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BUYER-SUPPLIER COLLABORATION:

A SENSEMAKING PERSPECTIVE

A thesis submitted to University of Dublin, Trinity College

for the degree of Doctor of Philosophy

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Trinity College Dublin

November 23rd 2008

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DECLARATION

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SUMMARY:

This thesis provides an empirical investigation of how buyer and supplier teams make sense of collaboration. Specifically, this thesis explores how buyer and supplier parties interpret collaboration and how their interpretations of collaboration evolve over time. In addition, it considers the actions that accompany buyer and supplier parties' interpretations of collaboration and how these actions link to interpretations. Taking a sensemaking making perspective, this thesis considers collaboration as an interpretative process. The forces which mediate the interpretations of collaboration in this buyer and supplier context are also explored. Consistent with the interpretivist approach underpinning this thesis, a process approach is adopted, using a qualitative multiple case study design. A comparative cross-case analysis of four buyer and four supplier teams is undertaken to address the research questions in this study.

This analysis examines sensemaking within these teams illustrating how understanding and acceptance of collaboration can be understood as an interpretative process. This thesis provides an understanding of the actual triggers that influenced team interpretations and actions with respect to collaboration, and of the actual influences that impacted teams' understanding and acceptance of the vision, transition and likely outcomes of collaboration. In addition, this thesis makes explicit the sensemaking processes that these teams engaged in as they made sense of collaboration, and how these varied over time and across the emerging process of collaboration.

The cyclical sensemaking processes in relation to collaboration between these buyer-supplier teams is presented. This allows for an understanding of actual outcomes relative to those planned for and intended by the sensegiving efforts of management and facilitators of collaboration. In addition, it indicates opportunities for management to influence the sense that parties make and limitations upon managerial sensegiving efforts.

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CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter presents the background to this study and introduces the research issues it seeks to explore. In light of these research issues the research questions addressed by this thesis are presented. This chapter is divided into six sections. *Section 1.2* discusses the increasing emphasis on strengthening partnerships between buyer-supplier firms and the importance of collaboration as a strategy for realising the opportunities and benefits of such partnerships. *Section 1.3* considers the decision to pursue a strategy of collaboration in terms of the potential demands it may make on firms and, from a cognitive perspective, the need for parties engaged in the collaborative process to understand the events and circumstances they are experiencing in a way that makes sense to them. Accordingly, this section introduces sensemaking as a lens that provides insights into how parties make sense of new events and circumstances that may arise in pursuing a strategy of collaboration. *Section 1.4* describes the process of sensemaking, with *Section 1.5* introducing sensegiving as a means for management to influence the sense that parties make and the actions they take in response to unfamiliar events and circumstances. It also introduces additional influences that may act upon the sense that parties make, with particular reference to sensemaking in relation to buyer-supplier collaboration. In light of possible challenges and limitations to managerial sensemaking this section discusses the insights that may be derived from deploying a sensemaking perspective to explore parties' evolving interpretations of collaboration, the forces that exert the greatest influence over the sense that parties make, and the links between the evolving interpretations and actions of parties around the process of collaboration. The research questions that guide this thesis are introduced in *Section 1.6* with *Section 1.7* presenting the structure of this thesis and providing the reader with an overview of each of the subsequent chapters in this study. *Section 1.8* concludes this chapter.

1.2 Supply Chain Collaboration

In an effort to keep pace with accelerating change and increasing market pressures the last two decades have seen a surge in inter-organisational arrangements, with firms pursuing

competitive advantage beyond their own boundaries (e.g. Handfield and Nichols, 2002; Eisenhardt and Schoonhoven, 1996; Kamath and Liker, 1994; Hagedorn, 1993; Jarillo, 1988; Miles and Snow, 1986). Supply chain relationships are an example of this phenomenon where a recent trend in some industries e.g. automobile and aerospace is towards manufacturers focusing on reducing the number of their suppliers and towards strengthening relationships with those that remain (Stimpson, 1998; Andersen and Katz, 1998; Bowersox, Closs and Stank, 2003; Kamath and Liker, 1994; Rossetti and Choi, 2005). In certain industries, major players particularly in high-cost, high-risk industries, are moving up the value chain seeing themselves as large system integrators and delegating up to complete responsibility for engineering, programme risk, and inventory control to suppliers, with the emphasis on developing a comprehensive sub-system capability. Manufacturing may be completely outsourced to a variety of manufacturers, with the system integrator or OEM (Original Equipment Manufacturer) responsible perhaps only for design or end-assembly. An example of OEM reliance on suppliers is evident in the aerospace industry with more than 70% of aerospace manufacturing work outsourced (Anselmo, 2004).

Buyer-supplier partnerships represent interdependence between firms in a particular area (s) of activity, characterised by a lessening of adversarial behaviour (Webster, 1992). Such partnerships offer a means for firms to build close working relationships and to leverage each others' skills and competencies (Harland, Lamming and Cousins, 1999; Fine, 1998; Quinn and Hilmer, 1994) towards achieving competitive advantage (Handfield and Nichols, 2002; Nooteboom, 2004; Walter, Ritter and Gemunden, 2001). Shared investment in assets, shared expertise in manufacturing and assembly, and leveraging supplier capacity and flexibility are considered critical aspects of strategic partnerships between buyer and supplier firms (e.g. Morash, Droge and Vickery, 1996; Faulkner, 1995; McLaren, Head and Yuan, 2002; Rossetti and Choi, 2005).

For firms interested in realising the opportunities and benefits of buyer-supplier partnerships, a key question relates to how these firms can come together to integrate activities and work practices successfully (Bowersox et al., 2003). Supply chain and supply chain management literatures have placed considerable emphasis on collaboration as a strategy, enabling firms to work together across organisational boundaries towards achieving competitive advantage (McLaren et al., 2002; Stimpson, 1998; Bowersox et al., 2003; Bowersox and Closs, 1999). Indeed, as Tabibzadeh and Prokopets (2006:36)

recently observed "...in order to unlock the next layer of savings, companies must attack structural and process inefficiencies in supply chain relationships and collaborate with suppliers to improve joint capabilities".

Collaboration within the supply chain is a way for two or more independent companies to "work jointly to plan and execute supply chain operations with greater success than when acting in isolation" (Simatupang and Sridharan, 2002:19). Indeed, some consider collaboration to be the most intense form of inter-organisational relationship for firms to pursue whilst maintaining separate identities (Winer and Ray, 1994; Spekman, Kamauff and Myhr, 1998). Benefits of collaboration cited commonly include risk sharing between firms, gaining access to new markets and technologies, speeding products to market, merging complementary skills or simply optimising overall performance and reducing costs (e.g. Hagedoorn, 1993; Eisenhardt and Schoonhoven, 1996; Laseter, 1998; Handfield and Nichols, 2002; Nooteboom, 2004).

Trent (2005) outlines eight factors influencing the increasing importance of pursuing a strategy of collaboration between buyer and supplier firms. These factors are summarised as follows:

- Relentless pressure to improve
- Reliance on fewer suppliers
- Importance of early supplier involvement in new product development
- Higher-level outsourcing with responsibility for entire supply chain activities given to suppliers
- Pressure on suppliers to become a full product-service provider
- Supply market constraints with an emerging focus on 'preferred customer and supplier status' in some industries
- Competing supply chains
- Fear of competitive disadvantage

The decision to pursue a strategy of collaboration with supply chain partners may however prove a challenging endeavor. As is evident from research on collaboration, the emergence of a successful collaborative working agenda has proven challenging for firms (Liedtka, 1996; Ball, 1999; Huxham and Vangen, 2004, 2005) with supply chain collaboration no exception to this observation (e.g. Dacin, Hitt and Levitas, 1997; Kahn,

1996; Boddy, MacBeth and Wagner, 2000; Bowersox et al., 2003) Indeed, recommendations for managers in pursuit of collaborative advantage emphasise giving serious consideration to the time, effort, costs, and resources necessary for collaboration (Handfield and Nichols, 2002). Whilst these concerns are recognised, Wilding and Humphries (2006:316) conclude that "despite the challenges, it is possible for collaborative enterprise to bring operational advantages in the longer term as the partners become more effective as they develop through prior experience and active management of the learning process". In light of the emphasis on strengthening partnerships between buyer-supplier firms, and the role of collaboration as a strategy for realising the opportunities and benefits of such partnerships, the following section considers the decision to pursue a strategy of collaboration.

1.3 Pursuing a Strategy of Collaboration

The decision to collaborate with existing supply chain partners in pursuit of competitive advantage may suggest both changes in the goals that firm pursue and changes in the ways that firms work together to achieve these goals. Liedtka (1996:33) describes efforts to realise the strategic benefits of collaborative partnering as requiring "a transformation at both corporate and field levels"...whereby "the capability for collaboration develops as part of a new way of managing and designing organizations". Collaboration is about firms forming a "mutually beneficial relationship...to achieve results they are more likely to achieve together than alone" (Winer and Ray, 1994:24). Kahn (1996:139) describes collaboration goals as "collective goals" which firms work together to achieve. Similarly Mattessich, Murray-Close and Monsey (2001) discuss collaboration as focusing upon mutually beneficial, shared goals between firms, with these goals not overlapping too closely with those of any one firm as disadvantages the other (Pitt, 1998). Examples of these goals pursued in the context of strategic buyer-supplier partnerships may include gaining access to new markets, gaining access to new product/process technologies for mutual benefit, sharing investment in assets, sharing expertise in manufacturing and assembly, and leveraging supplier capacity and flexibility for mutual benefit (e.g. Stimpson, 1998; Narus and Anderson, 1996; Bowersox and Closs, 1999; Simatupang and Sridharan, 2002).

The goals of collaboration are in turn achieved through the way that firms work together (e.g. Dacin et al., 1997; Haskins, Liedtka and Rosenblum, 1998; Kahn, 1996; Bowersox et

al., 2003). Leidtka (1996:24) discusses the emergence of collaboration in terms of the emergence of "a partnering skillset, a partnering mindset and through a supportive context...to facilitate collaboration". An extensive body of literature exists exploring this skillset, mindset, and range of factors which define a supportive context for collaboration and influence collaboration success. Such factors relate to, for example, the environment, membership characteristics, process and structure, communication, purpose, and resources for collaboration (e.g. Mattessich et al., 2001; Lane and Bachman, 1998; Huxham and Vangen, 2005).

Achieving collaboration goals through the emergence of a partnering skillset, mindset and through success factors for collaboration therefore suggests changes in how firms may work together. In practice, firms pursuing a strategy of collaboration may pursue different goals from those they may have previously sought to achieve with supply chain partners (e.g. Simutupang and Sridharan, 2002; Kahn, 1996) and experience changes in the ways they may have worked with these partners to achieve these goals (Dacin et al., 1997; McLaren et al., 2002; Haskins et al., 1998; Kahn, 1996; Bowersox et al., 2003). Collaboration may confront parties with the need to let go of existing ways of thinking and working as necessary to embrace the skillset, mindset, and any additional factors that may influence the success of this strategy. Indeed, with respect to pursuing a strategy of collaboration, Liedtka (1996:24) observes that "this kind of partnering cannot be grafted onto yesterday's ways of thinking and behaving".

From a cognitive perspective, a change in strategy depends not alone on the ability of the organisation to execute content and process changes (Ginsberg, 1988), but upon the understanding and acceptance by members, of the new or revised conceptualisation (Smircich, 1983). As Gioia and Chittipedi (1991:434) conclude, "Organisation members...need to understand any change in a way that 'makes sense' or fits into some revised interpretative scheme or system of meaning (Bartunek, 1984; Ranson, Hinings and Greenwood, 1980)". This search for sense or 'sensemaking' is considered "a search for meaning as a way to deal with uncertainty" (Weick, Sutcliffe and Obstfeld, 2005:414).

From a cognitive perspective, pursuing a strategy of collaboration therefore suggests the need for organisation members experiencing content and process changes to understand these in a way that makes sense to them. When individuals are confronted by change they may be faced with unfamiliar events and circumstances (Louis and Sutton 1991; Barr,

1998). Literature on organisational change discusses unfamiliar events and circumstances as potentially creating a discontinuity in the flow of experiences engaging the people and activities of an organisation (Barr, 1998; Weick, 1995; Louis and Sutton 1991). Such situations of uncertainty may arise under a variety of conditions ranging from dramatic loss through to mundane and unfamiliar contexts as relate to managing any kind of project (Weick et al., 2005). Additionally, a request to notice differences and to think about something in a new way provides deliberate initiative to begin sensemaking. In circumstances where parties encounter events and choices, which they cannot account for in terms of existing mental models or interpretative schemes, they start to act in what is considered a more 'conscious sensemaking mode' as enables them to make sense of what is going on around them (Brown 2000; Johnson, Smith and Codling, 2000; Weick, 1995). In this mode, parties may need to update their beliefs, including identifying and interpreting unfamiliar events and action alternatives, and reinterpreting familiar issues and concepts to more closely align their belief systems with the demands of their environments (Isabella, 1990; Barr, 1998; Griffith, 1999). The following section discusses this process of sensemaking in further detail.

1.4 Sensemaking and Strategic Change

The search for 'sense' may arise from a variety of situations which feel different or unfamiliar for example, discrepancy (Orlikowski and Gash, 1994), breakdown (Patriotta, 2003), surprise (Louis, 1980), opportunity (Dutton, 1993) and interruption (Mandler, 1984), thereby triggering sensemaking. These are described as examples of events and circumstances where "ongoing organized collective action becomes disorganized and efforts are made to construct a plausible sense of what is happening, and this sense of plausibility normalizes the breach, restores the expectation and enables projects to continue" (Weick et al., 2005:414).

In general terms organisational change is considered to revolve around attempts to alter current ways of thinking and acting (Anderson and Paine 1975; Daft and Weick 1984). When a change is initiated, existing patterns of thinking may be disrupted, thus resulting in a period of uncertainty (Quinn and Anderson, 1984). In turn, making sense of change revolves around the interplay between existing patterns of thinking and acting and new patterns of thinking and acting, triggered by change. Research linking change and sensemaking (e.g. Isabella 1990; Gioia and Chittipeddi 1991; Gioia et al., 1994; Gioia and

Thomas 1996) is based on the premise that, to achieve change, it is necessary for a change to occur in organisational interpretive schemes (Bartunek 1984; Ranson et al., 1980).

Interpretative schemes are defined as "fundamental shared assumptions that determine the way that members of an organisation currently conceive of their organisation and their environmental context, and how they act in different situations" (Balogun and Johnson, 2005:1575). Sensemaking therefore involves interpretation in conjunction with action (Thomas, Clark and Gioia, 1993) whereby accessing interpretations and actions reveals the meaning or 'sense' that parties have made of a change process. "In this stream of research, interpretation is defined, not as imposing structure, but as translating events and developing frameworks for understanding (Daft and Weick, 1984)...threading through the understanding of a particular situation" (Isabella, 1990:9). In turn, as these 'events' of change unfold, different interpretations may emerge as the frame of reference - the perspective through which people view an event - shifts (Isabella, 1990; Starbuck, 1976). As new interpretations and actions arise, these become the basis for subsequent sensemaking (Barley and Tolbert, 1997). Sensemaking is therefore described as an ongoing, cyclical process, which individuals may engage in until they return to a less conscious sensemaking model (Weick, 1995).

Individuals typically make sense by engaging with others. This engagement is where "individual representations (thoughts, feelings, 'intentions') become merged or synthesized ... into face-to-face conversations and interactions" (Wiley 1988:258). Sensemaking is thus described primarily as a communicative, social-interactive process (Barrett, Thomas and Hocever, 1995; Tsoukas and Chia, 2002) around "conversational and social practices" (Gephart 1993:1469). Conversational and social practices (Brown 2000; Gephart 1993, 1997) may include a variety of communication genre (Watson and Bargiela-Chiappini, 1998) both verbal and non-verbal, and formal and informal (Gioia and Chittipeddi 1991; Gioia et al., 1994; Weick 1995) where change comes about through conversations and interactions (Wiley, 1988; Brown and Humphreys, 2003; Heracleous and Barrett, 2001). For example stories, gossip, rumors and past experiences, in addition to non-verbal signs and signals like behaviours and actions, are all considered to infer and 'give meaning' (Isabella 1990; Gioia and Chittipeddi 1991; Gioia et al., 1994; Gioia and Thomas 1996; Poole and Van de Ven, 1989; Labianca, Gray and Brass, 2000). Engaging in these social processes, change comes about through conversations and language (Barrett et al. 1995; Brown and Humphreys 2003; Ford and Ford 1995; Heracleous and Barrett 2001) whereby

parties arrive at interpretations which more closely align their belief systems with the demands of their environments (Isabella, 1990; Barr, 1998; Griffith, 1999).

1.5 Sensemaking and Sensegiving

Literature linking strategy and sensemaking emphasises the need for those concerned with facilitating understanding and acceptance of a new strategy to manage the sensemaking of the parties involved. Facilitating understanding and acceptance of change is considered central to legitimising the vision, transition process, and likely outcomes of change for the parties involved (Gioia et al., 1994; Langley, 1989; Quinn, 1980). Research on strategic change and sensemaking has identified management as having a key influence on the sensemaking of others helping to legitimise the need for, and the intended nature of, the impending change through the process of 'sensegiving' (Smircich and Morgan, 1982; Quinn, 1980; Langley, 1989; Gioia et al., 1994). Sensegiving refers to "attempting to influence the sensemaking and meaning construction of others toward a preferred redefinition of organizational reality" (Gioia and Chittipeddi, 1991:442). Sensegiving is therefore considered a central part of effecting change in organisations (Gioia and Chittipeddi, 1991; Bartunek et al., 1999; Corley and Gioia, 2004; Dunford and Jones, 2000; Gioia and Thomas, 1996) in which actors influence each other (Dunford and Jones, 2000; Snell, 2002). Sensegiving is used both by organisational leaders (Bartunek et al., 1999; Corley and Gioia, 2004; Gioia and Chittipeddi, 1991) and other stakeholders such as middle managers (Balogun, 2003; Westley, 1990) and employees (Maitlis, 2005). Symbols, metaphors, and symbolic action are examples of means used by management to influence the sensemaking of others with respect to change in organisations (Langley, 1989; Gioia et al., 1994).

Although managerial sensegiving may be central to affecting change, it may be impacted by a variety of competing influences on parties' sensemaking. Such challenges to managerial sensegiving are considered in the following section.

1.5.1 Challenges to Managerial Sensegiving

Literature on organisational change recognises that those engaged centrally in the implementation of a process involving new ways of thinking and acting are both recipients of, and deployers of, these new ways of thinking and acting (Fenton-O'Creevy 1998; Floyd

and Wooldridge 1997). As a result they may construct their own sense of events and happenings through their own sensemaking processes rather than necessarily accepting management's 'version' of things. This emphasis on recipient interpretations and meaning with respect to strategic change recognises people as agents who construct their work environment (e.g. Brown, 1998; Tsoukas and Chia, 2002), and influence the emerging outcomes of change (Isabella, 1990; Gioia et al., 1994; Balogun and Johnson, 2004). In turn, this recognises that management's ability to develop and disseminate a vision of the intended strategy and to influence understanding and acceptance of this vision, the transition towards change, and the likely outcomes of change may be limited.

A further challenge relates to the potential for divergence across organisational levels in views, understanding, and interpretations of strategic change events (e.g. Balogun, Huff and Johnson, 2003; Johnson, Melin and Whittington, 2003). For example, the potential for a gap to arise between the understanding around decisions and agreements made at top management level and understanding around these at the operational level may impact management sensegiving. As Weick, Sutcliffe and Obstfeld, (2005:416) conclude "what is plausible for one group, such as managers, often proves implausible for another group such as employees".

Along with symbols, metaphors, and actions as influences on sensemaking, influences may also arise from the context in which sensemaking occurs. These influences may be drawn from frameworks such as institutional constraints, existing organisational plans and expectations, strategies in use, acceptable justifications and traditions (Labianca et al., 2000; Gioia and Chittipedi, 1991; Gioia et al., 1994), beliefs, perceptions, politics (Staw, 1980) and the outcomes of prior actions and performance (Milliken and Lant, 1991). In addition, influence relationships and political structures may act as influences whereby "people take into consideration the realized, or likely outcomes, of their own actions or those of other significant stakeholders, in trying to understand what to do next" (Gioia et al., 1994:365). Indeed, given that "change efforts seldom happen by decree but often hinge on consensus-building, a round of negotiated social construction is likely" (Gioia and Chittipeddi, 1991:434). There is also the possibility of some sources or actors having a more powerful an influence than others (Ranson et al., 1980; Riley, 1983). Although the influence of such relationships and political structures may be subtle, a strategic change event may act as an occasion where influence is more visible (Gioia et al., 1994; Pfeffer, 1981). With respect to the cyclical process of sensemaking, influences may also arise from

the emerging context as existing influences evolve or new influences emerge from the events, circumstances, plans, actions, and relationships of the emerging context.

Such a variety of possible influences on the sensemaking of organisational members suggests limitations to managerial sensegiving. This is similarly likely to be the case for those concerned with influencing sensemaking with respect to the understanding and acceptance of the vision, transition, and likely outcomes of pursuing a strategy of collaboration. As discussed in Section 1.3, as part of engaging in the process of collaboration, parties are likely to encounter changes with respect to their ways of thinking and working with partner firms, with an accompanying need to understand these changes that arise in a way that makes sense. Recognising the parties experiencing these events and circumstances as 'agents', suggests they may construct 'their own sense' of the vision, transition, and likely outcomes of collaboration. This in turn may influence understanding and acceptance of collaboration by organisational members, in addition to influencing their efforts to reconstruct aspects of their relationship as collaborative. As the process of collaboration unfolds, the sense that parties make is in turn likely to evolve, with evolving interpretations and actions becoming the basis for subsequent sensemaking. Accordingly, the initial and / or evolving sense that parties make of the vision, transition and likely outcomes of collaboration may vary from those desired and intended by management, and indeed may prove unconstructive or even detrimental to the understanding and acceptance of collaboration by the parties involved in the process.

In addition, the inter-organisational context, as represented by buyer-supplier collaboration, suggests a likely source of influence on the sensemaking of parties as they engage in and experience, for example, shared events and circumstances, communication, and social interaction processes with collaborating parties. Working across organisational boundaries, with the potential for differences in cultures, procedures, languages, power, roles, and responsibilities may negatively influence the success of a collaborative partnership (Lorange and Roos, 1991; Olson and Singsuwan, 1997). These influences may include "negative attitudes, lack of understanding...philosophical differences, different organisational styles....and differences in community norms" (Mattessich et al., 2001:33).

