review Conference.
- c) Ten-minute presentation of each working note at the Peer Review Conference, followed by ten-minute critique by Peer Review Team, followed by forty-minute Group Dialogue.
- d) Peer Review Teams file with the Strategy & Performance Unit annotated copies of relevant working notes along with related Peer Review Summary Reports within two-working days of the close of the Peer Review Conference.

Both the Peer Review Conference and the Peer Review Process are intended to contribute directly to the development of management and staff across the organisation.



TABLE I – PEER REVIEW TEAMS

STRATEGY THEMES	THEMATIC GROUP	PEER REVIEW TEAM
1. PROVIDING EXCELLENT PUBLIC SERVICES	Include three people from workshop session – one leader + two supports – leader to present paper – all three to take <u>questions</u>	Led by a member of the Management Sub-Board on ICT Governance + a member of the PO network + a member of another thematic <u>group</u>
2. PROMOTING SEAMLESS COLLABORATION	Include three people from workshop session – one leader + two supports – leader to present paper – all three to take <u>questions</u>	Led by a member of the Management Sub-Board on ICT Governance + a member of the PO network + a member of another thematic <u>group</u>
3. EMPOWERING OUR STAFF	Include three people from workshop session – one leader + two supports – leader to present paper – all three to take <u>questions</u>	Led by a member of the Management Sub-Board on ICT Governance + a member of the PO network + a member of another thematic <u>group</u>
4. DEVELOPING OUR RESOURCES AND CAPABILITIES	Include three people from workshop session – one leader + two supports – leader to present paper – all three to take <u>questions</u>	Led by a member of the Management Sub-Board on ICT Governance + a member of the PO network + a member of another thematic <u>group</u>

4

PEER REVIEW SUMMARY REPORT

Within two working days of the close of the Peer Review Conference, Peer Review Teams will return to the Strategy & Performance Unit in an annotated copy of the relevant working notes along with a one-page Peer Review Summary Report. The latter should include:

- What is the central thrust of this working note?
- What are its key strengths?
- What areas require further attention?
- Are there any additional matters which should be considered within this thematic area?

In attending to the above, all Peer Review Teams are encouraged to keep in mind that a key hallmark of high-quality working notes is that they intentionally foster a strategic approach to the management of DFAT and its resources and capabilities.

Appendix 10: Peer Review Conference

GA1:
Theme: Customers
Firstly, participants were discussing the notion of ‘customer’ and stated that customers should refer to both external (citizens) and internal (business units) customers. Others have noted that there is a need to understand the customers’ needs to ensure developing effective solutions that suit their demands. For example, one participant noted the “collection of data from customers through feedback and the use of metrics for performance measurement”. In relation, another participant stated that: “in looking at the provision of customer support, we need to look at all the channels of communication with the customer and look at what has and is working, and additionally to look at new opportunities or technologies, while also looking at how the customer want to communicate with us”. Another aspect that drew attention was the integration of customer-facing systems – to ensure proper effectiveness and by reducing overlap and subsequent customer queries. One participant noted that GA1 should focus on delivering a ‘One Stop Shop’ where a single portal is used for all services.
Theme: Passport Systems
As participant of the discuss, and a recent user of the new Passport System himself, noted that the “Passport Reform is working well... and found it very user friendly”. Adding to the praise, another participant noted that the new Passport System as part of the ICT2020 strategy “provides an excellent example of what we do well” where another participant attributed it to ‘strong governance’. Furthermore, the success of the Passport Reform could be used in informing other Department services. One member of the PRC drew “attention to the fact that most traffic to the Department websites related to Passports” and noted that we should understand how we can promote other activities and work through the website as was done with the Passport System. Finally, another comment was made regarding the success, and stated the project was a success with regards to “both the building of systems and teams to support the future workings of the Passport Service and its relationship with its customers”.
Theme: Communication
This theme covered the topic of communicating with external customers – citizens; specifically, the use of ICT to support the communication. One participant in the PRC noted that the UK Government discontinued their ‘citizen portal’ (government-citizen communication tool) and ramped up their Twitter presence – thus questioning the relevance and effectiveness of ‘WebChat’ solutions. Another participant posed the question of whether “WhatsApp [is] an appropriate channel to communicate with the public – [and] how manageable for large volume communication/interaction with public?”. Overall, there seems to be consensus towards developing a communication approach that can successfully and effectively communicate vital information to the citizens. Some have noted that the Government “suffers from a lack of coherence across Departments and organisations (e.g., Tourism Ireland, Enterprise Ireland)” who all utilise their own branding. Thus, the need for a central system for communication may be a vital priority for the development of GA1. Finally, two participants commented “on the increased challenge of communicating with people during times of Emergency/Crisis – particular instance where decision are made to limit data and cellular services in terror attack scenarios”. Social media has been noted as a medium for crisis management and emergency communication.