Furthermore, whilst the pursuit of competitive advantage may reflect corporate level ambitions this does not, necessarily, reflect the ambitions of those 'in the field' nor guarantee their willingness to transform their ways of working to embrace a collaborative

way of working with the supply chain partner. For example, managers may be confronted with the need to facilitate understanding and acceptance of collaboration with those who do not wish to engage in this process; may be required to negotiate and agree collaborative aims and objectives with those who do not have any; or may be trying to discuss collaboration concerns with those who do not wish to raise such concerns. Managers need to consider the possibility that participants are initially hesitant or do not wish to engage with the process, may resist new ways of thinking and working or may give preference to old ways over new, unfamiliar ways. Indeed, as Liedtka (1996:23) observes, "Like other fundamental shifts in management thinking effective collaboration is difficult to achieve in a climate of business as usual as it relies on qualities not present...and calls upon skills that have rarely been rewarded in most organizations".

In light of such complexities, the sensegiving efforts of management to legitimise collaboration and to influence understanding and acceptance of the vision, transition and likely outcomes of collaboration may be impeded. As a result, interpretations and actions that arise from parties' sensemaking with respect to collaboration may vary from those intended by management or from those conducive to the emergence of a collaborative approach to working. For those concerned with influencing sensemaking with respect to collaboration, understanding how those parties engaged in collaboration make sense of it; how to influence parties sensemaking; and how to manage additional influences on parties' sensemaking with respect to events and circumstances that trigger sensemaking processes are central concerns. The research questions that seek to address these concerns are discussed in the following section.

1.6 Research Questions

As described in the preceding section, sensemaking involves interpretation in conjunction with action, whereby accessing interpretations and actions reveals the meaning or 'sense' that parties have made of a change process. Exploring evolving interpretations and actions, and how these are mediated by influences, are central to understanding how and why a change process, including its intended and unintended outcomes, evolves (Barr, 1998; Smircich and Morgan, 1982). Accordingly, recognising those engaged centrally in collaboration as agents who may construct their own sense of the events and circumstances of collaboration, in addition to the variety of possible influences on their sensemaking, suggests the need to explore these interpretations and actions, and to focus on how these

evolve. Consistent with an interpretative approach to the study of organisations, this study therefore takes a sensemaking approach to explore how buyer-supplier parties make sense of a strategy of collaboration. The sensemaking approach focuses on the evolving interpretations of these buyer and supplier parties, how their interpretations evolve in terms of the forces that exert the greatest influence, and how their interpretations link to actions, thereby providing insights into how and why parties act as they do (Brown and Humphreys 2003; Barr, 1998; Isabella 1990; Labianca et al., 2000).

Knowing the sense that parties make, and knowing what influences the interpretations and actions that result, can provide management with direction in terms of helping parties make sense of this process. For example insights into what influences understanding and acceptance of new events, circumstances, and realities of collaboration, and what triggers should be leveraged or counteracted in terms of their respective influence, can provide insights for the 'sensegiving' efforts of management. Indeed, from a cognitive perspective to understand and manage strategic change it is considered necessary to examine symbolism, sensemaking and influence processes that serve to create and legitimate the meaning of change (Dutton and Duncan, 1987; Gioia et al., 1994). Such understanding may in turn provide insights and direction for those concerned with promoting understanding and acceptance of new ways of thinking and working with a partner firm in line with the vision, transition and likely outcomes of collaboration that management seeks to influence.

In light of these research interests, the following research questions are posed:

Research Questions:

Q1. How do buyer and supplier parties interpret collaboration and how do their interpretations of collaboration evolve over time?

Q2. What actions accompany buyer and supplier parties' interpretations of collaboration and how are these actions linked to their interpretations?

These research questions seek to explore how buyer and supplier parties make sense of collaboration to provide insights for those concerned with managing and influencing this process towards the understanding and acceptance by the parties involved of the vision, transition and likely outcomes of collaboration.

1.7 Overview of the Thesis

Chapter Two of this thesis will identify and review literature relevant to the exploration of the research questions posed by this study. In particular, supply chain relationships are discussed, followed by collaboration, sensemaking and sensegiving. The contributions and limitations of these literatures will be discussed with respect to the research questions. *Chapter Three* presents the conceptual framework that will guide the exploration of sensemaking with respect to the process of collaboration. *Chapter Four* will present the research design of this thesis including an overview of the research plan that this thesis will use. It will describe the research approaches, methods and techniques used in this thesis as well as the empirical setting including case selection. *Chapter Five* will present the data collected from the empirical investigation of four buyer-supplier cases. Each case will be introduced and analysed using the conceptual framework developed in Chapter Three. *Chapter Six* will address each of the research questions in this study using cross-case analysis to explore the evolving interpretations, actions, and sensemaking influences underpinning the emerging process of collaboration between buyer and supplier parties in this study. Finally, *Chapter Seven* will conclude this thesis evaluating the research results by discussing the theoretical and empirical implications and contributions of the thesis within the given boundaries of the research. Opportunities for future research will also be explored.

1.8 Conclusion

This chapter presented the background and introduced the research interests of this study in addition to the research questions it seeks to address. *Section 1.1* provided a brief overview of the structure of this chapter and its sections. *Section 1.2* discussed the increasing emphasis on strengthening partnerships between buyer-supplier firms and the importance of collaboration as a strategy for realising the opportunities and benefits of such partnerships. *Section 1.3* considered the decision to pursue a strategy of collaboration in terms of the potential demands it may make on firms and, from a cognitive perspective, the need for parties engaged in this change process to understand unfamiliar events and circumstances they are experiencing in a way that makes sense to them. Accordingly, it introduced sensemaking as a lens that provides insights into how parties make sense of new events and circumstances that may arise in pursuing a strategy of collaboration. *Section 1.4* described the process of sensemaking with *Section 1.5* introducing sensegiving as a means for management to influence the sense that parties make and the actions they

take in response to unfamiliar events and circumstances. It also introduced additional influences that may act upon the sense that parties make, with particular reference to sensemaking with respect to buyer-supplier collaboration. In light of possible challenges and limitations to managerial sensemaking this section discussed the insights that may be derived from deploying a sensemaking perspective to explore parties' evolving interpretations of collaboration, the forces that exert the greatest influence over the sense that parties make, and the links between the evolving interpretations and actions of parties around the process of collaboration. The research questions that guide this thesis were introduced in *Section 1.6* with *Section 1.7* presenting the structure of this thesis and providing the reader with an overview of each of the subsequent chapters in this study.

Chapter Two will review and analyse the extant literature in the relevant areas of supply chain relationships, collaboration, sensemaking and sensegiving as they relate to the research questions posed in this chapter.

CHAPTER 2: SENSEMAKING AND COLLABORATION IN THE SUPPLY CHAIN CONTEXT

2.1 Introduction

This chapter presents a review and analysis of extant literature in the relevant areas of supply chain relationships, collaboration and sensemaking. In light of this review, research gaps are identified which highlight limitations of extant literature with respect to facilitating buyer and supplier parties understanding and acceptance of collaboration as a way of working. This chapter is divided into nine sections. *Section 2.2* discusses the importance of strengthening buyer-supplier partnerships as a way for firms to achieve competitive advantage in the supply chain and introduces collaboration as a means for firms to realise these ambitions. *Section 2.3* considers the concept of collaboration and begins to explore what may be involved in this way of working, as distinct from other forms of interaction, for firms interested in pursuing a strategy of collaboration. In an effort to further explore the transition towards a collaborative way of working for firms, *Section 2.4* considers the nature of collaboration goals with *Section 2.5* presenting a discussion of what is considered necessary for firms to collaborate successfully to achieve collaboration goals. *Section 2.6* introduces the sensemaking perspective within this study, with *Section 2.7* discussing sensemaking in relation to collaboration in the buyer-supplier context. *Section 2.8* considers the limitations of existing studies and considers research linking sensemaking and change with respect to pursing the research objectives of this study. *Section 2.9* introduces the research questions considered in this study with *Section 2.10* concluding this chapter.

2.2 The Supply Chain

Chapter One described the focus of this study as buyer-supplier partnerships, collaborating as a means to enhance supply chain performance. The supply chain can be viewed as the composition of a sequence of business processes and activities (Christopher, 1992) that, when joined together, transform inputs into outputs. It refers to a partnership or network of interconnected businesses (Ellram and Hendrick, 1995) sharing a common goal of delivering a set of goods or services to an end customer. Members of a network of interconnected businesses may include the Original Equipment Manufacturer (OEM) in

addition to suppliers. This in turn may include both upstream and downstream suppliers of components and finished parts, therefore involving suppliers and customers operating like an organised network. Suppliers may also come from different supply tiers. Helper's (1991) Supply Pyramid illustrates different supply tiers, from main suppliers through to specialised and non-specialised suppliers, as indicated in Figure 2.1.

Figure 2.1 Supply Pyramid

Source: Adapted from Helper (1991)

Helper (1991) suggests that the buyer, at the OEM level, concentrates on direct relations with a limited number of 'main suppliers' from the tier below. These main suppliers often have to satisfy special demands in terms of specific investments and technologies (e.g. in the automobile industry this involves the supply of entire subsystems in which elements from lower tiers are integrated and combined with additional value-added services). As a result they are awarded a longer-term contract and support from the buying firm (Helper, 1991). On the second tier are supply firms that provide special products and technical competencies, while the lowest tier represents suppliers without special competencies, which are often used for the supply of standardised goods or services. In the lower tiers, supply firms will usually have multiple customers without dedicated investments to lock them into one buying firm (Helper, 1991). A key concern in managing the supply chain is managing the coordination of linkages across firms for long-term performance of the supply chain as a whole (Mentzer et al., 2001). For example, firms concentrating on direct relations with a limited number of 'main suppliers' from the tier below need to identify the level of integration that they wish to establish with these suppliers, and the related amount of resources to be dedicated to these relationships (Lambert and Emmelhainz, 1999).

As discussed in Chapter One, strengthening relationships with key suppliers is seen as a means of achieving competitive advantage (e.g. McLaren et al., 2002; Anselmo, 2004;

Rossetti and Choi, 2005; Kamp, 2003; Nooteboom, 2004; Andersen and Katz, 1998; Stimpson, 1998). The strengthening of relationships between buyers and suppliers has seen a shift in emphasis from strictly price and quality of the supplied product to additional demands, for example technological capability, flexibility and innovative capacity, and towards stable, long-term relationships (Kamath and Liker, 1994; Rossetti and Choi, 2005). Where firms are focused on achieving competitive advantage through buyer-supplier relationships there is a need to consider means to integrate activities and work practices successfully to realise opportunities and benefits (Bowersox, Closs and Stank, 2003). Chapter One discussed collaboration as a way for firms to work together to improve supply chain performance (e.g. Wilding and Humphries, 2006; Tabibzadeh and Prokopets, 2006) and achieve competitive advantage (e.g. McLaren et al., 2002; Bowersox et al., 2003). The concept of collaboration is discussed in the following section.

2.3 Collaboration

Bowersox et al., (2003:21) define collaboration in terms of two or more organisations voluntarily agreeing to integrate resources "in an effort to create a new, more efficient, and effective or relevant business model". Another definition describes collaboration as the common search for synergies, goals, and joint efforts, which build on a shared vision and mutual understanding amongst participants (Kahn, 1996). Chopra and Meindl (2004) use the term co-identification to describe what they consider the ideal goals of collaboration. Co-identification refers to each party considering the other party's objectives as their own, and showing commitment and willingness to work with the other party toward achieving collectively agreed aims. As a way of firms working together in a supply chain context, Simatupang and Sridharan (2002:16) define collaboration as "two or more independent companies working jointly to plan and execute supply chain operations with greater success than when acting in isolation". Such operations and activities may include, for example, manufacturing, procurement, product development, joint planning, and the shared management and execution of activities (e.g. Anthony, 2000; Kopczak and Johnson, 2003; Kahn, 1996; Nootboom 2004).

As discussed in Section 1.2, collaboration is considered perhaps the most intense form of inter-organisational relationship whilst both firms maintain separate identities (Winer and Ray, 1994; Spekman et al., 1998). In an effort to distinguish collaboration from other levels of interaction Winer and Ray (1994) contrast the intensity of collaboration with

cooperation and coordination as alternative levels of interaction between firms. They describe *cooperation* in terms of firms working together on short-term or relatively uncomplicated tasks without a clearly defined mission, structure, or planning efforts. In this type of interaction firms tend to share information only about the subject at hand (Winer and Ray, 1994). *Co-ordination* is considered to be the next level of intensity whereby both workflow and information are exchanged and perhaps technical systems (e.g. Electronic Data Interchange) and other integration mechanisms (e.g. Just-in-Time) are aligned to enhance traditional linkages between and among trading parties (Spekman et al., 1998). Interaction between firms is therefore longer-term in focus, involving planning, open communication and the division of roles, although firms typically keep their resources separate (Winer and Ray, 1994; Spekman et al., 1998). Finally, *collaboration* is considered the most intense level of interaction revolving around, for example, shared vision and purpose, communication, collaboration structures and processes, environment and shared resources (Mattessich et al., 2001). Additionally it is considered to require levels of trust and commitment that are beyond those typically found in cooperation and coordination (Spekman et al., 1998).

A number of other studies approach the conceptualisation of collaboration by distinguishing it from other forms of inter-organisational interaction. Peterson (1991) proposes three states of what are referred to as 'agency interaction' - *cooperation, coordination* and *collaboration.* These states are differentiated based upon the degree of member autonomy associated with each. Bailey and Koney (2000) offer a similar model with four steps - *cooperation, coordination, collaboration,* and *coadunation.* Their final stage of 'coadunation' represents total integration or what they call complete unification with firms having grown together. Hogue's (1993) model presents five interaction levels or 'linkages' between firms including *networking, cooperation* or *alliance, coordination* or *partnership, coalition,* and *collaboration.* In an effort to explore the characteristics of the different levels, and to distinguish the activities, conditions, and work practices at each level, Hogue (1993) offers an extension to this model, characterising each level in terms of *purpose, structure* and *process.* Table 2.1 presents the characteristics of each of these levels.

Table 2.1 Characteristics of Community Linkage Levels (Hogue, 1993:5)

Levels	Purpose	Structure	Process
Networking	Dialogue and common understanding Clearinghouse for information Create base of support	Non-hierarchical Loose/flexible links Roles loosely defined Communication is primary link among members	Low key leadership Minimal decision making Little conflict Informal communication
Cooperation or Alliance	Match needs and provide coordination Limit duplication of services Ensure tasks are done	Central body of people as communication hub Semi-formal links Roles somewhat defined Links are advisory Little or no new financial resources	Facilitative leaders Complex decision making Some conflict Formal communication within the central group
Coordination or Partnership	Share resources to address common issues Merge resource base to create something new	Central body of people consists of decision makers Roles defined Links formalized Group leverages/raises money	Autonomous leadership but focus is on issue Group decision making in central and subgroups Communication is frequent and clear
Coalition	Share ideas and be willing to pull resources from existing systems Develop commitment for a minimum of three years	All members involved in decision making Roles and time defined Links formal with written agreement Group develops new resources and joint budget	Shared leadership Decision making formal with all members Communication is common and prioritized
Collaboration	Accomplish shared vision and impact benchmarks Build interdependent system to address issues and opportunities	Consensus used in shared decision making Roles, time and evaluation formalized Links are formal and written in work assignments Resources and joint budgets are developed	Leadership high, trust level high, productivity high Ideas and decisions equally shared Highly developed communication systems

Although these models differ with respect to the number and the definitions of the various stages or levels they present, a common focus of these models is on defining and distinguishing collaboration (in terms of its intensity) from other levels of interaction. In addition, the models by Bailey and Koney (2000) and Hogue (1993) present the levels of interaction as *stages* through which parties may pass in moving towards collaboration. Although Peterson's model is however presented as distinct states of interaction among parties, rather than as a strict series of stages, subsequent reviews have suggested this model as also representing stages along a continuum (e.g. Gadja, 2004).

Despite their contributions however, these models offer little sense of the duration of each stage, how stages begin and end, and how parties may move from one stage to another e.g. from cooperative to collaborative interaction. In addition, these models offer only a rudimentary sense of 'what goes on' at each stage. Hogue's *Characteristics of Community Linkage Levels* provides a more substantial sense of how collaboration differs from other levels or stages. Despite this, many of the conditions and factors which collaboration literature suggests as central to the success of collaboration are not included in Hogue's *purpose, structure* and *process* categories presented in Table 2.1. In addition, this model again omits an understanding of how to move from one level to the next and of the challenges this transition towards a collaborative way of working may present. What these models do suggest however is that pursuing a strategy of collaboration suggests different goals and a more intense and more demanding way of firms working together to achieve these goals, in contrast to other relationship levels of interaction. Accordingly, pursuing a strategy of collaboration, as a means to strengthen buyer-supplier relations and improve supply chain performance, suggests parties are likely to encounter ways of working with the partner firm that are new and unfamiliar.

As discussed in Chapter One, for parties encountering new and unfamiliar events and circumstances there is an accompanying need for them to seek understanding of these in a way that makes sense to them. The decision by buyer and supplier parties to move towards a collaborative way of working together suggests such an occasion for sensemaking. Chapter One described collaboration in terms of firms forming a "mutually beneficial relationship...to achieve results they are more likely to achieve together than alone" (Winer and Ray, 1994:24). In turn, this process of collaboration was described as revolving around "a partnering skillset, a partnering mindset and through a supportive context...to facilitate collaboration" (Liedtka, 1996:24). To begin to consider what 'new

and unfamiliar' events and circumstances are suggested by the decision to collaborate, the goals of collaboration and also the skillset, mindset, and support context for collaboration need to be explored. The following section begins this exploration by addressing the goals of collaboration. Later sections continue this exploration by considering the nature of such a skillset, mindset and supportive context for collaboration.

2.4 Collaboration Goals

The goals or aims of collaboration can relate to how parties collaborate (process aims) and also to what parties may seek to achieve (outcome aims). Nooteboom (2004) discusses the nature of collaboration aims with respect to three types: *efficiency*; *competence*; and *positional advantage*. *Efficiency* aims are concerned mainly with the efficient utilisation of existing assets and competencies (i.e. economies of scope, scale and time) between collaborating parties. *Competency* aims focus on learning, innovation and the development of new competencies from others. Lastly, *positional advantage* is aimed at entering new markets and protecting existing ones. In addition to differing types of aims it is recognised that collaboration aims may also differ across different levels within the organisation. In this respect, Huxham and Vangen (2005) differentiate collaboration aims in terms of *collaboration, organisation* and *individual* aims. *Collaboration aims* relate to what collaborating organisations are trying to achieve together, which in turn tend not to be achievable by one party acting alone. *Organisation aims* relate to what each organisation is seeking to achieve or gain for itself from participating in collaboration, for example with respect to functions and areas of activity. *Individual aims* relate to the aspirations of the individuals involved.

Many authors recognise that it is essential to identify and agree upon goals or aims for the purpose of collaboration (e.g. Mattessich and Monsey, 1992; Kahn, 1996; Nooteboom, 2004; Mattessich et al., 2001). Shared goals help to align collaborating parties in achieving mutually beneficial outcomes by helping to clarify the scope and scale of joint work, and potentially to deal with conflict (Kanter, 1994; Gray, 1989; Mattesich et al., 2001). Additionally shared goals can facilitate agreement and understanding of what each party is trying to achieve in order to generate a mutually beneficial or a 'win-win' solution for each party involved. Shared goals should also be clear and seen as realistically attainable to all parties.

Differing aims or goals within and across firms are however recognised as a possible reality accompanying organisational efforts to collaborate (e.g. Dacin et al., 1997; Huxham and Vangen, 2005). In addition, goals may be ambiguous, expectations and priorities may differ amongst parties, and a variety of other aims may compete with or cloud the collaboration agenda. In reality not all differing aims may need to be shared with, or addressed by, the collaborative effort. Whilst recognising this however, attempts by parties to influence or control the agenda in their favour, or the existence of competing or conflicting goals that hinder the collaborative effort, need to be managed (Huxham and Vangen, 2004). For example, parties may need to reach some compromise around agreeing mutually beneficial aims or indeed simply agree to disagree as more realistic solutions to managing conflicting aims. Setting short-term goals, in addition to any longer-term goals, may also enable parties to experience a "progression of successes" (Mattessich et al., 2001:25) helping to sustain the collaborative effort, stemming tendencies towards conflict and encouraging compromise (Mattessich et al., Wiewel and Guerrero, 1997).

Shared vision and values with respect to collaboration may also help to address challenges in relation to managing collaboration goals. For example, a partner who perceives that their partner firm has chosen appropriate actions will tend to have greater commitment to the organisational relationship between them (Morgan and Hunt, 1994). Shared vision, with clearly agreed-upon mission, objectives, and strategy can also assist with motivating parties and managing conflicts (Mattesich et al., 2001). As with the goals of collaboration however, whilst shared vision and values may help parties to set and achieve similar goals and sustain efforts towards achieving these goals, it may be difficult to achieve compatibility in vision and values across parties, particularly at the outset of the collaborative effort.

The nature of collaboration goals (as goals which firms may only successfully achieve together), and working towards identifying, agreeing, and achieving these goals therefore suggest challenges for collaborating firms. A collaborative approach may be quite in contrast to how firms typically identify, agree, and achieve goals, perhaps requiring firms to balance or prioritise collaboration goals over competing goals. From a cognitive perspective, understanding and accepting the nature of, need for, and benefits of collaboration goals, and reconstructing the current relationship as 'collaborative' with a partner firm in order to achieve these goals, suggests events and circumstances around which parties may need to make sense. For those interested in facilitating this process -

towards parties' understanding and acceptance of collaboration goals and of working collaboratively to achieve these goals - an understanding of how to manage and influence this process would seem valuable.

As discussed in the preceding section, the emergence of an appropriate skillset, mindset, and supportive context for collaboration are central to the achieving collaboration goals (e.g. Liedtka, 1996; Mintzberg et al., 1996; Haskins et al., 1998). Mattessich et al., (2001) similarly discuss the achievement of collaboration goals in terms of how firms think and work together. As an example, Mattessich et al., (2001:4) discuss achieving successful collaboration in terms of entering into a relationship which includes "a commitment to mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards".

An extensive body of literature exists which explores factors considered to influence successful collaboration. In spite of this however, collaboration continues to be seen as a challenging pursuit for managers (e.g. Kahn, 1996; Handfield and Nichols, 2002; Bowersox et al., 2003; Huxham and Vangen, 2004; Boddy and MacBeth, 2000). As Mattessich et al., (2001:33) conclude "even when the success factors are recognised as important, their cultivation in practice is often not straightforward". From a cognitive perspective, these success factors again suggest new and unfamiliar ways of thinking and working, around which parties may seek to make sense. This would seem particularly relevant during the initial introduction and early stages of collaboration. Whilst collaboration, as a process, suggests that new ways of thinking and working evolve over time, the initial introduction, and early stages of the project, would present themselves as key stages for facilitating understanding and acceptance of the vision, transition process, and likely outcomes of collaboration. This early period would suggest itself as the period in which parties are being introduced to the vision, concept and constructs of collaboration for the very first time and beginning to encounter what the transition to collaboration seems to involve and require of them. As collaboration is a process however, it is also recognised that sensemaking is likely to continue as parties encounter the emerging events and circumstances of collaboration around which they seek to make sense.

For those concerned with facilitating understanding and acceptance of collaboration, there is therefore a need to consider how these factors impact the sense that parties may make of collaboration as they seek to understand and accept this way of working. As discussed in

Section 1.5, research on strategic change and sensemaking has identified management as having a key influence on the sensemaking of others, helping to legitimise the need for, and the intended nature of the impending change through the process of sensegiving (Smircich and Morgan, 1982; Quinn, 1980; Langley, 1989; Gioia et al., 1994). Yet managerial sensegiving may be impacted by a variety of competing influences on parties' sensemaking from the existing and emerging context of action. In addition, the sense that parties themselves make as 'agents' who construct their own work environment (Brown, 1995, 2000; Tsoukas and Chia, 2002) may compete with or limit the sensegiving efforts of management.

As potentially new and unfamiliar ways of thinking and working these factors suggest themselves as events and circumstances of collaboration that may *trigger* the need for parties to make sense. In addition, as factors that may characterise the emerging context of action and that may influence the success of collaboration, these factors may in turn act as *influences* upon the sense that parties make of collaboration as they emerge and perhaps 'themselves' evolve over time. An understanding of these factors as potential triggers and / or influences upon the sense that parties make of collaboration should provide insights for those concerned with managing and influencing sensemaking. Exploring the forces that exert the greatest influence over sensemaking suggests a means of gaining an insight into triggers and influences that management may leverage or counteract in terms of their respective influence on this process. This understanding should in turn provide direction for managerial efforts toward facilitating understanding and acceptance of collaboration between these buyer and supplier teams. In addition, with the focus of this study upon the initial and early stages during which parties are coming to understand and accept collaboration, it allows for an understanding of the temporal relevance of these factors for the buyer and supplier parties in this study.

The following section considers these success factors for collaboration with respect to their potential challenges to, and influences upon, the sense that parties may make of collaboration.

2.5 Collaboration Success Factors

Collaboration literature identifies a variety of factors considered to influence collaboration success. From an extensive review of literature addressing collaboration success factors,

Mattessich et al., (2001) extending an earlier study (1992), structure these factors around six categories. In addition to the goals or purpose of collaboration these categories include communication, membership, processes and structure, resources and environment. Drawing upon these categories as a means of structuring the review, the following section presents a brief overview of those factors identified commonly within collaboration literature as influencing successful collaboration. This overview however draws, not only upon the study by Mattessish et al., (2001) but rather upon a range of studies which have explored factors influencing the success of collaboration.

2.5.1 Communication

Open and frequent communication is central to promoting understanding, cooperation and information sharing (Kanter, 1994; Gray, 1989; Fisher, Ury and Patton, 1991; Susskind and Field, 1996) with both formal and informal forms recognised as important for creating strong social links and personal connections in collaboration (Mattessich et al., 2001). Collaborative relationships are considered to evolve through processes of negotiation and dialogue between parties. *Negotiation* reflects a more formal approach to communication. Approaches to negotiation may take many forms from hard-bargaining to principled negotiation (Fisher et al., 1991). A hard-bargaining approach takes the view of parties as adversaries, potentially concealing information, bluffing to advance a position and typically aspiring to a win-lose outcome that favours their own position. In contrast, principled negotiation is respectful of another's position, freely sharing information, using objective criteria to make fair decisions and working towards understanding and managing differences constructively in order to advance their own self-interest (Fisher et al., 1991). This latter approach treats the other party as partner rather than opponent and sees the differences between their positions as a platform for compromise and consensus building, rather than conflict (Susskind and Cruckshank, 1987). Principled negotiation is therefore more closely aligned with the concept of collaboration. *Dialogue* is considered more informal in nature (Schinke-Llano, 1995; Vygotsky, 1978) occurring on the margins of formal negotiations although also applicable in situations of formality. Dialogue refers to a language exchange in which people seek to think together, thus enabling collaborative activity to emerge from mutual understanding (Bradbury, 2001). Dialogue is considered appropriate in reaching new understanding and creating a new basis from which to think and act (Isaacs, 1993).

Communication between collaborating parties should enable agreement on activities and facilitate parties in modifying and reconstructing aspects of their relationship as collaborative. Additionally communication is likely to revolve around reporting problems and dealing with conflict and tensions constructively, with the emphasis on open and honest exchanges. As with establishing shared goals, values, and vision however, such openness in communicating may be difficult to achieve. For example, secrecy and security issues regarding protection of intellectual property may pose barriers to knowledge sharing, particularly amongst small firms (Lawton-Smith, Dickson and Lloyd-Smith, 1991; Kale, Singh and Perlmutter, 2000). Firms may also be unwilling to openly share ideas where they perceive current partners may become future competitors. Thinking together, freely sharing information, understanding different roles and responsibilities and treating the collaborating party as a partner may again suggest events and circumstances around which parties may need to make sense and reach understanding.

In addition, opportunities or a lack of opportunities to communicate may also influence the sense that parties make of events and circumstances. As discussed in Section 1.4 sensemaking is described primarily as a communicative, social-interactive process (Barrett et al., 1995; Tsoukas and Chia, 2002) around "conversational and social practices" (Gephart 1993:1469) which may include a variety of communication genre (Watson and Bargiela-Chiappini 1998), both verbal and non-verbal and formal and informal (Gioia and Chittipeddi 1991; Gioia et al., 1994, Weick 1995).

2.5.2 Collaboration Membership

Factors typically considered with respect to collaboration membership and to aspects of the relationship between members include an appropriate cross-section of members, trust, and commitment amongst the members. Each of these is reviewed briefly in this section.

Appropriate Cross-Section of Members

The selection of members is considered a critical factor affecting collaborative success (e.g. Bergquist et al., 1995; Gray, 1995, 1996; Huxham, 1996) whereby the intentions, competencies and perspectives that members of a collaborative bring to the relationship are vital (e.g. Bergquist et al., 1995; Block et al., 1999; Campbell et al., 1999; Mattessich et al., 2001). Membership of a collaborative group should include the participation or representation of key parties affected by, having influence over, or having power to

support or block collaboration activities as contribute to the success or failure of collaboration (Gray, 1995). This may include participants actively engaged in the collaborative in addition to senior management deciding, for example, resource allocations or collaborative goals.

Managing the membership may therefore include managing intentions, competencies and perspectives of members in addition to identifying interdependencies between collaborating parties (Gray, 1989; 1995; Kanter, 1994). Flexibility should also be built into the membership structure to ensure parties remain flexible and responsive to changing conditions. Membership may need to be flexible to allow new persons or parties to be brought into the collaborative group, although too broad a membership may complicate group manageability (Mattessich et al., 2001). Managing participation across organisation levels may also ensure the involvement of those necessary and interested in the success of collaboration (Rubin, 1998).

Although recognised as influencing collaboration success, managing membership may be difficult. For example, maintaining flexibility (Kagan, Rivera and Lamb-Parker, 1990) and adaptability (Rogers, Duerr-Berrick and Barth, 1996) in the membership, managing pace of development (Mattessich et al., 2001) and reviewing the vision and values underpinning collaboration (Austin, 2000) suggests that managing collaboration membership requires continuous effort. Ensuring the membership has the ability to sustain itself in light of possible changes to the membership, goals, conditions, demands, and resources of collaboration is also challenging.

From a cognitive perspective parties engaging in collaboration are also likely to seek understanding around working with new persons or parties and within the structure of the membership. For example, parties may seek to make sense of the intentions, competencies and perspectives of fellow members. Additionally, members may act as a source of influence over the sense that parties make of the need for, nature of, and benefits of collaboration, and its outcomes.

Furthermore, maintaining flexibility in the membership may influence the sensemaking of those engaging in collaboration, particularly where members do not have time to form strong social links and personal connections, or feel part of a shared social setting. The level of understanding and awareness that a shared social system can generate is

considered more conducive to constructing shared understanding than others as it facilitates interactive and sharing behaviours (Weick, 1979). In addition it alters the type of contribution that organisational members may make to a given setting due to their altered understanding of the task and their role in its' performance (O'Reilly, Caldwell and Barnett, 1989). In short, a shared social setting is seen as enabling group members more readily make sense, and reach a shared understanding, of information (Weisband, 1995) and to coordinate decisions and actions across units. Conversely the absence of a sense of social belonging may impact parties' sensemaking with respect to events and circumstances they encounter, for example their understanding and acceptance of the nature of collaboration and its goals, and of reconstructing their relationship with the partner firm as collaborative.

Trust

Mutual trust between collaborating parties is extensively researched as a factor influencing the success of collaboration (e.g. Gray, 1995, 1996; Block et al., 1999; Tapper, Kleinman, Nakashian, 1997; Child, 2001; Cullen and Johnson, 2000; Pitt, 1998). One view is that trust refers to the willingness of a partner to take on risks in light of certain expectations, for example the opportunity for a party to take advantage, or act opportunistically, to gain at the other's expense (McCutcheon and Stuart, 2000). Other views hold that trust is simply a sophisticated tool to exert power on weaker parties (Knights and Wilmott, 1990) acting as a force for subordination. As Bachmann (2001) concludes however, the ability to make such calculations, assessing the consequences of a decision, reduces the need to rely on trust as a mechanism. Bachmann (2001) also suggests that most social relationships are based on a mixture of power and trust which help to link mutual expectations and co-ordinate actions.

The extent to which participants need to become intimate and trusting collaborators has been debated within collaborative literature with opinions varying with respect to the significance of trust within business relationships (e.g. Nooteboom, 2004; Vangen and Huxham, 2003, Huxham and Vangen, 2005). Whilst trust is recognised as an important factor in influencing collaboration, understanding of trust as a governance mechanism and of the function it fulfils in coordinating expectations and interactions in inter-organisational relationships is limited (Bachmann, 2001). In addition, there is a substantial interest focusing on 'process-based trust' (Nooteboom, 2004) whereby trust is not in place prior to collaboration, but rather builds as conditions appropriate for it to develop begin to

emerge (Nooteboom, 2004; Huxham and Vangen, 2005). Engagement in the process of collaboration may also increase a partners' ability to evaluate a given situation. The ability to assess uncertainty and the potential for opportunistic behaviour may enable parties to predict outcomes other than relying on trust (Sharfman, Gray and Yan, 1991). The absence of trust does not therefore necessarily lead to collaborative failure. Rather collaborative groups may need to allow time for trust and understanding to develop (Block et al., 1999; Tapper et al., 1997). Whilst recognising that conditions for trust to develop may take time to emerge, it is however interesting to consider how parties perceive the level of trust they may have for the collaborative partner as influencing the initial sense they make of collaboration, and indeed if changes in perceived levels of trust influence the sense that is made over time.

Commitment

A critical issue in collaborative relationships relates to gaining the involvement and commitment of participating members to engage in activities that contribute to the achievement of collaboration goals (Simatupang and Sridharan, 2002). Commitment is defined as a decision that a person, team, or organisation makes to a course of action when they believe it is necessary and they are willing to make it work (Meyer and Allen, 1997). It refers to the willingness to enter into obligations and to live up to these obligations, helping to create stability in relationships (Alutto, Hrebiniak, and Alonso, 1973; Meyer and Allen, 1997). The importance of commitment to the collaborative effort is widely acknowledged in collaboration research (Huxham and Vangen, 2005; Mattessich et al., 2001; Linden, 2002; Agranoff and McGuire, 2001). In addition, commitment to collaborative purpose is identified as central to the development of a more collaborative mindset (Linden, 2002). Identifying and communicating the clear and visible benefits of collaboration for parties involved, in addition to providing incentives to encourage and promote involvement, are recognised as helping to drive and sustain the collaborative effort (Wiewel and Guerrero, 1997). In addition, promoting a sense of ownership of collaboration as a way of working, and of collaboration results, are seen as helping to builds commitment (Mattessich et al., 2001; Gray, 1995).

Despite such acknowledgments of commitment as an important factor influencing successful collaboration, discussions on commitment seem anecdotal in nature within collaboration literature, with limited conceptualisation of the nature of commitment to collaboration and limited understanding of how commitment to collaboration develops.

For example, it is common across studies which discuss commitment as a factor for collaboration success to view it as a singular, all-positive phenomenon contributing positively to the success of collaboration and also to buyer-supplier relationships. Yet literature on commitment recognises it as a multi-dimensional construct which takes different forms (Caldwell, Chatman and O'Reilly, 1990; Meyer and Allen, 1997). This view does not seem to have been incorporated into the collaboration literature dealing with commitment. Literature on commitment also recognises that it may have negative aspects (Mowday, 1998; Meyer and Allen, 1997) yet again this does not seem to be recognised by studies which discuss the importance of commitment to collaboration. As observed by Mowday (1998) however, the view that all commitment leads to positive outcomes may be considered naïve. Disadvantages of commitment such as resistance to further change and irrational perseverance in behaviour (Hadden, 1999) in addition to limitations for future change (Randell, 1987) have been explored within change literature, although it is also recognised that such correlations are in need of further research (Meyer and Allen, 1997). As with trust, it is again also interesting to consider if and how parties perceive commitment as influencing the sense they make of collaboration and indeed if changes in perceived commitment influence the sense that parties make of collaboration over time. In addition, understanding the focus and nature of commitment with respect to influencing sensemaking would again suggest valuable insights for managerial and sensegiving efforts.

2.5.3 Collaboration Processes

Processes commonly discussed as central to collaboration success include consensus decision-making; joint problem solving; clear roles and responsibilities; managing conflicts and sharing power. Each of these is reviewed briefly within this section.

Consensus Decision Making

In a collaborative setting, decision making by consensus is considered a defining characteristic (Gray, 1989; Haskins et al., 1998; Mintzberg et al., 1996; Kanter, 1994; Ball, 1999). Consensus decisions refer to decisions that all can support because their respective interests have been addressed (Ball, 1999). Reaching consensus may however may be dependent upon the clarity of goals, preferences and choices, the amount and certainty of information available, and the expectations of those involved (Choo, 1998). Where goals, preferences and expectations differ, decision making may lead to conflict and power struggles rather than consensus. Skills and mechanisms to resolve conflicts constructively

are thus a key part of effective decision-making structures (Lennett and Colten, 1999; Nooteboom, 2004; Huxham and Vangen, 2005). For example, reaching consensus requires time and patience whereby parties to collaboration may need to learn how to manage negotiations, manage power relations, act fairly and amicably, and create working conditions that offer flexibility and adaptability in negotiations to allow consensus to be reached (e.g. Gray, 1989; 1996; Mattessich et al., 2001). When collaborating parties cannot reach consensus however, compromise may also offer an alternative means of making decisions and reaching agreements (Lennett and Colten, 1999; Block et al., 1999). Compromise may be suggested where parties cannot make a decision that fits the preferences of all parties equally. However, compromise is considered potentially problematic if parties feel they have given up part of what they ultimately desire and if they are not content to accept this compromise situation in the long run (Mintzberg et al., 1996).

Joint Problem Solving

Joint problem solving is defined as all parties to collaboration working together to define, analyse, and resolve or improve a situation by jointly agreeing a solution (Shibata, 1999). Neither party may know the best solution but this approach acknowledges the need for parties to approach and solve the problem jointly and to rely on each other to find the best solution through collaborative interaction (Bowersox et al., 2003). Solutions are therefore chosen based upon an awareness of the implications for others and the development and effectiveness of the group as a whole (Monczka et al., 1998). Joint problem solving is suggested as a true advantage arising from collaboration (Mohr and Spekman, 1994) which may result in a more fundamental shift in mindset if parties become more open in their approaches to working together. As a process that relies upon related success factors, for example communication, consensus, compromise, and conflict management, this approach may however take time for parties to accept and to learn.

Clear Roles and Responsibilities

Mattessich et al., (2001:20) suggest that collaborating partners should "clearly understand their roles, rights and responsibilities and understand how to carry out those responsibilities". Discussing, jointly agreeing, and clearly communicating these roles and responsibilities are in turn seen as central to collaboration success (e.g. Lukas and Weiss, 1995). Agreeing roles and responsibilities may however present disagreement and conflict amongst parties, requiring compromise or perhaps, as discussed previously, suggesting an

occasion where agreement is not reached and where parties 'agree to disagree'. In addition, even where roles and responsibilities are clear, it is recognised that these may need to change and evolve in accordance with evolving or changing goals and conditions of collaboration (Rogers et al., 1996). Adaptability and flexibility in terms of how parties organise themselves and how they work together to achieve collaboration goals are therefore central to ensuring the continued survival of the collaborative effort under changing conditions.

Managing Conflict

Conflict is conceptualised in terms of differences in *interests* and *values* and differences in *concerns*, for example, the negative or potentially negative effect on something the party cares about (Thomas, 2002). Conflict may also be conceptualised in terms of *action* such as competing, avoiding, compromising and accommodating (Judson, 1991). As discussed in preceding sections, there is significant potential for conflict to arise within the collaborative effort due to, for example, conflicting goals between parties or efforts by one party to influence or control the agenda in their favour (Biong, Wathne and Parvatiyar, 1997). Managing conflict is therefore considered essential to collaboration success. Constructive conflict resolution techniques such as persuasion or joint problem solving are seen as helping parties to reach a mutually satisfactory solution and as enhancing relationship success (Mohr and Spekman, 1994; Mintzberg et al., 1996). Conversely, destructive conflict resolution techniques, for example domination or confrontation, are considered to negatively impact relationships with ineffective conflict management associated with failed collaborative projects (Huxham and Vangen, 2005). Conflict may however exert a positive force whereby the concept of functional conflict is considered to support the goals of the organisation (Cosier and Schwenk, 1990; Hatch, 1997), as opposed to dysfunctional conflict, which hinders the achievement of organisational goals.

As with reaching agreement between parties, it is important to recognise however that efforts to resolve conflict may again be limited to compromise where decisions and agreements cannot fit all members' preferences (Lennet and Colten, 1999) or to agreement by parties to simply 'agree to disagree' as the only manageable option to ensure the collaborative effort survives (Huxham and Vangen, 2005).

As with conflict, managing resistance is also important to the success of relationships between parties (Judson, 1991; Jick, 1993). Commonly cited reasons for resistance include

fear of the unknown (de Jager, 2001), low tolerance for change and ambiguity (Kotter and Schlesinger, 1979), resentment and perceived unfairness of change (Folger and Skarlicki, 1999), pursuit of ethical principles (Modigliani and Rochat, 1995) and a belief in the success of alternative approaches (Dutton et al., 1997). These varied reasons for resistance suggest both positive and negative bases underpinning resistance. Recognising the potential for resistance to exert a positive force on collaboration and understanding this response to collaboration may assist the management process.

Sharing Power

The use of power reflects an assumption by one party that the other will not comply in accordance with their preferred manner. Lane and Bachmann (1998) describe power as acting to reduce uncertainty and complexity, to co-ordinate expectations, and to control the dynamics of a social relationship by relying upon the subordination of the other party and upon influencing the other party's selection of a particular course of action amongst a set of alternatives. This use of power however requires the other party to acknowledge a threat and to perceive it as realistic.

Collaboration is considered to operate on a model of shared power (Gray, 1989). Organisational theory suggests that collaboration relies on neither market nor hierarchical mechanisms of control (Ouchi, 1980; Lawrence, Philips and Hardy, 1999). Instead, the governance structure shifts to a mutually prescribed, rule-based operating agreement where the rules reflect the joint interests of all participants (Bowersox et al., 2003). In turn, interactions are agreed based upon consensus or compromise, rather than dominance and compliance between parties. Managing power relationships is therefore important to the negotiation of collaboration goals and conditions (Nooteboom, 2004). Huxham and Vangen (2005) summarise power through three perspectives: power *over*; *power to* and *power for*. 'Power over' is concerned with control of the relationship and thus with power over others. On the other hand, 'power to' is used for the mutual gain of the relationship to help the collaboration function effectively and may be used by both parties or used by one party over another to maintain stability (Inkpen and Beamish, 1997). Finally, 'power for' is concerned with using collaboration to share power and to build the strength and influence of the collaborative relationship (Huxham and Vangen, 2005). Different uses of power may produce different benefits and harm and result in different qualities of relationship. Knowing which of these mechanisms the relationship is predominantly based

upon is therefore important to understanding and managing the power base within a relationship.

In summary, as with the factors of communication and membership, *collaboration processes* again suggest possible sensemaking triggers confronting parties with new and unfamiliar events and circumstances such as ways of thinking about, and working with, the partner firm. Additionally these factors, and how they change or evolve over time, may be perceived by parties as influencing the sense that they make with respect to understanding and acceptance of collaboration.

2.5.4 Collaboration Structures

Collaboration requires a structure which captures the collective capabilities of people across organisations (Jassawalla and Sashittal, 1999). An appropriate structure for collaboration can help to bring people together, share views and perspectives, and draw upon the range of skills and resources necessary to deal with the challenges arising from engaging in the collaborative effort (Mattessich et al., 2001). Additionally, appropriate structures can help members to understand how fellow members will function and make decisions, what issues they will be discussing, and where people stand on these issues (Ball, 1999). In an inter-organisational context, structures can also help firms to recognise and understand each other's motivations, coordinate and control activities, minimise potential barriers and help firms to adopt a course of action that facilitates a 'win-win' outcome central to a collaborative way of working (Boddy and MacBeth, 2000). In short, structures provide the 'ground rules' to clarify the path for moving forward so parties are operating from the same set of assumptions (Hogue, 1993).

Encouraging participation, creating mechanisms to involve essential parties, and integrating efforts across members are seen as helping to build strong ties across the collaborative membership (Mattessich et al., 2001). In particular, team-based structures are emphasised with collaboration literature (e.g. Jassawalla and Sashittal, 1999) with face-to-face teams considered to provide an appropriate support structure to facilitate collaborative interaction (e.g. Mintzberg et al., 1996; Haskins et al., 1998; Boddy and MacBeth, 2000). As Mintzberg et al., (1996:63) observe, "Face-to face collaboration is a richer medium because it allows for nonverbal communication, facilitating the delicate process of integrating ideas and energies". Collaborative interactions are not restricted to

physical settings however. Virtual spaces also offer a forum for knowledge to be created and shared. With pressures on organisational time, costs, and resources, in addition to geographical distances between firms, the use of IT interface systems offer another means of structuring collaboration. Although these are gaining increased significance, IT systems represent significant problems for collaboration. For example, El Sawy (2001) argues that the effort required to integrate systems across organisations is often greatly underestimated.

Whilst recognising the importance of having an appropriate structure for collaboration, such structures are considered difficult to design, manage, and maintain. Changing internal and external environmental conditions, in addition to the need for flexibility and adaptability in membership; goals; systems of organising; and systems of working, present challenges for developing and sustaining an appropriate structure for collaborating. One way of dealing with challenges arising from changing membership and operating conditions is to maintain strong links and social bonds between members, which are considered central to developing and sustaining the collaborative effort (e.g. Mintzberg et al., 1996; Rubin, 1998). As Mattessich et al., (2001:24) observe, "...setting aside purely social time may be helpful for members of a collaborative group". In reality however, appropriate structural conditions may be difficult to develop and sustain.