GA2:
Theme: Collaboration
This aspect of the notes emphasised the theme of collaboration and engagement among business units and the ICT – as well as using ICT to engage in collaboration for projects. The discussion commenced on a positive note that stated that so far in the ICT2020 strategy, collaboration has been successful with evidence of people helping each other. Furthermore, two ICT-SG members have praised the engagement between the ICT Unit and other business units that has led to the success of several ICT project/system implementations. However, general consensus in the discussion also noted the poor use of email as a collaboration medium. It has been commented and agreed on that “the ability to have a collaborative workspace on a Mobile Device is also called out as an essential tool to allow staff to do the task assigned to them”. Many have touted the ‘Build to Share’ platform as a viable option to diverge from purely using email, as a way of engaging across the organisation. Furthermore, the success of ‘HIVE’ as a collaborative tool (from ‘Build to Share’) is being used across agencies and thus allow for inter-agency collaboration. Overall, the motivation for engagement is there – but the PRC outlined the need to effectively utilise ICT to streamline the process and make engagement more efficient.
Theme: Knowledge
This theme encompasses several aspects with regards to knowledge, knowledge retention and transfer, as well as knowledge management systems. A participant comment that characterises the theme as following: “she believed that ‘we’ as a department are knowledgeable, but the question remains to we/can we use this knowledge in a better or more effective way. The suggestion is that there are significant knowledge bases with associated pools of data which are not being levered”. Building on this, some have noted the issue of knowledge transfer. For example, some pose that “Sharing information is key, but how do people share information when they can’t access it, or it is too difficult to access?” while another illustrates “the problem of ‘lost institutional knowledge’ with staff movement is undoubtedly a factor to address – how the knowledge is retained is key challenge for knowledge management”. While some have attributed ‘lost institutional knowledge’ to the constant rotation of staff, others have suggested that it arises due to heavy reliance on emails. Many have noted that emails are still used for the storage of documents and collaboration as opposed to filing and data management systems – which ensure all information can be accessed by all in an effective manner. As one

participant notes: “Mobile Mail is proven to be overly relied upon – and has become a document repository due to number of users you are using mail folders to store documentation. The issue of what constitutes a record is still to be clarified defined, but regardless email is not an appropriate medium for storage”. To overcome this issue, participants have proposed the use of knowledge management systems. However, they state that employees “need to have a unified view of core information relating to the overall business of the Department, as well as more specific data related to their specific Business Units”. Furthermore, a member of the ICT Unit noted that document classification is the sine qua non for successful delivery of future knowledge management system and must be the foundation for project delivery. Finally, the session concluded by reiterating the importance of the last statement and noted “document classification as the first critical step in moving the strategy forward, given it has a crosscut to a large number of items with the 4 goals”.

GA3:

Theme: Employee Empowerment

This theme encapsulates the overarching priority for GA3; which is, to empower the Department’s staff. The technologies being implemented should reflect the needs of the Department’s employees to assist them in conducting their work. While praise has been given with regards to the utilisation of ‘mobile mail’, some still note the “cumbersome nature of the technology that breeds the behaviour of giving up”. Hence, it has been proposed to increase and emphasise the ‘usability’ as the vital priority in a proposed system. The accessibility of email on the mobile devices has been touted as a current success in empowering staff; participants have noted that it contributed significantly to staff’s ability to be ‘mobile’. Another sub-theme identified was the notion of empowering ‘junior managers’ due to them being digital natives – and allowing them to drive the implementation of the ICT strategy by delivering the newest technologies. Here, a bottom-up approach was outlined where the junior managers can also act as agents to change by increasing the adaptability of the new systems.