The structure for engaging in collaboration therefore suggests both a potential trigger and / or influence upon how parties make sense of collaboration. In addition to perhaps triggering the need for parties to understand what a new and unfamiliar work structure may mean, different structures for collaboration may also act to influence the sense that parties make. For example, shared social settings are considered more conducive to enabling organisational members more readily make sense, and reach a shared understanding, of information (Weisband, 1995) helping to coordinate decisions and actions across units. Understanding how different structures influence parties' understanding and acceptance of collaboration therefore may therefore suggest a potential opportunity to manage and influence sensemaking accordingly.

2.5.5 Resources for Collaboration

The concept of a collaborative partnership suggests that all parties share the benefits and risks of collaboration (Waddock, 1989; Ellram, 1995). Winer and Ray (1994) define

collaborative resources as money, staff, technology, training, and information, in addition to contacts that member organisations are able or willing to commit. Ahuja (2000) categorises the resources that support effective collaboration as technical, commercial and social capital. *Technical* capital represents a firm's capability to create new technologies, products and processes. *Commercial* capital represents the assets needed to commercialise new technologies. *Social* capital represents the firm's prior relationships with other firms, individuals, or bodies, thus providing information and status benefits. Jointly creating and sharing such resources may indeed be at the core of a firm's strategy for pursuing collaborative ventures with other firms, particularly where these cannot be replicated in-house (Kanter, 1994; Nooteboom, 2004). In addition to sharing resources there is the need to ensure the collaborative effort is itself adequately and consistently resourced, including sufficient resources dedicated to supporting participation and equal collaboration (Gray, 1995, 1996; Pitt, 1998; Block et al., 1999). Properly resourcing the collaborative effort across its lifetime helps to nurture the process, in addition to communicating a committed and supportive attitude towards collaboration (Mattessich et al., 2001).

As with other collaboration success factors however, sharing resources and resourcing the collaborative effort may in practice prove challenging. Conflicts and disagreements may arise in terms of sharing or assigning resources. In addition, the availability of resources may not always be ideal or indeed parties may be unwilling to share resources. As discussed in Section 2.5.1, secrecy and security issues regarding protection of intellectual property may pose barriers to knowledge sharing, in addition to firms perhaps unwilling to share resources where they perceive current partners may become future competitors (e.g. Lawton-Smith et al., 1991; Kale et al., 2000). An unequal power-balance between firms may also influence the sharing and assignment of resources (Huxham and Vangen, 2005). Alternatively, firms may be unable at times to resource the collaboration effort, for example changes in market conditions such as a downturn in the market may impact a firm's willingness or indeed ability to accept responsibility for resourcing collaboration.

Issues around the resourcing of collaboration may therefore again act as triggers or influences upon parties' sensemaking in relation to pursuing a strategy of collaboration. An understanding of the links between resources and sensemaking, perhaps with respect to varying resource conditions, again seems relevant with respect to efforts to facilitate initial understanding and acceptance of collaboration.

2.5.6 Environment

A history of positive collaboration is recognised as beneficial in enabling parties understand and accept a collaborative approach to working together (e.g. Abbot, Jordan and Murtaza, 1995). Such a history may assist parties in understanding both what is expected of them in collaborating, and also the roles and nature of the collaboration process in which they are engaging. Where collaboration represents a new approach for parties to work together however, efforts to create an appropriate environment are considered necessary 'up-front'. For example, educating participants with respect to the purpose and benefits of collaboration can help parties to understand and accept collaboration (Mattesich et al., 2005). In addition, creating a sense of legitimacy for the collaborative effort (Sharfman et al., 1991) can help initiate, and over time sustain, collaboration. Creating favourable conditions including a positive political and social climate can also assist the process (Trubowitz and Longo, 1997). As funding availability, political conditions and social climates may be subject to change however, monitoring and maintaining an appropriate environment for collaboration are necessary across the duration of the collaborative effort.

For those without a history of collaboration it seems that creating an appropriate environment for collaboration may act as an occasion where parties are again likely to encounter new and unfamiliar events and circumstances. Advocacy and funding for collaboration, in addition to efforts to educate potential collaborators regarding the benefits the processes of collaboration (Mattessich et al., 2001), suggest possible triggers of sensemaking in addition to acting as possible influences on how parties make sense of collaboration over time. As with other success factors however, putting favourable conditions in place may take time or may not always be possible (Huxham and Vangen, 2005) and operating under varying environmental conditions may impact parties' sensemaking with respect to collaboration. Understanding the influence of such varied conditions, if any, on how parties make sense of collaboration, and indeed if perceived changes in environmental conditions influence sensemaking over time, again suggest valuable insights for those concerned with managing and influencing sensemaking.

In summary, as this brief overview of success factors for collaboration in the preceding sections suggests, generating a successful collaborative working agenda is likely to prove difficult to achieve in practice (Ball, 1999; Bowersox et al., 2003; Huxham and Vangen, 2004; Boddy et al., 2000). Indeed, in a review of extant literature on collaborative failures,

Parung, Bititci and MacBride (2004) conclude that most of the problems and failures in collaboration seem to occur during the implementation stage. These authors identify three main causes of failures: *inter-personal relationships, performance outcomes,* and *organisational and structural procedures.* Problems identified in the *inter-personal relationship* between organisations include lack of trust (e.g. Child, 2001; Child and Faulkner, 1998) lack of commitment (Huxham and Vangen, 2004); ineffective communication between partners (Mintzberg and Jorgensen, 1996); differences in organisational culture (Bruner and Spekman, 1998); and little attention to nurturing the working relationship (Mattessich et al., 2001). A second main reason for inter-firm collaboration failure is due to the lack of participant satisfaction with the *performance outcomes* of the collaboration (Parung et al., 2004). For example, Zineldin and Bredenlow (2003) found that the demise of the GM and Daewoo alliance was caused by the lack of productivity and not achieving financial benefits. A third main reason identified is a lack of participant satisfaction with the organisational *structures, systems and management procedures* (Parung et al., 2004; Kanter 1994). In summary however only a limited number of studies focus exclusively on problems and failures among inter-organisational collaborations, with these issues more typically subsumed into studies evaluating the attributes leading to successful or unsuccessful collaborative ventures.

In light of these challenges to collaboration success and the potential for its failure, literature identifies a number of roles and responsibilities central to the successful management of collaboration. These are considered in the following section.

2.5.7 Roles and Responsibilities for Managing Collaboration

Effective management of collaboration revolves around managing the factors for collaboration success discussed in the preceding sections. Examples of management roles and responsibilities include resourcing the collaborative effort (Mattessich et al., 2001) promoting shared vision and understanding (Huxham and Vangen, 2005), creating a sense of legitimacy for the collaborative effort in terms of members and purpose (Sharfman et al., 1991) helping to create a favourable political and social climate (Trubowitz and Longo, 1997), and involving key participants and personnel as necessary (Rubin, 1998). In addition, management plays a key role in helping to resolve conflicts and manage resistance across parties (Nooteboom, 2004). Management skills which rely on participation, power-sharing and consensus building are all highlighted in collaboration

literature (Bergquist et al., 1995; Gray, 1989; Huxham and Vangen, 2005). Additionally, some of these skills and roles may be held by facilitators of collaboration who are able to push participants to pursue objectives, or aim activities at overcoming some of the barriers to collaboration as drives the collaborative agenda (Gray, 1989; Schuman, 1996; Mattesich and Monsey, 1992). Management support across all participant firms is also identified as central to collaboration success (Mohr and Spekman, 1994; Olson and Singsuwan, 1997; Nooteboom, 2004), not alone during the initial start-up of collaboration but rather throughout the relationship (Kanter, 1994). Management support provides the direction and resources needed to steer relationships, including the investment of personnel and time (Mattessich et al., 2001).

Effective leadership of the collaborative effort is also recognised as influencing successful collaboration, although the notion of leader with a hierarchical position should not apply (Gray 1995, 1996; Block et al., 1999; Huxham and Vangen, 2005). Effective leadership emphasises process skills, knowledge of the subject areas central to the collaborative agenda, an ability to balance process and task activities, and to motivate and sustain the collaborative effort (e.g. Mattessich et al., 2001). Huxham and Vangen (2005:230) suggest that balancing facilitative and directive leadership roles may help to drive the collaborative agenda, by offering "the ideology of collaborative working and the pragmatism needed to get things done".

Although an understanding of these roles and responsibilities provides insights for those concerned with successfully managing the process of collaboration, given the considerable time, effort, costs, and resources necessary for collaboration success it is not surprising that it continues to be a complex and challenging managerial pursuit (Handfield and Nichols, 2002; Huxham and Vangen, 2005). The review of factors for collaboration success suggests that, particularly where no history of collaboration exists, the decision to engage in a collaborative approach, albeit potentially beneficial and advantageous, may require considerable changes to the ways that parties may have worked together previously (McLaren et al., 2002; Dacin et al., 1997; Haskins et al., 1998; Kahn, 1996; Bowersox et al., 2003; Kahn, 1996). The decision to pursue a strategy of collaboration as a means of enhancing supply chain performance suggests parties may be confronted with different and unfamiliar ways of thinking and working together to achieve goals of a different and unfamiliar nature. For example, identifying and agreeing shared and mutually beneficial goals; communicating openly and reaching agreement by consensus; negotiating and

making decisions jointly rather than controlling outcomes; sharing power; and sharing resources are all examples of ways in which thinking about, and working with, a partner firm may be unfamiliar to the parties involved.

Additionally, as the preceding review of collaboration success factors suggests, managing and facilitating collaboration is difficult whereby factors and conditions influencing successful collaboration are difficult to put in place, difficult to manage overtime, and require continuous effort to sustain. For example, ensuring the interests of different members coincide, managing potentially contradictory aims, and sharing ideas, knowledge and information in a manner promoting the openness synonymous with collaboration are all considered challenging pursuits. Additionally, in practice parties may be collaborating in less-than ideal conditions and experiencing ever-changing events and circumstances around which the ongoing need for new understandings may emerge.

From a cognitive perspective, pursuing a strategy of collaboration is therefore likely to confront parties with the need to make sense of this process as it unfolds. Parties are likely to be faced with figuring out issues such as 'what collaboration means', 'what it might mean for them' and also 'what the likely benefits of collaboration might be'. In addition, as the process of collaboration unfolds parties are likely to seek an understanding of the changes they are encountering in this emerging context of action.

Whilst the literature reviewed in the preceding sections of this chapter provides considerable direction for managing and influencing collaboration success, managing and influencing sensemaking with respect to understanding and accepting the vision, transition towards, and likely outcomes of collaboration suggests a need to understand how and why parties make sense of collaboration and of the influences that drive their sensemaking towards understanding and accepting a collaborative way of working with partner firms. Against the backdrop of a variety of possible forces and factors which may be leveraged to influence collaboration success, targeting unhelpful behaviours and actions and encouraging those that are constructive requires understanding and managing the underpinning perceptions. For example, with respect to the roles and responsibilities discussed, an understanding of what influences buyer and supplier parties' perceptions of a sense of legitimacy for the collaborative effort or of what perceptions of collaboration lead to commitment, motivation, and efforts by parties to pursue and sustain the collaborative effort, suggests insights for managing the collaborative process.

In particular, where parties perhaps need to let go of past mindsets and behaviours, and build commitment to new mindsets and behaviours as suggested by a collaborative agenda, managing collaboration requires managing this transition to collaboration. For example, influencing parties' understanding and acceptance of the purpose and benefits of collaboration; of shifts in content and process; and of newly emerging constructs and concepts they are encountering in pursing a strategy of collaboration would suggest themselves as possible sensegiving concerns for management. As discussed in Chapter One, a sensemaking perceptive suggests a lens by which parties' perceptions, and the ways in which these perceptions may be influenced towards behaviours and actions constructive for the purpose of collaborating, can be understood. A sensemaking perspective is considered in the following section.

2.6 A Sensemaking Perspective

As described in Section 1.4, where sensemaking is triggered it requires parties to update their beliefs, including identifying and interpreting unfamiliar events and action alternatives, and reinterpreting familiar issues and concepts to more closely align their belief systems with the demands of their environments (Isabella, 1990; Barr, 1998; Griffith, 1999). As a result, existing interpretative schemes are amended and / or new interpretative schemes develop, with sensemaking revealed through the interpretations and actions of parties. Influencing the sensemaking of others, or 'sensegiving' is therefore an attempt to influence the interpretations and actions of others. Sensegiving is considered a key part of effecting change in organisations (Gioia and Chittipeddi, 1991; Bartunek et al., 1999; Corley and Gioia, 2004; Dunford and Jones, 2000; Gioia and Thomas, 1996) with management identified as having a key influence on the sensemaking of others (Smircich and Morgan, 1982; Quinn, 1980).

As noted in Section 1.5 a variety of possible influences may act to compete with, or limit, managerial sensegiving. These influences included recipients 'themselves' acting as agents who construct their own environment; the initial context including influence relationships and political structures; and also the emerging context as events, circumstances, actions, and influence relationships unfold. In addition, recognising collaboration as revolving around the collective capabilities of parties suggests the inter-organisational context is also likely to act as an influence on sensemaking in relation to collaboration.

From a cognitive perspective the collaborative context therefore suggests several possible challenges to managerial sensegiving efforts. Literature on collaboration recognises the key role that those parties engaged centrally in the collaborative effort have with respect to ensuring the success of collaboration. For example, Liedtka (1996:24) notes, "the success of collaboration...depends far more on the capabilities and commitment of the working partners in the field than on directives issued from divisional or corporate headquarters...and on the ability of individuals scattered within and across the organisation to build meaningful relationships". Recognising these parties as sensemaking 'agents' however suggests their concerns and perceptions of collaboration may be at variance with the sensegiving efforts of management. The influence of recipient sensemaking suggests actual outcomes of managerial efforts to influencing parties' sensemaking, for example putting in place factors for collaboration success and encouraging and supporting the collaborative effort, may vary from the intended or desired outcomes of such efforts. In contrast to the sensemaking and the outcomes intended by management or indeed constructive to collaboration, parties may instead ask questions around 'what they are doing', and may be concerned with 'what matters' and 'what doesn't matter' to them, thereby constructing their own sense of, and influencing the outcomes of, collaboration.

In addition, the capability, skillset, and mindset for collaboration may take time to emerge (Liedtka, 1996). As discussed in the preceding sections, the ability of parties to make sense of collaboration in a way that engages with the benefits and processes of collaboration, in addition to reconstructing aspects of their relationship as collaborative, may be influenced by the complex and challenging nature of events and circumstances of collaboration that they are experiencing. In turn, as collaboration emerges, new events and circumstances are likely to require parties to revise and reconstruct the sense they have made in order to reach new understandings.

It is also important to recognise the potential for a gap to arise between agreements reached at top management level and those carried out at the operational level. For example, it is sometimes the case that the intentions of managers leading change are read as having different meaning by other groups of actors (Huxham and Beech, 2003). Furthermore, as noted in Section 1.5.1, the potential for divergence across organisational levels in the views, understanding, and interpretations of strategic change events is recognised (Jarzabkowski 2004; Johnson et al., 2003; Balogun et al., 2003). These observations

would therefore suggest that facilitating understanding and acceptance of collaboration can be enhanced by understanding the sense that parties make of collaboration.

As discussed in Chapter One, the buyer-supplier context also suggests a complex setting in which to influence sensemaking with respect to collaboration. This context is considered in the following section.

2.7 Sensemaking and Collaboration in the Buyer-Supplier Setting

The buyer-supplier setting suggests a variety of challenges to, and influences upon, participant sensemaking, which may influence the interpretations and actions of those involved. For example, historically supply chain relationships have been based either on power or trust (Chopra and Meindl, 2004). Relative dependence on the other party may determine the balance of power within the relationship (Wilson, 1995). In a power-based relationship, the stronger party often dictates its view, with power enabling one party to achieve its goals or to influence the decisions or actions of others (Fontenot and Wilson, 1997). Determinants of power within the relationship may include organisational size; access to and control over resources; control over the rules governing the exchange; and the ability to chose a 'do without' strategy because of the existence of alternative sources (Dwyer, Schurr and Oh, 1987). In particular, buyer-supplier relationships can be characterised by their asymmetrical power relation, with buyers dictating the terms of the exchange. This may involve a pressure for price reduction or an inducement to commit to specialised systems not readily transferable to other customers (Bresnen and Fowler, 1998). Against the backdrop of such a power-based arrangement adopting a 'power-sharing' approach as synonymous with collaboration is likely to prove challenging for firms. The threat of a shift in the existing power-balance in the buyer-supplier partnership, whereby one party may be more dependent on the other due to for example, sales volume or supply may challenges parties' sensemaking around the need for and the benefits of collaboration.

The potential for opportunistic behaviours in a buyer-supplier setting may also result in a competing sense of the appropriateness of a strategy of collaboration and of the value or benefits that may derive from this approach. In addition, collaboration may be constrained by the extent to which buyer-supplier parties are willing to collaborate, as discussed in Section 2.5.1 (Lawton-Smith et al., 1991; Kale et al., 2000). A history of competitiveness

may also constrain or present a hostile environment for collaboration, potentially requiring more time and resources dedicated to the initial stages of collaboration (Mattessich et al., 2001). Furthermore, physical and psychological distances between firms may prove challenging for communication, making it difficult for firms to reach agreement on what is critical to collaborative success and on what needs to be controlled and measured, particularly at the outset. Such differences and distances may generate tension and conflict, particularly where goals are ambiguous or conflicting, or where expectations and priorities differ across the parties involved.

Understanding the influence of such forces, both past and present, over the meanings attributed to various actions and events of collaboration suggests insights for managing this process and its outcomes between buyer and supplier parties. Understanding how parties interpret collaboration, and relating these interpretations to the evolving events and circumstances of collaboration over time allows an understanding of what specifically acts as an influence on sensemaking in the buyer-supplier setting. Exploring the forces that exert the greatest influence over these parties' sensemaking suggests a means of gaining an insight into triggers that management may leverage or counteract in terms of their respective influence on this process. Accordingly, over time this allows for an understanding of what new or changing events or circumstances bring about a shift in parties' interpretations and actions. With respect to those management roles and responsibilities discussed in Section 2.5.7, exploring how parties make sense of collaboration suggests insights for management in terms of what for example brings about a shift in interpretations and actions towards understanding and acceptance of shared vision and goals, of what helps to create a sense of legitimacy for the collaborative effort and of what may influence the involvement of key participants and personnel. Indeed, managing and leading the collaboration process may be as much to do with managing perceptions and meaning as it is to do with managing, for example, resources, members, environments and conflicts. As Gioia et al., (1994:366) conclude with respect to strategic change, "leaders...must find some means for proposing a new vision of the organization's meaning and value system and facilitating its acceptance".

Research exploring recipient interpretations and actions therefore suggests a sensemaking lens can provide insights into how parties think in relation to a process and what can be done about this i.e. what influences their thinking and their actions. Studies linking sensemaking and change, and the potential insights to be derived from adopting a

sensemaking perspective to the study of collaboration, are considered in the following section.

2.8 Studies Linking Sensemaking and Change

Research exploring change through interpretations and actions suggests that understanding and action derive from the framework of meaning assigned to these (Daft and Weick, 1984; Gioia and Chittipedi, 1991). Indeed, as Gioia and Chittipedi (1991:435) conclude, "The study of interpretation and meaning systems, and the processes whereby those systems are altered, is of fundamental importance to the study of strategic change". A number of studies have explored the links between interpretations and change. As observed by Barr (1998:645), "Both theoretical and empirical investigations of organizational change and change in understanding or beliefs, suggest that the periods of...upheaval and change in the strategy and activity of organizations (Tushman and Romanelli, 1985) are mirrored by similar changes in belief or ideologies (Hedberg and Jonsson, 1977, Fiol and Lyles, 1985; Milliken and Lant, 1991)". Furthermore these studies outline the role of sensegiving in framing and directing changes that take place (Bartunek, 1984; Gioia and Chittipedi, 1991; Gioia et al., 1994).

Much of the research in this area focuses on managerial interpretations rather than focusing on the interpretations of those engaged centrally in the change process. Yet, as literature on organisational change suggests, those engaged centrally in the implementation of a process involving new ways of thinking and acting may construct their own work environment (Brown, 1998, 2000; Tsoukas and Chia, 2002), and influence the emerging outcomes of change (Isabella, 1990; Gioia et al., 1994; Balogun and Johnson, 2003). Recognising the agency of those engaged centrally in change plans and process suggests the need to focus upon these parties' interpretations and actions. With respect to a strategy of collaboration, recipient interpretations seem central whereby "the capability for collaboration develops" (Liedtka, 1996:33) as collaboration parties come together to engage in the process. These parties are therefore central to translating events, and developing frameworks for understanding, as they engage in and experience collaboration. Accordingly, this study focuses on those engaged centrally in the process of collaboration. Furthermore, in contrast to much of the research which focuses on the individual (e.g. Gioia and Chittipeddi, 1991; Gioia and Thomas, 1996; Thomas et al., 1993; Barr, 1998; Balogun and Johnson, 2004, 2005) this study focuses on the collective level.

A further avenue of study identified by Barr (1998) relates to interpretations of events with the focus on causal links between action and primarily firm performance - usually a downturn - as the event to be interpreted (Ford, 1985; Thomas et al., 1993). Literature suggests that specific events can be isolated with interpretations of events linked to the strategic response taken. This research has commonly taken the approach of identifying the labelling of strategic issues, which in turn influences decisions and actions taken (Dutton and Jackson, 1987; Thomas et al., 1993). This takes the view that "interpretation involves the development or application of ways of comprehending the meaning of information: it entails the fitting of information into some structure for understanding and action (Thomas et al., 1993:241). Indeed, as Thomas et al., (1993:243) go on to observe, "a basic premise of research on interpretation in organisations is that the way a strategic issue is labelled or framed mobilises action is a particular direction". Two issue categories that have come to dominate the literature relate to whether managers interpret strategic change issues in terms of opportunities or threats (Jackson and Dutton, 1988).

In the words of Gioia et al., (1994:367) however, "attempts to change...reality should be studied in a way that taps into processes used to fashion understanding by participants themselves to avoid the imposition of alien meanings upon their actions and understandings"...and "to represent the experience and interpretations of informants, without giving precedence to prior theoretical views that might not be appropriate for their context". In this regard, the sensemaking lens underpinning interpretations of *collaboration,* and way in which interpretations are 'labelled', are explored as part of study.

In addition this study looks at how interpretations, actions, and influences *evolve over time.* As a process unfolds different interpretations emerge as the frame of reference and the perspective through which people view an event shifts (Isabella, 1990; Starbuck, 1976). Isabella (1990) provides the first explicit study of the evolving interpretations of a change event. Isabella's study, focusing on managers' evolving interpretations of key strategic events, reveals a series of four distinct interpretative stages - from *anticipation* to *confirmation* to *culmination* to *aftermath* with the transition from one stage to the next initiated by a trigger event and the personalisation of that trigger.

The focus of Isabella's study is on evolving interpretations of a key event, again however at the level of individuals and focused upon top management. In addition, this study does

not link interpretation to changes in action over time. The process of collaboration however is one where new roles, responsibilities, processes, practices etc. emerge over time. In turn, sensemaking is cyclical whereby actions taken, in addition to newly emerging events and circumstances become the basis for new sensemaking, triggering the need for new understanding and subsequent interpretations and actions. This cycle continues until new ways of working and interacting become the 'norm' or become commonly accepted ways of working and interacting. As discussed with respect to the process of collaboration, this may take time. Although studies have shown the link between interpretations and action, few studies, including Isabella's (1990) study explore the accompanying actions and how interpretations and actions are linked (Barr, 1998).

As Barr (1998:645) concludes "despite the proposed importance of interpretation to adaptation, little is understood about how interpretations change to accommodate changes in the internal or external environments or about the relationship between changes in interpretation and the timing and content of strategic change". In addition, Isabella (1990) observes that the model of evolving interpretations suggested within that study is somewhat limited in its descriptive power, whereby it is not known how generalisable it is to other types of events, and whether these stages only describe the evolving interpretations of managers. This will be considered as part of the discussion on findings relating to evolving interpretations of collaboration in this study.

Studies that have linked interpretations and action suggest that recipient interpretations of change plans are mediated by their own ways of thinking and the existing and emerging context of action such as influence relationships and political structures (Labianca et al., 2000; Gioia and Chittipedi, 1991; Gioia et al., 1994). As Thomas et al., (1993:245) observe with respect to links between interpretations and actions taken in response to strategic issues, "beliefs, perceptions, politics and goals (Staw, 1980) and the outcomes of prior actions and performance (Milliken and Lant, 1991; Weick, 1979) all conspire to complicate the process and give rise to nonlinear effects". Exploring interpretations and how they are mediated by these influences are central to understanding how and why a change process, including its intended and unintended outcomes, evolves (Barr, 1998; Smircich and Morgan, 1982). With respect to facilitating understanding and acceptance of collaboration, at team-level, within a buyer-supplier context a sensemaking perspective therefore suggests a means to gain insights into managing and influencing this process.

2.9 Research Questions

For those concerned with exploring how parties to collaboration interpret this process and how these interpretations are linked to action, a sensemaking lens suggests a means of attaining these insights. Looking at the process of collaboration as it is filtered through participant sensemaking can provide management with insights into why buyer and supplier parties think and act as they do in relation to changes they encounter in pursuing a strategy of collaboration, and what influences their thinking and actions with respect to engaging or not with this process. These insights should in turn offer some direction to those concerned with managing the sense that parties make of the collaboration process and, where necessary, influencing and aligning their respective sense of the process with the intended sense of the vision, transition, and likely outcomes of collaboration. Knowing what parties think, what drives them to act, and what influences these thoughts and actions should assist management's ability to influence this thinking and to align it with a collaborative agenda. Additionally, it may provide insights into what triggers to leverage or counteract in terms of their respective influence on the sensemaking process. As Geisler (1999:2) concludes, "If we can fill the gap between what we know about how managers deal with changes in their work organisations and how they frame these changes in their minds, we can thus substantially increase our understanding of why they behave in certain fashions...and we can add to our understanding of cognitive phenomena". Furthermore, in a buyer-supplier context, a sensemaking lens may provide insights into how sensemaking differs across buyer and supplier parties and also the commonality of issues in buyer-supplier sensemaking. This is particularly valuable in light of the potential for gaps in meaning, understanding, and agreement between and across firms engaging in the collaboration process.

As discussed in preceding sections, accessing interpretations and actions reveals the meaning or 'sense' that parties have made of a change process (Thomas et al., 1993). Drawing on preceding discussions in this chapter the first research question in this study therefore asks:

Research Question 1:

Q1. How do buyer and supplier parties interpret collaboration and how do their interpretations of collaboration evolve over time?

Additionally, this study seeks to explore how evolving interpretations are related, both temporally and in terms of content, to actions. Arguments within literature are made for changes in action following changes in interpretation. Alternatively, it is argued that interpretations are developed retrospectively to adapt to and fit with actions taken (Weick, 1995). Mapping out more clearly how changes in interpretations and changes in actions are related is a key part of this study. The second research question therefore asks:

Research Question 2:

Q2. What actions accompany buyer and supplier parties' interpretations of collaboration and how are these actions linked to their interpretations?

Whilst much of the literature on collaboration is focused upon efforts to facilitate parties' understanding and engagement with collaboration (e.g. Mattessich et al., 2001; Nooteboom, 2004) the mediating role of recipients' sensemaking, in addition to understanding how influences impact participant sensemaking, have not been explicitly explored. Collaboration suggests a process where people are called upon to enact some change in their existing patterns of thinking and acting, potentially forming new interpretations and adapting their actions accordingly. Sensemaking provides a lens for understanding and perhaps influencing how parties think and act with respect to these changes they encounter in pursuing a strategy of collaboration. A sensemaking lens is therefore used in this study to gain insights into facilitating buyer and supplier parties' understanding and acceptance of collaboration.

Accordingly, Chapter Three will develop a conceptual framework that can be used to inquire into the interpretative processes of sensemaking and the accompanying actions in relation to collaboration

2.10 Conclusion

This chapter presented a review and analysis of extant literature in the relevant areas of supply chain relationships, collaboration and sensemaking. *Section 2.1* introduced the sections in this chapter. *Section 2.2* discussed the importance of strengthening buyer-supplier partnerships as way for firms to achieve competitive advantage in the supply chain and introduced collaboration as a means for firms to realise such ambitions. *Section 2.3*

introduced collaboration and began to explore what may be involved in this way of working, as distinct from other forms of interaction, for firms interested in pursuing a strategy of collaboration. In an effort to further explore the transition towards a collaborative way of working for firms, *Section 2.4* considered the nature of collaboration goals with *Section 2.5* presenting a discussion of what is considered necessary for firms to collaborate successfully to achieve collaboration goals. *Section 2.6* introduced the sensemaking perspective adopted within this study, with *Section 2.7* discussing sensemaking in relation to collaboration in the buyer-supplier context. *Section 2.8* considered the insights and limitations of existing studies linking sensemaking and change with respect to the research objectives of this study. Finally, *Section 2.9* introduced the research questions this study poses in seeking to pursue its research objectives.

CHAPTER 3: A CONCEPTUAL FRAMEWORK FOR INQUIRY

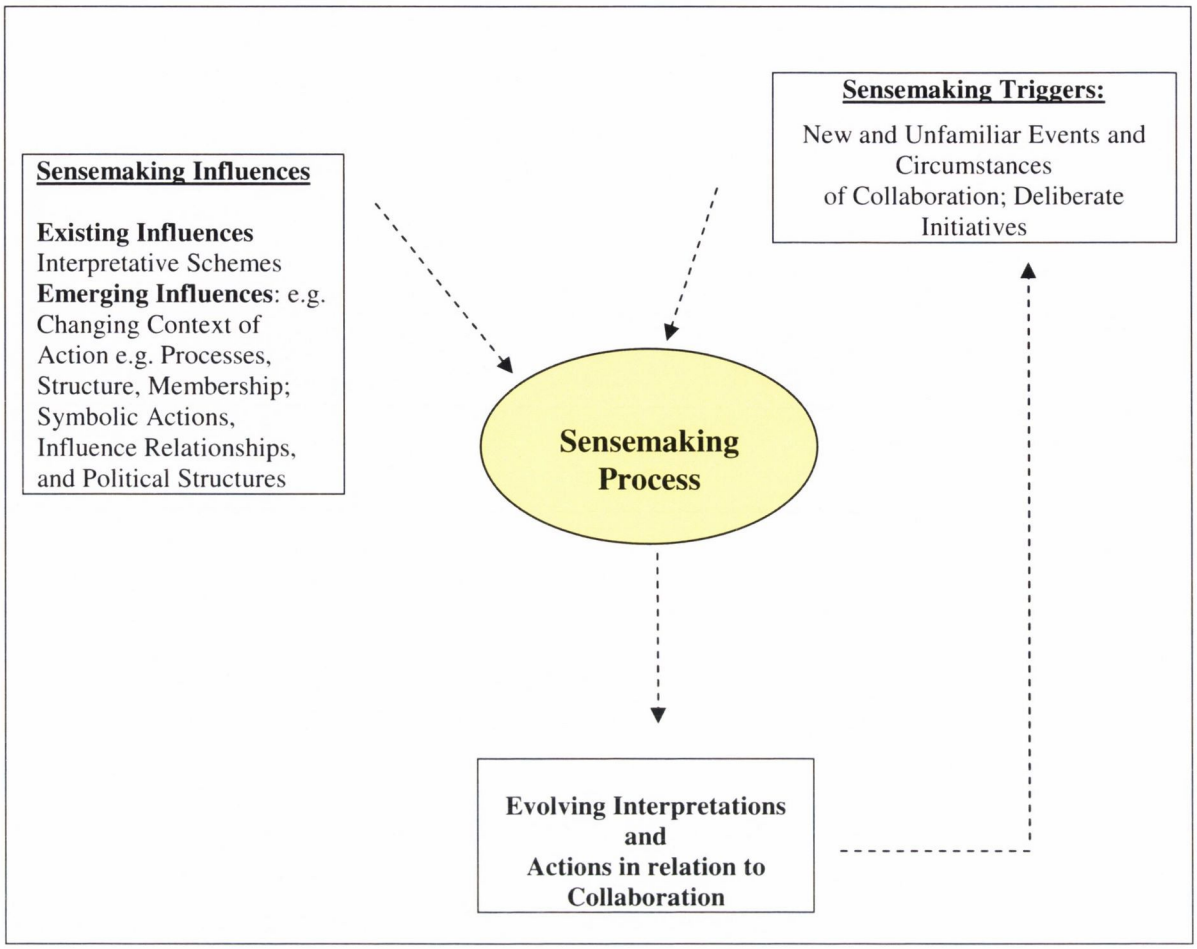
3.1 Introduction

This chapter introduces the conceptual framework for inquiry that underpins the research objectives of this study. The phenomenon of parties engaging in the process of collaboration as likely to encounter events and circumstances around which they seek to make sense was introduced in Chapter One. A sensemaking perspective was also introduced, as a means to explore how and why parties interpret and act in relation to a strategy of collaboration. Looking at the process of collaboration as it is filtered through participant sensemaking can provide insights into why buyer and supplier parties think and act as they do in relation to a strategy of collaboration and into what can be done to influence the transition of these parties towards understanding and acceptance of a collaborative way of thinking and acting.

To relate sensemaking interpretations and actions to the events and circumstances of collaboration requires an understanding of the process of sensemaking including triggers and influences that lead to interpretations and actions. This process of sensemaking needs to therefore be considered in relation to the triggers and influences that occur in the context of collaboration, with a view to relating these to the interpretations and actions that arise in the collaborative context. This chapter presents the conceptual framework that relates sensemaking to the events and circumstances of collaboration, and that is used to address the research questions in this study.

This conceptual framework is presented in Figure 3.1.

Figure 3.1: Sensemaking in Relation to the Process of Collaboration



This chapter introduces the variables in Figure 3.1 and sets out the proposed relationship between them. These variables are then organised into the framework in Figure 3.1, which will be used to explore the research questions in this study. This chapter is divided into six sections. *Section 3.2* discusses the process of sensemaking and its triggers with respect to collaboration. *Section 3.3* discusses additional influences on sensemaking in relation to the collaboration process. *Section 3.4* discusses buyer and supplier parties' interpretations and actions with respect to pursuing a strategy of collaboration. *Section 3.5* introduces the context for collaboration in this study as buyer-supplier partnerships with *Section 3.6* discussing the inter-subjective context for collaboration sensemaking. Finally, *Section 3.7* concludes this chapter.

3.2 The Process of Sensemaking

Literature on organisational change discusses unfamiliar events, activities and circumstances, which cannot be accounted for in terms of existing interpretative schemes, as triggering parties' attempts to resolve the ensuing ambiguity and uncertainty. Any Gioia and Chittipedi (1991:434) observe, any intended change needs to be understood in a way that "fits into some revised interpretative scheme or system of meaning". Interpretative schemes relate to shared assumptions between organisational members that shape how members think about their organisation and act in organisational situations. In an effort to make sense of such ambiguities and uncertainties being experienced, a more conscious sensemaking mode is enacted. This more conscious sensemaking mode is a social process which Weick (1995), drawing on Wiley (1988, 1994), refers to as the inter-subjective level of sensemaking.

Organisations are described by four, mutually-interrelated levels of sensemaking (Wiley, 1988). The *intra-subjective* level refers to the level of an individual who has, for example, thoughts, beliefs, feelings, desires, and intentions. The *inter-subjective* level is described as the level of social interaction at which actors create inter-subjective meanings. The inter-subjective level looks at the processes involved in the interplay between the individual and the generic subjective level during times of change. The *generic subjective* level is the level of social structure where social reality, characterised by generic subjectivity, is formed and maintained. Finally, the level of organisation culture is described as an *extra-subjective* level. The three levels of sensemaking above the level of the individual are considered to be understood, not in a hierarchical sense, but as different generalisations of social reality, each more distant from the individual (Wiley, 1994, 1988).

As discussed in Section 1.3, the conscious sensemaking mode revolves around social interaction processes which parties engage with in order to construct some level of shared understanding. The commonality between individuals' interpretative schemes leads to an enacted reality (Weick 1979, 1995) at group level, in the form of routines, rituals, systems, norms, assumptions, and beliefs which need to exist for coordinated activity to occur (Barr and Huff 1997; Langfield-Smith, 1992). The inter-subjective level of sensemaking involves verbal and written communication which may be formal or informal in nature including negotiations and decision-making in addition to stories, rumours, gossip, jokes, and behaviour and action signals (Isabella, 1990; Gioia and Chittipedi, 1991; Gioia and Thomas 1996; Labianca et al., 2000). As discussed in Section 1.4, engaging in these social

processes, change comes about through shifts in conversations and language (Barrett et al., 1995; Brown and Humphreys 2003; Ford and Ford 1995; Heracleous and Barrett 2001), whereby parties arrive at interpretations which more closely align their belief systems with their environments (Isabella, 1990; Barr, 1998; Griffith, 1999).

The decision to pursue a strategy of collaboration was described in Section 1.3 as likely to generate new and unfamiliar events and circumstances which trigger the process of sensemaking. Within Figure 3.1 *sensemaking* is positioned centrally as this conscious process which parties engage in when they encounter, and try to make sense of, these events and circumstances. Additionally within Figure 3.1 *sensemaking triggers,* arising from the decision to pursue a strategy of collaboration, are identified as these new and unfamiliar events and circumstances of collaboration around which parties may seek to make sense. Chapter Two described these events and circumstances of collaboration which may trigger sensemaking as including the goals of collaboration and the new ways of thinking and working to achieve these goals. This discussion revolved around factors for collaboration success. In addition, as noted in Section 1.3 a request to notice differences and to think about something in a new way may also trigger sensemaking, providing a deliberate initiative to begin sensemaking. These triggers may again arise from the context of collaboration with, for example, management, facilitators, or leaders providing such deliberate initiatives to begin the sensemaking process.

As the collaboration process unfolds, sensemaking is in turn likely to evolve as newly emerging events, circumstances, and initiatives of collaboration continue to unfold, thus triggering an ongoing revision of interpretations. Sensemaking is likely to continue until new, common ways of thinking, working and interacting develop, and individuals return to a less conscious sensemaking model (Weick, 1995). Identifying the events and circumstances perceived by the buyer and supplier parties in this study as significant in triggering their need to make sense - in addition to any deliberate initiatives for sensemaking - are explored as part of this study.

Figure 3.1 also shows a variety of influences, both existing and emerging, acting upon the sensemaking process. Influences on sensemaking are considered in the following section.

3.3 Influences on the Sensemaking Process

As discussed in Section 2.8, studies that have linked interpretations and actions suggest that recipient interpretations of change plans are mediated by their own ways of thinking and the existing and emerging context of action. When people are called upon to enact some change in their existing patterns of thinking and acting they look to make sense of it in a way that relates to previous understanding and experience. If resumption of sense is problematic, sensemaking is biased towards identifying substitute action or toward further deliberation. Sensemaking therefore revolves around the interplay between existing patterns of thinking and acting and new patterns of thinking and acting. Existing patterns of thinking and acting are represented by existing interpretative schemes. As noted in Section 1.5.1 these in turn may be drawn from frameworks such as institutional constraints, existing organisational plans and expectations, strategies in use, acceptable justifications and traditions (Labianca et al., 2000; Gioia and Chittipedi, 1991; Gioia et al., 1994), beliefs, perceptions and politics (Staw, 1980) and the outcomes of prior actions and performance (Milliken and Lant, 1991; Weick, 1979; Thomas et al., 1993). In making sense of the events and circumstances of collaboration parties may therefore draw upon existing interpretative schemes as the framework of meaning they ascribe to their interpretations and actions, which may influence and indeed constrain the sense that is made. Existing interpretative schemes may thus reflect the context in which parties initially attempt to make sense of collaboration.

Influences on sensemaking may also arise from the emerging context of action. Chapter Two discussed management, facilitators, leaders and internal organisational members as potential influence relationships acting upon sensemaking in relation to collaboration. In addition, influences may arise from the emerging context of action as existing influences evolve or new influences emerge from the events, circumstances, plans actions, and relationships of the emerging context. These emerging influences may again relate to success factors for collaboration, for example changes in the purpose, structure and processes of collaboration, in addition to changing political and support environments.

Figure 3.1 recognises influences on collaboration arising from the existing and emerging context of action, offering examples of such possible influences. Identifying what buyer and supplier parties perceive as influencing their evolving interpretations and actions with respect to pursuing a strategy of collaboration is central to this study.

3.4 Evolving Interpretations and Actions

Section 1.4 described sensemaking as involving interpretation in conjunction with action (Thomas et al., 1993) whereby accessing interpretations and actions reveals the 'sense' or meaning that parties make. Research on interpretation with respect to strategic change in organisations has commonly taken the approach of identifying the labelling of strategic issues, whereby the way a strategic issue is labelled fits it into a structure for understanding and action (Thomas et al., 1993) which in turn influences decisions and actions taken (Dutton and Jackson, 1987; Thomas et al., 1993). Subsequently, these new interpretations and actions, in addition to emerging events, circumstances, and any deliberate initiatives, trigger further sensemaking (Barley and Tolbert, 1997) until parties return to a less conscious sensemaking mode (Weick, 1995). In this way, sensemaking is considered a cyclical process, as represented in Figure 3.1.

Facilitating understanding and acceptance of collaboration was discussed as central to legitimising the vision, transition process, and likely outcomes of this process for the parties involved. Facilitating understanding and acceptance may in turn be achieved by influencing the sense that parties make of collaboration. Interpretations and actions represent parties' thinking and acting with respect to collaboration. Understanding and acceptance of the vision, transition and likely outcomes of collaboration are in turn likely to be indicated by thinking and actions related to the achievement of the goals of collaboration and to the emergence of a partnering skillset, mindset, and success factors for collaboration, as discussed in Chapter Two. Interpretation is a cognitive process with cognition in turn an internal process (Fiske and Taylor 1991) which cannot be measured directly. In light of this, the *results* of cognitive processes such as behaviours, written attributions, and verbal attributions may used as indirect reflections of the cognitive processes that generated them (Isabella, 1990; Barr 1998; Fiol, 1995).

Chapter Two reviewed literature on collaboration identifying examples of interpretations and actions that may be considered collaborative. Examples from Chapter Two include:

- Communication e.g. freely sharing information, using objective criteria to make fair decisions, working towards understanding and managing differences constructively and informal social interaction;
- Decision-making differences negotiated and consensus or compromise reached between parties;

- Dealing with conflict and tensions constructively between parties;
- Commitment evidenced by parties entering into obligations and living up to them;
- Problems solved by parties working together to define, analyse and resolve or improve a situation and jointly agreeing a solution;
- Parties clearly understanding roles, rights, and responsibilities and these should be carried out or enacted;
- Parties sharing power in a manner that reflects the interests of all participants and with reaching agreement via consensus or compromise rather than dominance and compliance; and
- Parties sharing the benefits and risks of collaboration and jointly creating and sharing resources

These examples suggest interpretations (or indirect reflections of interpretations) and actions which may indicate understanding and acceptance of the vision, transition and likely outcomes of collaboration.

Recognising that those engaged centrally in collaboration may act as *agents* who construct their own sense of collaboration - in addition to recognising the variety of possible influences acting upon their sensemaking- suggests parties' interpretations and actions in relation to collaboration may vary from those intended by management or indeed conducive to successful collaboration. Exploring actual interpretations and actions provides a basis for understanding how parties make sense of collaboration and the influences that act upon this sensemaking over time.

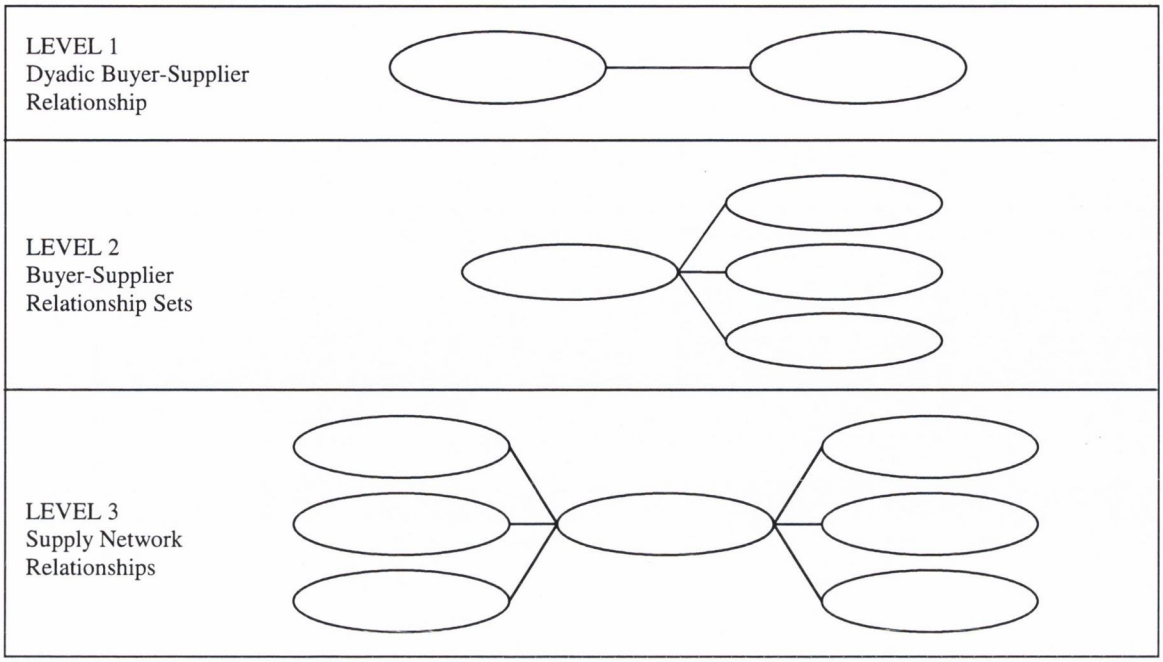
Figure 3.1 therefore suggests an evolving picture of triggers, influences, interpretations and actions allowing an understanding of how sensemaking is triggered (i.e. emerging events, circumstances, any deliberate initiatives, and the evolving interpretations and actions acting as a subsequent basis for sensemaking); how sensemaking is influenced (within the existing and emerging context of action); how new interpretations emerge as a result of these triggers and influences on interpretations; how new actions that arise are linked to interpretations; and those triggers that again emerge leading to sensemaking cycles. Based upon this evolving framework, the research approach in this study will explore, and subsequently map out, how interpretations and actions evolve and how evolving interpretations and actions are related.