Theme: Knowledge Management

As shown through the PRC, the topic of KMS is vital in the successful realisation of the ICT2020 strategy. Here, comments primarily addressed the need for a more common electronic filing system, a more effective Document Classification System, as well as the need for an Information Manager and a Knowledge Management Officer. A participant posed the question where there is a need for an Information Manager for each division within the Department – possibly to ensure that all documents are filed and classified. Another noted the “creation of a Knowledge Management Officer, to be tasked with development of a common electronic filing system, with a focus on moving to an effective Document Classification System” – to be tasked with archiving all file content. These ideas put forth suggest certain time constraints where employees are unable to fully commit to the filing and classification scheme that adds and contributes to the overall KMS used for decision making. The central consensus is the need for having an effective KMS that will aid decision making and therefore empower the employees.

Theme: Data Analytics

When all the data is classified and filed within the Knowledge Management System, it can be used for data analysis purposes – which will ultimately improve the capability to make informed decisions. Currently, Department staff have been utilising excel spreadsheets and integrated pivot tables to understand metrics – but some participants in the PRC have been calling for a software solution in offering better analytic capabilities. Another participated noted that “It’s essential to be able to connect the High-Level Objectives with innovation and from the discussion it was clear that Data Analytics were seen as foundational elements of new systems”. However, another noted that “the section and references to data analytics was not found to be clear enough in terms of definition as part of the wider goal”. As such, it seems that while data analytics is a vital requirement for the success of ICT2020 strategy, the use of data analysis as a tool for informing decision making needs to be clarified as how it is aligned with other goal areas and related priorities. It has been proposed that the analysis of the Department’s data can aid the empowerment of staff.

Flexibility, Accessibility and Mobile Working

As discussed in the other goal areas, the need for flexibility and accessibility to promote ‘mobile’ working is imperative for empowering employees. Here, a paradoxical issue arises security vs ease of use. For example, it has been noted that “The use of Remote Access Key Fobs was seen as items that should be reviewed at the earliest opportunity, as the use of FOBs plus poorly responsive devices was seen as delivering a sub-par solution for working while mobile”. Others agree and have noted the need for an integrated mobile solution that can offer all the needs of the workers. This is especially important when empowering staff with the expansion of the Missions, “that the facilities must be in place to support what would essentially be ‘pop up Missions’ with people on the ground before there is a working ‘bricks and mortar’ office”. Overall, the mobility is essential in achieving the central aim of the ICT2020 strategy, to double Ireland’s global footprint.

GA4:
Theme: Security
Security has been touted as being essential for the success of the ICT strategy ensure the successful mitigation of risks associated with implementing new technologies. The heightened need of cyber threats – such as WannaCry and TeslaCrypt – require greater security measures, which have erected barriers with regards to accessibility and usability. The PRC noted the success of the in-house Security Awareness Training by the ICT Unit, noting that “the benefits of this effort to date were not only as an increased and improved awareness and education in the area of cyber threat and ICT security, but also as a means for ICT Unit to get out ‘into the field’ and get feedback from its users – the internal customers”. This has also led to the increased acknowledgement from business units regarding the issue of usability. For example, some ICT Unit members have “acknowledge[d] the pressing need to deliver systems and solutions with mobility as a central focus, noting that the challenge for the ICT Unit also to implement appropriate Security Process which ensured the integrity of both the DFAT network, and the information stored within”. SECTION OMITTED AT THE REQUEST OF DFA Some have been suggested that for some systems (e.g., Email) the Hard approach can be removed due to ‘low risk’ potential whereby other technologies require the more secure approach to verification. That being said, a member of the MB noted that “in terms of challenges presented and areas for opportunity/development – ‘security and usability’ is identified as the primary task for the ICT Unit within the ICT Strategy, and that there is a real need to address this as early as possible under the Action Plan”.
Theme: Resources
Another key challenge presented within the PRC was the notion of resources. As noted by the document, “Immediate concern was drawn to the ability of ICT Unit to resource both the projects to be delivered under the ICT Strategy in addition to ensuring the integrity of the DFAT Network, and also maintaining ‘day to day services’” and “acknowledged that in with its present resources and with the current structures that the ‘capacity to deliver’ was not available”. The debate here falls under two categories: 1) developing in-house capabilities via training current staff as well as via an internship process; and 2) outsourcing. A participant noted that in order to move “forward across a multi-year Strategy and Action Plan” is to focus on “developing internal staff, developing an internship process and adopting a ‘grow your own’ approach to staffing the ICT Unit”. Outsourcing on the other hand, has been promoted as an idea for short-term solution for project-based work as part of the ICT2020 strategy and related Action Plan. These areas need to be considered to ensure an effective implementation.