Chapter One introduced the context of this study as buyer-supplier partnerships collaborating as a means to enhance supply chain performance. This context is considered in the following section.

3.5 The Context for Collaboration: Buyer-Supplier Partnerships

The trend towards developing closer buyer-supplier partnerships to improve performance and gain competitive advantage in the supply chain (e.g. Anderson and Katz, 1998; Rossetti and Choi, 2005) was discussed in Chapter One. In addition, Chapter One discussed collaboration as a means for buyer and supplier firms to integrate activities and work practices, to realise these partnerships and to achieve strategic improvements within the supply chain (e.g. Tabibzadeh and Prokopets, 2006; Trent, 2005; McLaren et al., 2002). Section 2.2 discussed such strategic improvements as typically revolving around direct relations between the OEM and a limited number of its 'main suppliers' from the tier below (Helper, 1991). Main suppliers were distinguished as those with whom buyer firms were likely to strengthen relations, seek additional demands and emphasise more stable, long-term, dedicated buyer-supplier relationships (Rossetti and Choi, 2005). Accordingly, for the purpose of this study the relationship between an OEM and its main or first tier supplier level is deemed appropriate. In addition, this study focuses on the dyadic buyer-supplier relationship. Van de Ven and Ferry (1980) present a classification of levels for studying inter-organisational relationships, which can be used to identify the level of analysis in this thesis. According to Van de Ven and Ferry (1980) three levels of analysis for studying inter-organisational relationships include: pair-wise (or dyadic) inter-organisational relationships; inter-organisational sets; and inter-organisational networks. This classification of the levels for studying supply chain relationships is presented in Figure 3.2.

Figure 3.2 Levels of Research in Supply Chain Relationships



Source: Van de Ven and Ferry (1980)

Given the focus of this study and its research objectives, the relationship between one buyer firm and one supplier firm is deemed appropriate.

Although the focus of this study is on buyer-supplier firms pursuing the strategic benefits of collaborative partnering, there is a need to characterise initial buyer-supplier relationships. Based on a study of the profiles of automotive OEM and first tier suppliers in the context of the automotive industry Bensaou (1999) presents a framework of contextual profiles of different types of relationships as a means to distinguish between buyer-supplier relationships. This classification of buyer-supplier relationships emphasises the contextual situation of the relationship through an assessment of the buyer's and the supplier's tangible and intangible investments. The study proposes four different types of relationships: *market exchange*; *captive supplier*; *captive buyer*; and *strategic partnership*. These four classifications of relationship assist in identifying the unique elements inherent in each type of buyer-supplier relationship. These relationship types are summarised in Table 3.1 below.

Table 3.1 Contextual Profiles for Buyer-Supplier Relationships

Captive Buyer	*Strategic Partnership*
• Technically complex product • Buyer dependent • Partner not easily replaceable • Strong bargaining power • Supplier proprietary technology • Few supply alternatives	• High level of product customization • Close to buyers' core competencies • Strong demand in market • Very competitive market • Supplier excellence • Early Supplier Involvement • Strong supplier proprietary technology
Market Exchange	*Captive Supplier*
• Standardised Products • No specialised assets invested • Many capable suppliers • Competitive, Price-based market • Low bargaining power • Low switching costs • No propriety technology	• Technically complex product • Heavy capital investment required • Strong demand in market • Fierce competition • Heavy dependency on the buyer • Low supplier bargaining power • Strong supplier proprietary technology

Source: Summarised from Bensaou (1999:38)

The *captive buyer* cell refers to an asymmetric relationship in which the buyer is held 'hostage' (Williamson, 1975) by a supplier that is free to switch to another customer. The *market-exchange* cell is characterised by the fact that neither party has invested specialised assets toward the other and hence can turn to the marketplace to change partners. In the *captive supplier* cell, the supplier makes substantial specialised investments to win and maintain the buyer's business. Finally, when both parties invest a high amount of specialised assets into the relationship, it is referred to as a *strategic partnership.*

Bensaou (1999) concludes that successful supply chain management requires the adoption of an appropriate management approach for each type of relationship. To manage a successful relationship requires matching high requirements (such as those suggested by the strategic partnership cell) with high capabilities and low requirements (such as those suggested by the market exchange cell) with low capabilities (Bensaou, 1999). Accordingly, key suppliers need to be managed closely with high levels of resource investments, whereas less time and effort may be given to managing relationships pertaining to less critical linkages.

This framework assists with conceptualising the initial relationship between buyer-supplier firms in this study. It assists in presenting each firm's initial profile as may reflect the

starting point from which firms seek to pursue a more strategic partnership through collaboration. Contextualising the buyer-supplier relationship within a specific industry will also help to further explicate the relationship profile. In addition, as discussed in Section 2.7, the inter-organisational context may act as an influence upon the sense that parties make of collaboration. These profiles may therefore provide some insights into the existing and emerging influences upon sensemaking.

3.6 The Inter-Subjective Context for Collaboration Sensemaking

Section 1.4 observed that individuals typically make sense by engaging with others whereby "individual representations (thoughts, feelings, 'intentions') become merged or synthesized ... into face-to-face conversations and interactions" (Wiley, 1988:258). The commonality between individuals' interpretative schemes leads to an enacted reality (Weick 1979, 1995) at group level in the form of routines, rituals, systems, norms, assumptions and beliefs, which need to exist for coordinated activity to occur (Barr and Huff 1997; Langfield-Smith 1992). As discussed in Section 2.5.4 collaboration is considered to require a structure which captures the collective capabilities of people across organisations (e.g. Jassawalla and Sashittal, 1999; Mattessich et al., 2001). Additionally, face-to-face, team-based interactions were identified as particularly suitable for structuring social interactions around collaboration (e.g. Mintzberg et al., 1996; Haskins et al., 1998; Boddy and MacBeth, 2000).

Working in a shared setting such as a face-to-face team, is seen to facilitate the emergence of integrative mechanisms such as repeated interactions, shared experiences, shared social norms, shared values and shared expectations (Bradach and Eccles, 1998; Latane et al., 1995). The essence of working in face-to-face teams is that members find themselves in the presence of certain others for long or short periods of time, usually for the purpose of achieving certain goals and objectives (Wheelan, 1994). Shared settings facilitate informal socialisation around stories, rituals and symbols, routines and norms (Reder and Schwab, 1989; Trevino, Lengel and Daft, 1987). The shared setting is also considered to influence organisational team members' understanding of tasks, roles, and the type of contribution that they may make to a given setting (O'Reilly and Flatt, 1989). A shared setting may also enable members to more readily make sense and reach a shared understanding of information, and the coordination of decisions and actions (Weisband, 1995). Although interpretations of the same event, in a shared context, may vary between participants,

shared social settings are still considered more conducive than other forms to constructing a shared understanding as they facilitate interactive and sharing behaviours (Weick, 1995). Knowledge, experience and comprehension, enabled by a pattern of interrelation, empower the collective to become more comprehensive and to understand more (Weick and Roberts, 1993).

In light of these observations a face-to-face team setting would seem suitable for the purpose of exploring sensemaking and how it evolves in relation to pursuing a strategy of collaboration between buyer and supplier parties. Specifically it suggests a structure which may help to capture the collective capabilities of people across organisations and a context to facilitate sensemaking at the inter-subjective level. For the purpose of studying how buyer and supplier parties make sense of collaboration each buyer and supplier party within this setting is considered a separate entity however. Although buyer and supplier parties may come together to think and work across organisational boundaries, each buyer and supplier party may seek to make sense of different events and circumstances and may make sense differently. Distinct buyer and supplier parties thus form the units of analysis in this study.

In summary therefore, Figure 3.1 presents the framework through which the research questions in this study will be addressed. The framework seeks to reflect the emerging process of sensemaking in relation to the process of collaboration in an inter-organisational buyer-supplier context. An understanding of how buyer and supplier parties make sense of collaboration, as how sensemaking evolves over time will be gained through exploring:

- Sensemaking triggers - new and unfamiliar events and circumstances of collaboration and deliberate sensemaking initiatives
- Sensemaking influences - influences from the existing and emerging contexts of action
- Evolving interpretations and actions

As the process of collaboration unfolds, interpretations and actions will be explored. In turn, an understanding of these interpretations emerge will be sought in terms of the triggers and influences perceived by the buyer and supplier teams in this study as influencing their interpretations and actions. The nature of these interpretations, in terms of how they are labelled or defined by the teams will be considered. In addition, related

actions will be considered in terms of how they link to interpretations. Interpretations and actions will also be considered with respect to indications of emerging understanding and acceptance of collaboration by these buyer and supplier teams. Such evidence can then be explored in terms of forces that teams perceived as influencing these interpretations and actions.

Chapter Four will describe the research philosophy and methodology, which underpin the empirical investigation undertaken within this study.

3.7 Conclusion

This chapter was structured around six sections. *Section 3.1* introduced the conceptual framework underpinning the research aims of this study, in addition to providing a brief overview of the structure of this chapter. *Section 3.2* discussed the process of sensemaking and its triggers with respect to collaboration. *Section 3.3* discussed additional influences on sensemaking in relation to the collaboration process. *Section 3.4* discussed the evolving interpretations and actions as reveal the sense that parties make of collaboration. *Section 3.5* introduced the context for collaboration in this study. Finally, *Section 3.6* discussed the inter-subjective context for collaboration sensemaking.

CHAPTER 4: RESEARCH DESIGN AND ANALYSIS

4.1 Introduction

This chapter describes the research philosophy and methodology underpinning the empirical investigation within this study, in addition to the data collection and analysis procedures used.

In overview, the research in this study:

- is undertaken from the interpretivist perspective of inquiry;
- uses a case-based process approach with multiple case sites;
- involves buyer and supplier partnerships (representing a dyad relationship between one buyer (OEM) and one pre-existing, first-tier supplier operating in the same industry;
- focuses on the team-level using the consensus method for gathering team-level data; and
- focuses on the results of cognitive processes including actions, and also written and verbal attributions

This chapter is divided into eleven sections. *Section 4.2* introduces the interpretivist approach used in this study and the philosophical assumptions underpinning this approach. *Section 4.3* presents the research method used in this study, specifically a case-based, process approach, with *Section 4.4* discussing research design considerations with respect to the use of this method. *Section 4.5* addresses a further complexity in this study, namely the need to align interpretation as an individual phenomenon, and the team-level as the unit of analysis of interest in this study. *Section 4.6* addresses the execution of the research design, introducing the CO-IMPROVE project used as the empirical research site for this study. This section explores the structure, research method, and researcher's role with respect to CO-IMPROVE considering and distinguishing these with respect to this study. *Section 4.7* discusses the data collection methods used in this study, distinguishing these from data collection in CO-IMPROVE. *Section 4.8* evaluates the data collection approach using key data collection principles. *Section 4.9* introduces the data and data analysis methods with *Section 4.10* providing an evaluation of the overall research design. Finally, *Section 4.11* concludes this chapter.

4.2 Research Philosophy

All research is based upon some underlying philosophical assumptions about what constitutes 'valid' research and which methods are deemed most suitable. Differing philosophies have their own strengths and weaknesses, with opposing views on all sides. The clearest method for deciding which views to take depends upon the nature of inquiry, i.e. the nature of the research question (s). The research objective in this study is to explore the interpretations and actions of buyer and supplier parties with respect to pursuing a strategy of collaboration. The research focus is therefore upon change recipients and how they make sense of the events and circumstances they are experiencing as part of this process. The assumptions underpinning this study are therefore firstly, that understanding and action are based upon parties' interpretations of events and circumstances that they experience (Rabinow and Sullivan, 1979) and the meaning that they assign to these (Daft and Weick, 1984). Secondly, organisational reality is essentially socially constructed (Berger and Luckman, 1966) whereby "interpretations emerge within an inter-subjectively negotiated framework of understanding" (Gioia and Thomas, 1996:374). An approach that focuses on the interpretation and meaning systems of parties is essentially interpretivist in nature (Brown, 1994; Isabella, 1990). Gioia et al. (1994:367) describe this as "an approach that attempted to represent the experience interpretations of informants without giving precedence to prior theoretical views that might not be appropriate for this context". This approach attempts to 'tap into' the processes used to develop understanding by the participants themselves (Gioia and Thomas, 1996). The interpretivist approach is therefore deemed appropriate by the researcher for the purposes of this study.

In using this approach an understanding of its perspective, strengths, and weaknesses is deemed important. These are considered in the following section.

4.2.1 The Interpretivist Perspective

The interpretivist perspective is based upon the ontological assumption that reality and our knowledge thereof are social constructions, incapable of being studied independently of the social actors that construct and sense-make their reality. Instead of "seeking unidirectional cause-effect relationships, the focus is to understand the actors' view of their social world" (Khazanchi and Munkvold, 2000:34). Interpretive studies generally attempt to understand

phenomena through the meanings that people assign to them. According to Easterby-Smith, Thorpe and Lowe (1991) interpretivism arose in reaction to the application of positivism to the social sciences. The philosophy of interpretivism stems from the view that "the world and reality are not objective and exterior but that they are socially constructed and given meaning by people" (Easterby-Smith et al., 1991:24).

Within the interpretivist approach the researcher believes that objective knowledge, or human knowledge and experience, is not available from quantitative research, and a more subjective experience of the research participants must be employed. Access to reality is therefore through social constructions such as language, consciousness and shared meanings (Hirschheim, 1992). A basic tenet of interpretivism is its assumption that multiple realities exist within each and every social setting, which fluctuate and change overtime, therefore defying the concept of prediction or control within the research question (Gill and Johnson, 1991). For Guba (1981) the interpretivist research approach is almost non-quantifiable by nature, allowing the researcher to use a methodology that will address research issues of a subjective nature.

Interpretivists believe that humans attach meaning to surrounding events and therefore select courses of action that can be reflected in the research data (Gill and Johnson, 1991). In other words, interpretivists apply an 'inductive' research methodology, which means that for the researcher to fully understand social phenomena, they must become fully immersed in their field of research, whereby full involvement is deemed necessary in order to acquire a more 'valid' and 'reliable' research understanding. This philosophy runs in direct contrast to the positivist or 'deductive' approach, where social research phenomena are judged to be of like nature to the physical and natural sciences.

The decision to use this approach suggests an understanding of its strengths and weaknesses is important. Table 4.1 outlines the strengths and weaknesses of this interpretivist paradigm.

Table 4.1 Interpretivist Paradigm: Strengths and Weaknesses

Strengths of Interpretivist Paradigm	Weaknesses of Interpretivist Paradigm
1. Ability to look at change processes over time	1. Data collection is time consuming and needs many resources
2. Ability to understand meanings	2. Analysis and interpretation of data may be difficult
3. Ability to adjust to new issues and new ideas as they emerge and to contribute to the evolution of new theories	3. Difficult to control pace, progress, and end-points of study, hence often criticised as 'untidy'
4. Provides ways of gathering data that is seen as natural rather than artificial	4. Often assigned low credibility by policy makers

Source: Easterby-Smith et al., (1991:32)

From its strengths it suggests interpretivism offers the ability to look at processes over time, incorporating new insights into emerging practices and theories. In addition, the interpretivist approach is considered suited to the study of meaning within a process. Again these advantages underpin the appropriateness of using the interpretivist approach in this study. The interpretivist approach also has disadvantages and limitations however. These include its burden on research resources, for example with data collection both time and financial requirements can go over the pre-planned research budget. Also, with qualitative data collection the researcher is often faced with a huge task of analysing the research data upon collection, for example with interviewing or observation much of the data may be difficult to develop hypotheses for. The researcher acknowledges these disadvantages in using the interpretivist approach.

Having defined the research philosophy underpinning this study, the following section will describe how this philosophy will be applied through the selection of an appropriate research method.

4.3 The Research Method

According to Myers and Avison (2002:7) "a research method is a strategy of enquiry which moves from the underlying philosophical assumptions to research design and data collection". The choice of method will in turn influence the way in which the researcher

collects data. In light of the underpinning interpretivist approach, and reflecting the research philosophy and research objectives of this study, a process approach is adopted involving real-time observation (Pettigrew, 1992), using a qualitative multiple case study design (Yin 1994) and conducted from the interpretivist perspective of inquiry (Brown 1994, 1995; Isabella 1990). This approach is consistent with other studies which take an interpretivist approach to understanding the strategic change process (e.g. Gioia and Chittipedi, 1991; Gioia et al., 1994; Balogun and Johnson, 2003, 2004; Isabella, 1990; Poole and Van de Ven, 1989).

4.3.1 A Process Approach

Process research is concerned with how things evolve over time and why they evolve in a certain way (Van de Ven and Huber, 1990). Process theories provide explanations in terms of events, often a sequence of phases that occur over time, leading to an outcome (Langley, 1999). A process approach recognises the possibility for different stimuli to arise across different phases of the development process and that these phases may be interlinked, with the impact of these stimuli feeding forward into the next phase of the overall process.

Two principal methods for addressing dynamic phenomena are summarised by Langley (1999). The first approach is categorised as one where 'a priori' process theories are formulated and tested, using "coarse grained longitudinal time-series and event–history methods" (Langley, 1999:691). The second approach involves the researcher becoming immersed in the processes themselves, collecting fine-grained, qualitative data often in real-time (Langley, 1999), examining events directly (Mintzberg, 1979) and attempting to extract theory from the ground up (Van de Ven, 1992; Pettigrew, 1992). As Kawalek and Jayaratna (2003:401) conclude, "exploring a topic that is not clearly understood requires an approach to social inquiry that is characterised by deep saturation of a researcher into a social situation".

In light of the preceding discussion on inductive research methodology, this study adopts the latter approach. Reflecting the stance of Gioia et al., (1994) however, to be interpretative in this sense does not mean that the researcher engages in deeper and deeper levels of subjective interpretation. Rather, being interpretative in this sense "...represents the informants' experiential structure and subjective understanding in terms that are

adequate at their level of meaning" (Gioia et al., 1994:367). In addition, like other research on the study of change, this study offers a narrative account and accompanying theoretical analysis that gives balanced voice to the multiple perspectives and provides the potential for insight into the dynamics of the process.

4.3.2 A Case Study Approach

Creswell (1998) describes the case study as a system bounded by time and place. The 'bounded system' is the actual case under consideration which may be a program, event, activity, or group. A case study approach is identified as appropriate for data gathering when the researcher has little control over events and when the goal is to describe incidence or prevalence of phenomena (Leonard-Barton, 1990; Yin, 1994). The decision to use a case study method is based on its suitability to explore relatively contemporary phenomena, within a real-life context, especially when the theory is underdeveloped (Benbaset and Goldstein, 1987; Eisenhardt, 1989). It is considered appropriate for a number of different purposes: exploratory, theory testing, theory building, and theory extension / refinement (Voss, Tsikriktsis and Frohlich, 2002). A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (people, groups, or organisations).

In comparison to other research methods the case study may have less a priori knowledge of what variables are of interest or required for field study. In addition, the boundaries are not clearly evident at the outset of the research and no experimental control or manipulation is used (Benbasat and Goldstein, 1987). Yin (2003:13) provides a technical definition of a case study as being "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident".

Meredith (1998:443) describes the principal strengths of the case study approach as follows:

- The phenomenon can be studied in its natural setting, and meaningful, relevant theory generated from the understanding gained through observing actual practice

- The case method allows the meaningful questions of why... to be answered with a relatively full understanding of the nature and complexity of the complete phenomenon
- The case method lends itself to early, exploratory investigations, where the variables are still unknown and the phenomenon not at all understood

These insights into the nature of the case study approach, and the purposes for which it is seen as appropriate, further support the decision to use the case method in this study. Specifically, it is consistent with the study of the transformation towards a strategy of collaboration, an event over which the researcher has little control; it lends itself to early, exploratory investigations where the variables are still unknown as is again consistent with this study; and it allows exploration of a relatively contemporary phenomena, within a real-life context, in order to build theory.

Data analysed from different cases and from different types of evidence can provide in-depth explanations suited to understanding the nature and complexities of the processes investigated (Yin, 2003). This method allows the data to converge in a triangulating fashion through the integration of multiple sources of evidence. In addition, analytical conclusions from comparative cases are often considered more compelling and the overall study more robust (Herriot and Firestone, 1983). Eisenhardt (1989) argues that cross-case analysis should preferably be used for searching patterns whereby Leavy (1994) suggests that theory generation is considered difficult without some form of comparative case analysis. As a result of cross-case analysis the likelihood of achieving an accurate and reliable theory is improved (Stoecker, 1991). In light of these insights, and reflective of the research objectives of this study both to build rich theory with respect to a complex process, and to search for patterns across cases, a 'collective case design' - where a researcher studies a number of cases in order to investigate a phenomenon by comparative analysis (Stake, 2003) – is employed in this study. This collective or 'multiple cases' approach ensures results are therefore not particular to one case. The next section identifies the research design that will guide this study.

4.4 Research Design

The research design involves a number of decisions relating to the use of the case study method. In particular, these include:

- Case Selection
- Number of Cases
- Level of Analysis

(i) Case Selection

For Miles and Huberman (1994) one of the most important elements of a case study approach is making a proper selection of cases. The reference population in this study involves buyer and supplier partnerships representing a dyad relationship between one OEM (buyer) and one pre-existing first-tier supplier operating in the same industry and interested in pursuing a strategy of collaboration as a means to enhance supply chain performance. For the purpose of cross-case analysis, research also suggests that studying firms in a single industry, that are all facing a similar event, is a means to "minimise the impact of confounding effects" (Barr, 1998:649) allowing for control of the impact of industry characteristics upon interpretations. Additional criteria influencing case selection includes cases which are deemed to be most accessible and also cases where the most time can be spent by the researcher to provide an "opportunity to learn" (Stake, 2003:153). Awareness of these issues informs the selection of cases in this study.