ICT STRATEGY UPDATE

February 2019

STRATEGY IMPLEMENTATION TEAM

We've Made Contacts!

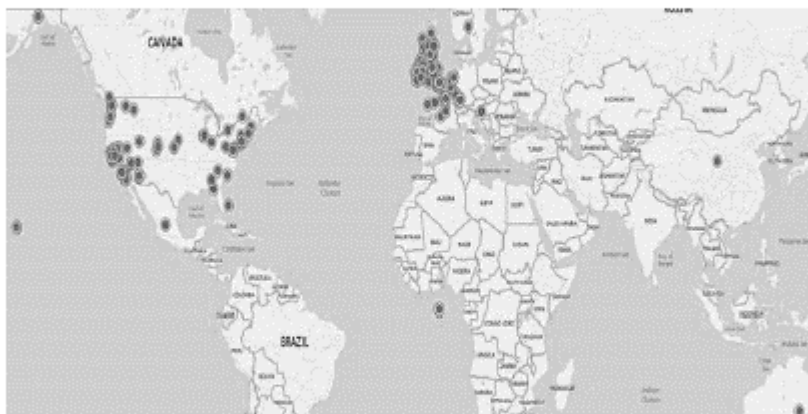
After much anticipation and hard work, in January we launched the Department's first Contacts Management System. First over the line for this pilot system were London, Edinburgh, The Hague, Strasbourg, Paris, San Francisco, and Trade Division and Strategy and Performance Unit at HQ. A Department-wide Project Team led by Strategy and Performance Unit and ICT have partnered with Codec Ltd to design, develop and test the system which will manage our engagement with contacts worldwide. There are already close to 8,000 contacts on the system, which is based on Microsoft Dynamics CRM and customised for the Department's bespoke requirements. When fully rolled out, the Contacts Management solution will be complimented by an Event Management tool. It will allow missions and business units

organise their gatherings, conferences, meetings and cultural events via the well-known ticketing system Eventbrite. This will integrate with our contacts management system, allowing it to automatically generate invitations and record RSVPs, and capture information key to the success of your events. It will eliminate a significant administrative burden for colleagues organising events.

The new contacts system will continue to pilot to selected missions as the team test its procedures and troubleshoot any difficulties. Shortly thereafter they will begin to on-board the rest of our Missions and HQ Divisions later in 2019.

Simply drop an email to the Project Team CRM.Pilot@dfa.ie if you are interested in finding out more about this exciting project.

PRIMARY CONTACT INFO	
First Name *	
Middle Name	--
Last Name *	--
Known As	--
Formerly Known As	--
Title	--
Salutation	--
Post Nominal	--
Primary Email *	--
Primary Phone *	--
Primary Address *	--



Left: Heat Map for the almost 8,000 contacts recorded in the Contacts Management System.

(January 2019)

Our Remote Access Technology is Changing!

One of the main intentions of the ICT Strategy is that we can improve our technology platforms to better collaborate and work smarter. Many will know that we have conducted a successful pilot of an new Windows 10 remote access device. This 'single device' can serve the purpose of laptop and desktop workstation and comes with some very exciting features such as video and telephony integration. It is our intention to widely

deploy the technology in the coming year. This will begin with some business units at HQ but will have a strong focus on missions. The rollout plan has recently been approved by the Management Board and will be guided by our Strategy team. For colleagues in the ICT Unit this will be a big challenge and it is very much hoped to add resources in this area. More details shortly about deployment of this exciting new technology.



Using Technology to Classify our Data

Priority 2.2 of our Strategy highlights the need to protect our data through better standards of classification. This will assist the introduction of new systems and compliance with GDPR. On a practical level we will this year introduce new technology that will ask us to classify our documents as we create them. The technology, which was recently procured by the ICT team,

will ensure that documents with an internal or 'restricted' classification can be kept in the organization and blocked from email circulation. Before any such changes are made we will inform and explain to colleagues how this new system will operate. Classification is part of the wider topic of Records Management which is currently being addressed by Corporate Services.

The Department's Data Classification levels:

- Top Secret
- Secret
- Confidential
- Restricted
- Unrestricted

Most of our data falls into the lower categories with personal information, important under GDPR, generally considered to be Restricted

We need to meet the evolving needs of internal users and external partners by implementing an updated data classification policy supported by appropriate tools.

ICT Strategy Priority 2.2

Grants: The end of the RP2A!

One of the largest and most complex projects underway, the delivery of an online Grants Management System for the Department is a significant undertaking. The work is being sponsored by Finance Unit, and a Project Team led by Strategy and Performance Unit draws together all the business units managing grants across the Department. The new system will transform the

processing of grant and funding applications in the Department. It will provide our partner organisations with an online public portal to submit their applications, and identify when applications have been processed. It will reduce the administrative burden on business units that are managing grants. It will improve management information around the

status of applications, payments made, commitments in future years etc, thus supporting better decision making within the business unit. The pilot is being implemented in the Reconciliation Fund in IUKA and is due to go live date on 19th March. We will keep you updated on the success of the project.

Passports & Foreign Births Registration

We've seen huge improvements in the Passport Service with the various online renewal initiatives and long may it last! The ICT Strategy places a lot of importance on the quality of our digital services to the public. In particular we are keen to integrate the various FBR processes with passport office systems. From January and as part of the Passport Reform Programme, Foreign Birth

Registration moved from Consular Directorate to the Passport Service. To compliment the considerable growth in online passport services, there are big enhancements planned in the backend technology the system uses. On completion this will amount to a complete overhaul of the technology platform since the Passport service was first automated in 2004. 2019 will also see major upgrades in

Customer services with increased capacity across a number of channels including Webchat & telephony.



ONLINE RENEWAL SERVICE
Adults & children can renew online



HIVE A New Way to Collaborate

Ever wanted to exchange documents with colleagues in other departments without constant email attachments? Or to co-author a document? Or even to have an online discussion about a topic of common interest? It can be pretty difficult. The Hive is a collaborative platform for all these purposes. The tool is currently being tested by the Strategy Implementation team along with Department of An Taoiseach. Our aim is

to have this available to everyone in the Department in the coming months. Based on SharePoint technology and hosted by the OGCI, The Hive is a Build-to-Share application for the Civil Service. Delivered on a similar platform to eSubmissions and ePQs, it allows users to create a site of common interest and invite users in other departments to collaborate.

ICT Strategy Outcomes

1. By 2020, we will have significantly enhanced the range of accessible and secure public services..
2. By 2020, our ability to work effectively and collaboratively across boundaries will be enhanced by ICT Systems
3. By 2020, we will have empowered our people to better exploit the innovative potential of new technologies.
4. By 2020, we will have transformed our ICT services and capacity to support the achievement of our strategic ambition

ICT Strategy Implementation Team

Contact us

If you would like any more information on the ICT Strategy or indeed would like to make a suggestion, drop us a mail at:

ICTStrategy@dfa.ie