(ii) Number of Cases

The case study may use single or multiple case sites (Yin, 2003). Single case sites are considered advantageous in relation to the depth of observation they offer (Voss et al., 2002), particularly in relation to a unique, extreme, or revelatory site (Yin, 1994). Multiple case sites are considered by many to be variants within the same methodological framework as the single case-study (Yin, 2003) yet evidence from multiple case designs is often considered more compelling and robust (Herriot and Firestone, 1983). This study focuses on similar events in separate organisational relationships, whereby a collective or multiple case study type of design is deemed most applicable for these purposes (Yin, 2003). These case studies will take the form of "multiple embedded cases" (Yin, 2003:40) or different cases with similar units of analysis. This approach should help to reduce the risk of making incorrect assumptions from a single case, and also enable investigation of a phenomenon by comparative analysis (Stake, 2003). As a result, the likelihood of achieving an accurate and reliable theory is improved. In addition, multiple cases help to increase external validity (Leonard-Barton, 1990), avoid observer bias and strengthen the generalisability of the study (Yin, 2003).

(iii) Level of Analysis

Chapter Three discussed the decision to study collaboration in face-to-face team settings where buyer and supplier teams come together to think and work across organisational boundaries with respect to pursuing a strategy of collaboration. Such 'collective' settings are considered appropriate for the study of sensemaking at the inter-subjective level of sensemaking (e.g. Weick and Roberts, 1993) and are also used commonly to achieve inter-organisational collaboration (Jassawalla and Sashittal, 1999; Haskins et al., 1998; Mintzberg et al., 1996). The study of groups of people over time can take different forms i.e. trend, cohort and panel studies (Davies, 1994; Mingione, 1999). The *trend study* samples different groups of people at different times from the same population. This approach is however deficient for situation-producing questions. A *cohort study* is a study in which subjects who presently have a certain condition and / or receive a particular treatment are followed over time and compared with another group who are not affected by the condition or treatment under investigation. *Panel studies* measure the same sample of respondents i.e. a constant population at different points in time. Measuring a constant population enables the observation and exploration of shifting mindsets and behaviours within constant populations over time, revealing shifting attitudes and patterns of behaviour (Davies, 1994; Davies and Dale, 1994; Mingione, 1999). This approach is particularly useful for looking at long-term or cumulative affects that may be hard to analyse using a case study at a singular point in time. Cognisant of the objectives to of this study to observe evolving interpretations and actions over time, a constant population is deemed most appropriate for this study. In light of this, buyer and supplier teams where membership remains constant for the duration of the study are ideal case sites in which to pursue the research objectives.

Although buyer and supplier teams may come together to form a dyad team (consisting of buyer and supplier team members jointly), each team is a separate entity, characterised by unique contexts and concerns. Each team encounters and responds to sensemaking triggers in a way that reflects its unique starting point, existing interpretative schemes and influences. Sensemaking, and evolving interpretations and actions, are therefore considered at team level within this study, with the focus on exploring and understanding the evolving interpretations and actions of *each* buyer and supplier team. Critical to this objective however is the need to align the study of interpretation as an individual cognitive process with the team-level as the unit of analysis in this study. With the focus on measuring team-

level data, the following section discusses the alignment of the individual cognitive process of interpretation and the team-level of interest in this study.

4.5 Measuring Team-Level Data

As a first issue in focusing upon interpretation as the construct of interest in a study, interpretation is a cognitive process, with cognition in turn recognised as an individual phenomenon (Larson and Christensen, 1993). A second issue with respect to research that attempts to identify cognitive processes, is that these processes cannot be measured directly as cognition is recognised as an internal process (Fiske and Taylor, 1991). Each of these issues is addressed within this section.

4.5.1 Interpretation as a Cognitive Process: The Consensus Method

Interpretation, as a cognitive process, introduces the notion of subjectivity and suggests an individual-level construct. This draws upon the assumption that individuals actively create or enact their reality (Berger and Luckman, 1966; Smircich and Stubbart, 1985). Cognition in this study is conceived of as 'thought operationalised as interpretation', with the emphasis upon not measuring but showing how thought patterns become intertwined with social circumstances of organisational activities. Yet consistent with assumptions in interpretative studies (e.g. Isabella, 1990), frames of reference may be created through social interchange or negotiated over time, capturing an overarching group 'reality' (Burrell and Morgan, 1979; Walsh, Henderson and Deighton, 1988). Also, others' views may influence people's interpretations within the process (Kiesler and Sproull, 1982; Morgan, 1986; Gioia, 1986). Additionally, as discussed in Section 3.2, when individuals start to act in a more conscious sensemaking mode it reflects the inter-subjective level of sensemaking whereby the commonality between individuals' interpretative schemes leads to an enacted reality at group level (Weick 1979, 1995) in the form of routines, rituals, systems, norms, assumptions and beliefs. Indeed, as Isabella (1990:10) concludes "...interpretative research is often built upon transpired events around which a collective viewpoint has emerged". Given the focus on the team-level in this study, the 'collective' viewpoint is therefore central.

When defining an attribute of a team, researchers must demonstrate that a team-level construct is being assessed (Klein, Dansereau and Hall, 1994). Bar-Tal (1990) summarised

four requirements relating to team-level constructs:

- The construct must reflect the team as a whole rather than individuals as separate units;
- Agreement amongst members of a team with regard to the construct must be demonstrated;
- The construct must discriminate amongst teams; and
- The origin of the construct must reflect the processes of interaction that occur within the team

The most common approaches for measuring team-level data are based on the assessment of individual team member perceptions (e.g. Campion, Medskar and Higgs, 1993; Tesluk et al., 1997). One method is to aggregate across individual responses to derive a team-score (e.g. Gibson, 1999; Guzzo et al., 1993). Another method uses individual perceptions of a team-level attribute (e.g. Earley, 1993; Klein et al., 1994). These aggregation approaches have been criticised by some however for being non-representative and for failing to truly capture team-level processes (Klein et al., 1994; Gibson, Randel and Earley, 2000). In turn, they may omit team discussions, which may provide insights as to why members think and feel the way that they do.

In contrast to these, the *consensus,* or group-discussion method, uses data collected from 'intact team members' (Gibson et al., 2000). This approach involves the team as a whole, responding to a team-level construct, using consensus decision making. The team provides only one response and there is no need for the researcher to aggregate individual responses. The consensus method helps to ensure that the assessment of the construct reflects the interactions that occur within a team. It is also useful in capturing a team's collective history. Collective history can be considered a socially constructed, shared past, evidenced by team norms, routines and patterns of interaction (Bar-Tal, 1990; Gibson et al., 2000). The consensus method is also acknowledged as a valuable approach for capturing both quantitative and qualitative data.

The consensus method is therefore considered a suitable method to use in this study. Indeed, as noted in Section 1.5.1, "change efforts seldom happen by decree but often hinge on consensus-building" (Gioia and Chittipeddi, 1991:434). The articulation of negotiated interpretations by individual team members are proffered by the team as a whole to form

the stated basis for interpretation and associated actions during collaboration with the dyad partner team.

A number of limitations are typically associated with the consensus method. These limitations include status differentiation (Kirchler and Davis, 1986) conformity (Kiesler and Kiesler, 1969), and the influence of dominant members and groupthink (Janis, 1982). As an approach to decision-making it can also be costly in terms of the time involved discussing different items in order to reach consensus. Alternatively, these discussions may result in group-conflict. Literature on organisational change and consensus decision making offers a number of suggestions for overcoming these limitations (Kerrigan, 2001; Lawrence-Butler and Rothstein, 1991). Preparing teams on how to reach consensus and providing the support of an experienced facilitator should enhance the value of assessing team-level constructs using a consensus approach. Instructing teams on consensus decision making can also result in process gains. A number of facilitation tasks are identified to assist with managing consensus decision making (Kerrigan, 2001; Avery et al., 1999). These include:

- Balancing people who talk a lot against quieter members and directing conversations to include silent members;
- Keeping the process on time and following the agenda;
- Clarifying statements and summarising agreements and disagreements;
- Identifying common threads and expressing emerging thinking and ideas;
- Making sure all ideas are heard and understood;
- Repeatedly checking to ensure each member is satisfied

These team-facilitation methods will be used in this study to ensure contributions from each team member.

4.5.2 Measuring the Internal Cognitive Process

A second issue with respect to research that attempts to identify cognitive processes is that these processes cannot be measured directly, with cognition recognised as an internal process (Fiske and Taylor, 1991). In light of this inability to measure directly the construct of interest, Barr (1998:647) observes "the results of cognitive processes such as behaviors,

or written or verbal attributions, must be used as indirect reflections of the cognitive processes that generated them" (Barr, Stimpert and Huff, 1992; Davis, Dickmann and Tinsley, 1994; Fiol, 1995; Isabella, 1990). Barr (1998) identifies key considerations in selecting statements for analysis where actions, and written or verbal attributions, are used to represent cognitive processes. These considerations include:

- whose statements to analyse;
- what is the best way to elicit those statements; and
- what types of statements are of interest

In this study the constructs of interest are the interpretations and associated actions of the teams directly involved in pursuing a strategy of collaboration. In light of Barr's (1998) first consideration i.e. *whose statements to analyse*, this study will analyse the statements of intact buyer team and supplier team members i.e. involving the team as a whole. Additional considerations relating to the *best way to elicit those statements* and the *types of statements of interest* will be addressed later within this chapter.

In summary therefore, this study:

- is undertaken from the interpretivist perspective of inquiry;
- uses a case-based process approach with multiple case sites;
- involves buyer and supplier partnerships (representing a dyad relationship between one buyer (Original Equipment Manufacturer or OEM) and one pre-existing, first-tier supplier operating in the same industry;
- focuses on the team-level using the consensus method for gathering team-level data; and
- focuses on the results of cognitive processes including actions, and also written and verbal attributions

The implementation of this research design is discussed in the following section.

4.6 Execution of the Research Design

The objectives of this study are to explore how and why buyer and supplier parties make sense of the events and circumstances of collaboration 'as they do'. This understanding of

buyer and supplier sensemaking, with respect to pursuing a strategy of collaboration, should provide insights for those concerned with managing and influencing the understanding and acceptance by parties of the vision, transition and likely outcomes of collaboration. Going beyond 'what parties think is working' and 'not working' this study seeks to explore 'why' parties are noticing certain things; why they are thinking about and seeing things in a certain way; and what is influencing their thinking over time. It seeks to achieve these objectives by exploring the sensemaking lens through which parties' views and ideas are shaped, and by looking at the resulting patterns of beliefs and thinking over time. This allows an understanding of the bases for thinking and action, for example assumptions, projections and biases, in addition to the key influences on interpretations and links to action. In light of the objectives of this study, an EU-funded 5th Framework Project entitled "CO-IMPROVE" – Collaborative Improvement in the Extended Manufacturing Enterprise - was identified as an appropriate research initiative providing an opportunity for the execution of the research design in this study. The CO-IMPROVE Project is discussed in the following section.

4.6.1 Introduction to the CO-IMPROVE Project

Commencing in March 2001, CO-IMPROVE was an EU-funded research project, which extended over a three-year period. The objectives of CO-IMPROVE were to develop a *business model* to support the design, implementation, and ongoing development of collaborative improvement between partners in the EME, supported by *a web-based software system*, and *action learning-based implementation guidelines*. The action learning approach was envisioned as a means to explore and understand how supply chain parties collaborated, asking them to reflect upon what worked and what didn't, and through these reflections to identify barriers and enablers to collaboration. In this way changes in the structure and design, in addition to tools and methods as appropriate for collaborative supply chain improvements, could be identified. This understanding was to be gained through observing and engaging collaborating teams in collaborative activities and in the process of reflection upon their progress and experiences.

These objectives were sought with a view to enabling change in the quality of inter-organisational relationships in supply chain management within extended manufacturing enterprises (EME's). Busby and Fan (1993) define the Extended Manufacturing Enterprise

as a way of combining manufacturing operations that is an alternative both to pure market and to pure hierarchical structures. It is considered a globally dispersed collection of strategically aligned organisations (Stock, Greis and Kasarda, 2000). The EME concept has brought new attention to how organisations co-ordinate the flow of information and materials across their supply chains. It is characterised by information channels and knowledge sharing that allow buyers and suppliers to adapt readily to changing needs and circumstances (Busby and Fan, 1993). In this idea the suppliers are viewed as part of the principal company (Stock et al., 2000).

Collaboration was seen as central to achieving the objectives of CO-IMPROVE, facilitating firms to create and maximise synergy between their capabilities, while allowing each firm to achieve its own strategic goals (Coghlan, Coughlan and Brennan, 2004). Information and communication technology, and action learning, would facilitate the development of collaboration, helping to bridge geographical barriers (Coghlan et al., 2004) A *researcher network* was formed around each of the business model, technical system and action learning guidelines of CO-IMPROVE.

CO-IMPROVE comprised a number of industrial and academic partners. *Industrial partners* were drawn as three EMEs, one each located in Denmark, The Netherlands and Italy. The academic partners selected the EME's according to the following criteria:

- Ease of access to research sites;
- Consent to the project duration; and
- Ambitions for collaborative improvement with selected supplier firms.

The system integrator firms chose the supplier firms based upon the following criteria:

- Pre-existing first-tier suppliers of current, or with the potential for, strategic importance; and
- Willingness to engage in collaborative improvement initiatives.

Within each EME network, distinct buyer-supplier dyad groups formed the principal working units. Each dyad group consisted of between four and eight members selected on the basis of their expertise relative to the operational improvement task. Membership consisted of top and middle management and executives to the manufacturing process such as purchasing personnel and / or engineers. These participants were involved directly in

the change process and were responsible for managing and implementing improvement tasks and engaging in the structured action learning methodology of the CO-IMPROVE project. In addition, two IT companies - comprising an ICT developer based in Sweden and a subcontractor based in Greece - participated.

Academic partners within the CO-IMPROVE network were drawn from Aalborg University (Denmark), Twente University (The Netherlands), Politecnico di Milano (Italy) and Trinity College (Ireland). The researchers in CO-IMPROVE were organised into four teams, each drawn from one of these four institutions. These four teams collectively comprised the researcher learning network (Coghlan et al., 2004). The researcher learning network met three times over a five month period prior to the start of the action learning work-package. These meetings involved training on action research and action learning methods. Local researcher networks were also set up in each country; Denmark, Italy and The Netherlands. Researcher teams, each drawn from the participating universities, organised and facilitated the efforts of each company learning network. In turn, these researchers formed a researcher learning network and collaborated to apply their collective knowledge of supply chain collaboration and to develop the CO-IMPROVE approach network (Coghlan et al., 2004).

4.6.2 CO-IMPROVE as an Opportunity to Explore Sensemaking

As discussed, the objectives of this study are quite in contrast to those of CO-IMPROVE, and go beyond 'what parties think is working' and 'not working' to explore the sensemaking lens underpinning buyer and supplier collaboration or 'why' parties think and act as they do in relation to collaboration, and what influences thinking and action. Reflecting on the objectives and structure of CO-IMPROVE however suggests this research initiative as appropriate for the purposes of this study. Although CO-IMPROVE was focused upon the design, implementation, and ongoing development of collaborative improvement, firms were selected based upon a pre-existing relationship but without prior experience of collaboration. This suggests a sensemaking occasion whereby parties asked to participate in CO-IMPROVE would be confronted with the need to potentially revise previous ways of thinking and working with partner firms and to engage in new ways of thinking and working as appropriate for pursuing a strategy of collaboration. Whilst

collaboration, as a process, suggests that new ways of thinking and working evolve over time, the initial introduction and early stages of the project would present themselves as key stages for facilitating understanding and acceptance of the vision, transition process, and likely outcomes of collaboration. Specifically, parties are being introduced to the concept and constructs of collaboration for the very first time with the likelihood of encountering new and unfamiliar events, activities, and circumstances around which they may need to make sense, such as figuring out 'what collaboration means' and 'what it might mean for them'. As a result, CO-IMPROVE offered an occasion for sensemaking; the focus of this study.

For the purposes of this study the researcher worked with the Italian EME, which operated within the aerospace industry. Access to this research site was made available to the researcher, with the opportunity for direct, in-depth, access to the industrial partners. *Section 1.2* emphasised the importance of supply chain collaboration with particular reference to high-risk and high fixed-cost industries such as aerospace. Accordingly this research site suggested both an interesting and viable opportunity to address the research objectives of this study. The structure of CO-IMPROVE in the selected research site (Italian EME) is discussed in the following section.

4.6.3 The Selected Research Site

The Italian EME was organised into four dyad teams with each dyad team comprising one buyer and one supplier team. Each of the buyer and supplier teams typically comprised four participants considered to be the most appropriate respondents in light of the specific nature of collaborative initiatives to be undertaken by the teams. Membership of the teams comprised top and middle management and executives to the manufacturing process such as purchasing personnel and / or engineers. Each dyad operated for a fifteen-month period. The first three months of the project revolved around project launch and introduction activities. These initial workshops focused on introducing the concept and goals of collaboration. Collaboration was introduced by the SI leader and project facilitators (from the local researcher network) as an opportunity for each firm and each team to benefit from strategic and relational improvements between the teams. During the second workshop the SI leader discussed his strategic vision for future relationships with each of the supplier firms. These workshops were aimed at helping the dyads to develop a shared vision around collaboration and agree shared improvements between the teams. Project

facilitators worked with each dyad to assess joint improvement needs between the teams, using a questionnaire these facilitators developed for this purpose. This questionnaire guided the identification of areas for collaboration improvement between the firms.

Improvement needs were identified by buyer and supplier teams separately at first with each team ranking selected improvement areas in terms of importance. Teams then worked jointly to select improvement areas of mutual interest and benefit but also considered realistically attainable by the teams and management within the time-frame of the project initiatives (six months for each initiative). This approach was informed by an awareness of the need to ensure that collaboration goals, at least initially, were clear and achievable (Mattessich et al., 2001).

Following this initial phase, each dyad undertook two improvement initiatives with each improvement initiative lasting approximately six months. During this twelve-month period, teams participated in monthly workshops held to facilitate and manage activities around the performance of the two improvement initiatives. Interim meetings with each individual buyer and supplier teams were also held in-between workshops, in order to assess the progress of the initiatives. Given the structure of CO-IMPROVE in the selected research site the researcher had access to teams within both buyer and supplier firms. The criteria influencing the selection of the system integrator firm, and the system integrator's subsequent selection of supplier firms within the project were consistent with the research objectives of this study i.e. buyer-supplier partnerships between pre-existing first-tier suppliers of current, or with the potential for, strategic importance, and with a willingness from both firms to engage in collaborative improvement initiatives. Specifically, the empirical research site encompassed four dyad-teams thus comprising four buyer and four supplier teams. These eight teams provided access throughout the data-gathering phase of this study. Confidentiality was ensured through the Fifth Framework guidelines underpinning the CO-IMPROVE research project and also personal assurances from the researcher.

4.6.4 The Action-Learning Approach in CO-IMPROVE

Starting 15 months into the project and extending over 15 months the outcomes of action learning were planned to include (Coghlan and Coughlan, 2006:154):

- Improved collaboration within EME's;
- A new theory of supply chain management in EME's;
- Implementation guidelines for collaborative improvement in EME's; and
- Contribution to theory of inter-organisational action learning and action research.

The action learning approach within CO-IMPROVE was based upon Marquardt's (1999) six distinct components including:

- A problem;
- The group;
- The questioning and reflective process;
- The commitment to taking action;
- The commitment to learning; and
- The facilitator.

Drawing upon Marquardt's six components Coghlan and Coughlan (2006) describe the application of these within CO-IMPROVE. Firstly the *problem* to be addressed was the enhancement of supply chain performance through collaboration between system integrators and suppliers. Secondly, the *group* comprised six to eight members, formed from the system integrator and supplier, with the knowledge and capability to understand and address the problem and also the power to implement collaborative improvements. *Questioning and reflection* occurred formally during monthly network meetings where new ideas were presented, where actions undertaken were reported upon and reviewed, and where plans for new actions were questioned. *Commitment to taking action* was considered evident in the respective agreement by the system integrator and suppliers firms to participate in the project and in the assignment of staff with the capability to take action. *Commitment to learning* was considered evident in the respective agreement by the system integrator and suppliers firms to participate whilst cognisant of the likely time and space demanded by project participation. Finally, *facilitators* acted as learning coaches for those engaging in collaborative improvement activities.

Application of action learning approach in the selected research site is considered in the following section.

4.6.5 The Action-Learning Approach in the Selected Research Site

As identified previously, the action learning component did not start formally until 15 months into the project. The action learning approach was however structured around the design of CO-IMPROVE as a project, which in turn revolved around monthly workshop meetings between buyer and supplier teams, facilitated by members of the CO-IMPROVE research team. The appropriateness of the monthly workshop schedule was considered with respect to the need for sufficient time to nurture collaboration, particularly at the outset, including formal and informal communication, the formulation of clear goals and periodic reporting on progress (Mattessich et al., 2001; Wiewel and Guerrero, 1997). However, rather than imposing this structure on the teams it was agreed upon in consultation with system integrator management, supplier management and the teams. Whilst management and teams agreed that this structure would allow them the opportunity to dedicate time to the initiatives they also requested the opportunity to review the suitability of this structure as work progressed. The monthly workshop structure was duly revisited as teams saw fit, with individual dyads typically selecting more or less frequent meetings as suited their needs. Management in each firm showed commitment to the project by allowing teams make time for their new responsibilities, in addition to appropriating time for workshops and regular team-activities including emails, phone calls, and interim-meetings with teams.

Each improvement initiative was in turn organised around a series of workshop activities influenced initially by the Action Learning methodology of CO-IMPROVE. Specifically at these workshops it was envisioned that project facilitators and / or management would encourage and assist teams as required to define and plan initiatives; identify roles and share responsibilities; engage in activities required to achieve goals and objectives; and reflect upon their progress to date with a view to continuously improving via collaborative activity. This structure and design of activities was also developed to be consistent with the need for CO-IMPROVE to understand, initially, how these teams collaborated, what worked and what didn't. Teams were therefore self-managing, selecting what improvement initiatives to work on; what activities to engage in to address initiative problems; when – outside of the monthly workshops – to engage in initiative activities; and how worked was shared between the teams. Management's role was envisioned as encouraging and assisting teams, as necessary, to define and plan initiatives, helping teams to identify and define roles where necessary, encouraging teams to share responsibilities and to engage in open and honest communication, checking teams' schedules to ensure

progress was planned / being made, and encouraging teams' attendance at workshops to share their views on their progress. The role of facilitators was envisioned as helping teams, as requested, to engage collaboratively on improvement initiatives including the use of collaborative tools; to observe actual progress relative to planned progress; to attend additional meetings as requested by teams to assist them in making progress; and to organise monthly workshops with a view to encouraging teams to present and reflect upon their progress. Management and facilitator roles and responsibilities were explained by management to the teams to ensure they were aware of the availability of assistance and support as necessary. As with the monthly workshop structure the nature and performance of these roles and responsibilities duly changed as teams relied less or more upon management and facilitators or called upon other forms of assistance from management and facilitators as the project progressed.

4.6.6 The Researcher's Role in CO-IMPROVE

The researcher was an active member of the research consortium (CO-IMPROVE project researcher network) prior to its formal commencement and attended the initial pre-planning meeting in February 2001. This provided an opportunity to meet with fellow consortium members and to assess the feasibility of CO-IMPROVE as the empirical research site for this study. The researcher was also a principal member of the action learning researcher network i.e. the Trinity Team for the duration of the project. As part of this role, the researcher became an active member of one of the local researcher networks based in Italy and attended local researcher network meetings and also company learning networks in Italy. This period also included a four-month internship in Politecnico di Milano (Italy) enabling continuous interaction with the local researcher network.

As discussed in the preceding section, the objectives of CO-IMPROVE were to create a business model to capture the design, implementation and ongoing development of collaborative improvement between partners in the EME, and to outline a support role for web-based software and action-learning guidelines. This understanding was to be gained through observing and engaging collaborating teams in action and reflection on their progress and experiences.

A summary of the data-gathering approaches used in CO-IMPROVE include:

- Researcher journaling (personal notes of observations and reflections of the researchers);
- Instrumentation (e.g. questionnaires and documentation from assignments);
- Minutes and notes of company network meetings; and
- Minutes and notes of researcher meetings

The researcher's role in CO-IMPROVE varied in line with the progression of the project across its' three-year duration. In line with the initial 15 month period of project which focused on improvement initiatives between the buyer-supplier teams the researcher's role included:

- Data gathering and analysis; and
- Preparation / presentation of reports for business and academic partners

Specifically, the researcher:

- Prepared accounts of teams' actions and reflections on what worked and what didn't with respect to improvement initiatives;
- Prepared accounts from the monthly workshops and interim meetings of dyad-level plans to build upon emerging understanding of 'what worked and what didn't';
- Prepared accounts of any tools and web-based interactions between the teams including their nature, purpose and frequency, and also team reflections on 'what worked and what didn't';
- Attained copies of questionnaires and documentation from assignments;
- Prepared progress reports from monthly meetings with respect to each initiative.

Together these activities combined to allow the researcher prepare tri-monthly reports and presentations for CO-IMPROVE researcher network meetings as contributed to the design of a business model, web-based software and action-learning guidelines to support collaboration.

During the second 15 month phase of the CO-IMPROVE project the researcher's role / activities within the local researcher and company network (EME) revolved around:

- Design of Action Learning Instrumentation / Implementation Guidelines for collaborative improvement in EME's;
- Contributions to the development of a business model to capture the design and implementation of the collaborative improvement process;
- Contributions to software designers with respect to the role of web-based software for collaboration;
- Ongoing preparation / presentation of reports for business and academic partners.

4.6.7 Using CO-IMPROVE for the Purposes of this Study

Reflecting upon the researcher's role within CO-IMPROVE, with respect to this study and its specific research objectives, a number of observations may be made. Firstly, although the research objectives of CO-IMPROVE were distinct from those of this study, CO-IMPROVE allowed the researcher to gain access to each of the buyer and supplier teams as they engaged in collaborated and as they reflected upon this process. Secondly, the data gathering and analysis role in CO-IMPROVE provided the researcher with access to teams' actions and also initial reflections on what worked and what didn't with respect to improvement initiatives. This provided an initial starting point from which the researcher then explored teams' sensemaking with respect to those actions and activities, with the researcher exploring interpretations accompanying these actions and activities, sensemaking triggers, influences on sensemaking, and links between interpretations and actions for the purposes of this study. Co-IMPROVE therefore provided a platform from which to explore, not just what teams thought worked and didn't, as met the research objectives of CO-IMPROVE in the selected research site, but why teams thought as they did, what influenced this thinking, and how it linked to actions. Thirdly, CO-IMPROVE allowed newly emerging events, circumstances and activities to be identified providing an ongoing opportunity to explore the cyclical sensemaking process in terms of the nature of emerging sensemaking triggers, and the resultant sensemaking in terms evolving interpretations and actions, and the influences on team sensemaking. Finally, CO-IMPROVE provided the researcher with access to documentation from workshops offering an additional opportunity to confirm interpretations, actions, and activities reported by the teams. Section 4.7 provides further description of the data generated from participation in CO-IMPROVE, as distinct from data generated specifically to meet the research objectives of this study.

With respect to this study and its research objectives, the following observations may be made in relation to the action learning approach in CO-IMPROVE, and the six components of this approach outlined in Section 4.6.4.

- The *problem* i.e. the enhancement of supply chain performance through collaboration between system integrators and suppliers is appropriate for the research interests of this study;
- The *group* i.e. a dyad comprising six to eight members is formed from system integrator and supplier teams. This allows for exploration of the unit of analysis of interest to this study i.e. teams, which are in turn identified as appropriate for the study of sensemaking at the inter-subjective level;
- *Questioning and reflection* i.e. a formal process during monthly network meetings where new ideas are presented, where actions undertaken are reported on and reviewed, and plans for new actions are questioned, suggests a viable site for the study of sensemaking by the researcher;
- *Commitment* to both taking action and learning suggests an enduring project appropriate for the case-based process approach used in this study and allows the study of how things evolve over time and why they evolve in a certain way;
- Finally *facilitators* acting as learning coaches for those engaging in collaborative improvement activities, suggests the presence of persons committed to helping participants pursue objectives or aim activities at overcoming some of the barriers to collaboration as drives the collaborative agenda.

The researcher was also cognisant of the potential influence of the structure and design of CO-IMPROVE on collaboration and sensemaking between the teams. However, the structure of collaboration between the teams, although influenced initially by CO-IMPROVE, was agreed by consensus between management and teams within each firm, with teams duly influencing this structure over time, as suited their needs. Additionally the six month duration of each initiative evolved naturally within the selected research site as evidenced by its variance with other research sites within CO-IMPROVE. Initial investigations regarding collaborative improvement needs were led by management in each firm with teams filling out questionnaires separately. Additionally, workshop activities were not imposed upon the teams, allowing them to self-select, self-plan and self-manage their activities and to seek assistance as they deemed necessary. Managements' role was envisioned as being consistent with the roles and responsibilities discussed in collaboration literature as helping to positively influence collaboration success and as outlined briefly in

Section 2.5.5. Similarly, and again as outlined briefly in Section 2.5.5, the role of facilitators was envisioned as being consistent with, for example, helping participants as requested to pursue objectives or aim activities to drive the collaborative agenda. Despite this, the researcher remained cognisant of the potential influence of the structure and design of CO-IMPROVE and the action learning approach upon the interpretations and actions of the teams. In light of this, possible influences were explored though the data collection and analysis procedures of this study, as discussed in later sections of this chapter.

Whilst recognising that CO-IMPROVE provided an opportunity for the researcher to explore teams' sensemaking, the distinct research objectives of this study suggest a distinct approach to data collection. This approach is described in the following section.

4.7 Data Collection

The data collection period for this study began once the team members had taken up their appointments in the new team structures. Multiple data sources were used for data collection in this study including:

- Interviews;
- Archival Records, Questionnaires and Documentation; and
- Researcher Journaling through Direct Observation

Each data source represents different methods which, when combined, form a chain of evidence to collate into the final case study report (Eisenhardt, 1989). Consistent with the consensus method for measuring team-level data the research approach used data collected from intact team members (Earley, 1993; Gibson et al., 2000). These research methods address Barr's (1998) second key consideration for selecting statements for analysis i.e. *what is the best way to elicit those statements,* as discussed in *Section 4.5.2.* Each of the data sources used for data collection in this study is described in the following sections.

4.7.1 Interviews

The main data collection instrument used in this study was the interview, designed by the researcher solely for use in this study and to explore team sensemaking. Interview questions were structured around the events and circumstances of collaboration perceived by the teams, with the interview questions designed with respect to the conceptual framework underpinning this study. Questions typically asked of teams by the researcher are outlined in Table 4.2.

Table 4.2: Interview Questions

1. Tell me about what's been happening since the last meeting / what incidents events, activities have been occurring in this team / with the dyad team / what new circumstances have arisen
2. Were these incidents, events, etc. significant / new / different?
3. Re Q2: Why do think this?
4. What else has the team been doing / not doing?
5. What are your thoughts on the project and these incidents and events?
6. Can you explain what the team did in response to these events and circumstances and why?
7. What did you think at the time? What was concerning the team?
8. What has been going well / badly and why?
9. What else has been important / significant to the team during this time?
10. What led you to think this way?
11. What was relevant to your thinking and behaviour during this stage?
12. Is there anything that we didn't talk?

Specifically, Questions 1-3 were designed to explore sensemaking triggers and Questions 4-11 were designed to explore team thinking, the basis for this thinking i.e. influences on team sensemaking and accompanying actions / activities. Question 12 provided the team with an opportunity to add any additional thoughts with respect to the preceding questions and also acted to 'close' the interview. These questions thus reflect the conceptual framework underpinning this study. Section 4.6.7 recognised the potential for influence from the CO-IMPROVE initiative upon the sensemaking of the teams. These interview questions, exploring team thinking and actions and the influences upon these (i.e. how and why teams interpreted and acted in relation to events and circumstances of collaboration) allowed the researcher to explore the possibility for influences arising from the structure,

design and approach of CO-IMPROVE.

The goal of data collection was to understand the perspectives of participating teams and how they constructed events at team-level. Rather than probe for information or suggest ideas, the researcher therefore tried to understand the perspectives of the team and to clarify the meanings and frames of reference set forth. This in turn addresses Barr's (1998) third key consideration for selecting statements for analysis i.e. *what types of statements are of interest,* as introduced in *Section 4.5.2.* Interviews addressed the questions outlined in Table 4.2, with each interview exploring the same topics with each team to facilitate cross-case comparison. The researcher also maintained the ability to explore areas of special significance to each team in depth. The data derived from team interviews will be presented in Chapter Five.

Interviews were conducted with each team on an ongoing basis, after monthly workshops, over the initial twelve-month period of the project, and at fortnightly intervals for a concentrated four-month period. Additionally, teams were interviewed after each of the monthly workshops during the start-up phase of the project. A total of nineteen interviews were therefore undertaken with each of the eight teams over a fifteen month period. Typically interviews lasted 30 – 60 minutes with the duration varying according to the emergent formal and informal interview opportunities arising during and in-between workshops, and according to the varying activity schedules of the teams involved. Participation in the monthly meetings and workshops, and full access to documentation charting the progress of each initiative, ensured familiarity with the details of each initiative allowing maximum interview time to be spent addressing the research objectives of this study. Interviews were held with intact team members, and not individuals, consistent with the research objectives of this study. The researcher encouraged full team participation drawing on all members of the team to contribute which is important in facilitating team-consensus building (Susskind et al., 1999).

Availability of teams for interview purposes was facilitated by the dedicated time that teams allotted to monthly CO-IMPROVE workshops. Additionally, during the first three months of the project the researcher spent time at the System Integrator firm, meeting with each system integrator team and at each supplier firm premises, with the exception of the premises of one supplier based in Austria. This three-month period helped to establish a relationship with the teams and helped them to understand the specific research interests of

the researcher as distinct from those of CO-IMPROVE. The researcher also ensured time was spent gaining an understanding of the industry and gaining familiarity with each firms' business activities to enhance understanding of possible topics of discussion arising within interviews. Interviews were semi-formal, semi- structured, and directed by the interview questions. Interviews were scheduled with teams in advance to ensure time was allotted and teams were aware of the impending meeting at the close of each workshop. As interviews fell within the overall time allotted for workshops, interviewees were always prepared for interviews and willing to attend and engage.

As discussed in Section 4.5.1 this study adopted the consensus method as the approach to gather team-level data. The consensus method is considered a process of coming to an agreement on a particular problem or issue (Kerrigan, 2001). This method is a way of working in which everyone's views and values are considered. It is seen to support open communication whereby people talk with one another regarding their perceptions of the situation or problem, the issues associated with the problem, their concerns and needs, and their ideas about possible solutions (Kerrigan, 2001; Lawrence-Butler and Rothstein, 1991).

In accordance with the consensus facilitation tasks outlined in Section 4.5.1 team members were facilitated and encouraged to share and discuss their views, whilst remaining cognisant of allowing others to participate in conversations and also of the time frame of approximately 30 – 60 minutes available for discussion. As team members in this study were familiar with each other's conversations around the project, problems and viewpoints emerged easily with members sharing ideas and discussing each others' views. The leader / facilitator also encouraged input from all team members directing team conversations to include silent members, and repeatedly checking with the team to ensure each member was satisfied (Kerrigan, 2001; Lawrence-Butler and Rothstein, 1991). Whilst problems, issues, solutions etc. were considered to be owned by each team, the role of the facilitator was to guide the discussion neutrally, asking questions and getting everyone involved whilst all the time working towards a summary of the discussion that everyone agreed was representative of their perceptions of the situation, the issues associated with the problem, their concerns and needs, and their ideas about possible solutions (Kerrigan, 2001).

The role of the facilitator in this approach was therefore a neutral one, guiding the discussion, summarising and asking questions, getting everyone involved and then guiding

the team towards making a decision. All interviews were transcribed as soon as possible after they occurred. This rapid transcription facilitated clarity in recalling the details of the interview and allowed the identification of gaps in detail and understanding to be addressed with teams in subsequent interviews.

A sample of data from these interviews – drawn from both SI and SU teams - is presented in the Table 4.3. The data in this table represents the consensus decisions reached by the teams with respect to the interview questions. Consistent with the consensus approach, decisions reflect the outcome of a process that encouraged input from all team members; guided the team towards making a decision; summarised this decision and then checked this decision with the team to ensure its accuracy.

Table 4.3: Sample of Interview Data

Question 1 Tell me about what's been happening since the last meeting / what incidents, events, and activities have been occurring in this team / with the dyad team / what new circumstances have arisen? **Sample Answers:** Project launch, end of change initiative, evidence gathering with respect to change initiative, meeting with SI leader
Question 2 and 3 Were these incidents, events, etc. significant / new / different? If so, why? **Sample Answers:** Findings contradicted the team's initial assumptions, findings led to management intervention; findings demanded further efforts from the team; findings suggested opportunities for future initiatives with other suppliers
Question 4: What else has the team been doing / not doing? **Sample Answers:** Meeting with the SI leader, talking to experts, gathering further data; planning new meetings with the dyad team
Question 5: What are your thoughts on the project and these incidents and events? **Sample Answers:** May cause problems for the team by acting as a drain on resources; may affect team performance negatively in the eyes of management / peers; may create an opportunity to get the supplier to be more proactive and take more responsibility
Question 6: Can you explain what the team did in response to these events and circumstances and why? **Sample Answers:** Decided at team level to monitor the SU; decided not to do anything

and avoid project tasks for a while; decided to meet with the dyad partner team to discuss the situation.
Question 7: What did you think at the time? What was concerning the team? **Sample Answers:** Thought about how the project would affect the team; thought about what management would think of the team's performance; thought about how to avail of further improvement opportunities
Question 8 and 9: What has been going well / badly and why? What else has been important / significant to the team during this time? **Sample Answers:** Finding solutions to the initiative has proven challenging because the team does not know the answer to the problem; working the dyad team is difficult because they try to control the meetings, support from the SI leader has helped the team to feel it is making a valuable contribution
Question 10: What led you to think this way? **Sample answers:** Similar events have happened in the past, project evidence has disconfirmed the team's initial assumptions; management have made time to discuss arising issues with the team; the team has had a chance to work with the dyad team and experience what was possible from exploring problems and working on solutions together.
Question 11: What was relevant to your thinking and behaviour during this stage? **Sample Answers:** Achieving initiative outcomes; meeting management expectations; avoiding further initiatives; availing of further opportunities

4.7.2 Researcher Journaling through Direct Observation

CO-IMPROVE required the researcher to prepare detailed accounts of team actions and reflections with respect to the design, implementation, and ongoing development of collaborative improvement through researcher journaling. Quite distinct from the research objectives of CO-IMPROVE however the researcher used the access accorded the *journaling role* to generate personal notes and to observe team interactions and initiative outcomes. Attending tri-monthly project meetings, monthly EME workshops, and interim team and dyad meetings facilitated direct observation of the progress of each team and dyad. It also facilitated direct observation of key events unfolding during the discussion, negotiation, and reflection sessions of the teams including workshop presentations on actions and outcomes relating to the performance of improvement initiatives. This helped to contextualise key events and give a better understanding of the background to observed

actions and team progress towards the achievement of collaboration goals. Observational notes were maintained for each team throughout each collaborative initiative and these notes were cross-referenced against observed and documented action. Team presentation documents were also used for cross-reference purposes. This process was repeated for each of the initiatives and for each of the teams.

4.7.3 Archival Records, Questionnaires and Documentation

The use of documentation coupled with other research methods is considered a valuable means of increasing the validity and reliability of the data collected (Yin, 1994, 2003). Archival records, questionnaires and documentation in this study were obtained through membership of CO-IMPROVE. CO-IMPROVE *archival records* and *questionnaires* offered descriptions of the commercial history and characteristics of each buyer-supplier partnership. These provided the researcher with a means to conceptualise the initial buyer-supplier relationship with a view to understanding the influence, if any, upon team sensemaking and how it evolved over time.

CO-IMPROVE *documentation* included:

- Progress reports;
- Minutes of tri-monthly project meetings and monthly workshops;
- Detailed action plans from improvement initiatives; and
- Dyad presentations on initiative outcomes

Together these materials provided details on the nature of, and planned approach towards, achieving dyad improvement initiatives. Specifically these descriptions provided information on:

- Nature of the collaborative initiatives undertaken by each dyad team;
- Actions / activities performed by the teams around the execution of collaboration initiatives; and
- Operational outcomes attained during, and at the end of, each initiative

In summary therefore CO-IMPROVE provided an account of:

- The nature of, and the planned approach towards, achieving the collaborative initiatives undertaken by each dyad team;
- Actions and activities at *team level* and *dyad level* around the execution of collaboration initiatives;
- *Dyad-level* discussions as to what helped and hindered the progress of the initiative;
- *Dyad-level* discussions as to what might help the dyad to address any problems identified; and
- Operational outcomes attained during, and at the end of, each initiative

In contrast to this study's focus on the *team-level* however, CO-IMPROVE discussions were held at *dyad-level.* Additionally, in contrast to this study's focus upon team sensemaking, these discussions typically reflected the research objectives of CO-IMPROVE. Accordingly CO-IMPROVE discussions typically revolved around:

- The workshop structure and schedule;
- Information exchange needs;
- Tools and techniques to assist initiative activities;
- Additional facilitation or training needs;
- Planning future initiatives;
- Agreeing new roles and responsibilities; and
- Managing time frames

With respect to the research objectives of this study these materials contributed to the preparation of brief overviews of each team and dyad relationship. In addition these materials contributed in part to the preparation of change stories for each team. These data are presented in Chapter Five.

4.8 Evaluation of Data Collection

Yin (2003) defines a number of principles of data collection considered to increase the validity and reliability of the case study including:

- Multiple Sources of Evidence;
- A Case Study Database;
- Prolonged Engagement; and
- Member Checks

The research design of this study is discussed under each of these headings.

(i) Multiple Sources of Evidence

A key strength of the case study approach is the opportunity to use a variety of different sources of evidence. In particular this strategy enables a broader range of issues to be considered and facilitates data triangulation (Patton, 1990). Triangulation of data relates to multiple sources of evidence in support of the events or facts of the case study (Yin, 2003). Each method of data collection in a study has an inherent set of strengths and weaknesses (Gill and Johnson, 1997). An example of this relates to issues concerning the accuracy of some questionnaire responses whereby the data generated by the interviews can provide a higher rate of validity. As described above, the cases presented in this study relied upon multiple sources of evidence. One advantage of multiple methods is that the strength of one method may compensate for the limitations of another method.

(ii) Case Study Database

A database file for each buyer and supplier team was maintained by the researcher containing relevant documents, records, interview notes, and ongoing reflective notes. These files held a record of ongoing events and were organised, categorised, and completed for later access (Yin, 2003).

(iii) Prolonged Engagement

The research approach adopted in this study offered an opportunity to work closely, and for an extended period of time, with the research participants. Prolonged engagement in the field involves building trust with participants, and checking for misinformation or distortions in reporting introduced by the researcher (Ely et al., 1991; Lincoln and Guba, 1985). In addition it facilitates rich, thick description of the case (Ely et al., 1991; Lincoln and Guba, 1985).

(iv) Member Checks

Participants are viewed by Stake (1995) as critical to both the acting and the direction of case study research. Accordingly, member checks (Miles and Huberman, 1994) involve taking data, analyses, interpretations, and conclusions back to the participants so they can judge the accuracy and credibility of the accounts (Creswell, 1998). This also offers the opportunity to build trust with the research participants and to check for occurrences of misinformation with them (Fetterman, 1989). Member checks were used throughout this study with observations, and team interview reports relating to triggers, influences, interpretations and actions, confirmed with the teams. In addition, actions and activities reported or observed with respect to achieving initiative outcomes were confirmed at CO-IMPROVE workshops through progress reports, allowing details to be checked and confirmed. Fellow academics in the researcher networks also provided the opportunity for data checks to be carried out where relevant.

4.9 Data and Data Analysis

The objective of the analysis procedures in this study is to build theory. According to Strauss and Corbin (1994) a theory is a set of relationships that offers a plausible explanation of the phenomenon under study. This involves asking questions of the data, with theorising "the process of constructing alternative explanations and holding these against the data until the best fit that explains the data most simply is attained" (Morse and Field, 1995:128). Theory therefore enables the illustration of complex constructs and concepts through a system of interconnected ideas that condense and organise knowledge (Carroll and Swatman, 2000).

In proposing to develop or build theory, researchers must first start with a "considerable degree of openness to the field data" (Walsham, 1995:76). Eisenhardt (1989:536) in dealing with case studies, states that "attempting to approach this ideal is important because preordained theoretical perspectives or propositions may bias and limit the findings. Investigators should formulate a research problem and possibly specify some potentially important variables, especially at the outset of the process". However, Walsham (1995:76) reiterates the importance of avoiding formal theoretical predispositions, stating that while "theory can provide a valuable initial guide, there is a danger of the researcher only seeing what the theory suggests, and thus using the theory in a rigid way which stifles potential new issues and avenues of exploration".

One of the particular difficulties associated with case study research is data analysis whereby vast amounts of data may be generated during the data collection phase. The case study may have less a priori knowledge of what variables are of interest or required for the study. It is therefore vital during data analysis to have specific strategies in place to manage and interpret the data. The qualitative nature of the data and the case study method used in this study influenced the researcher's choice of theorisation processes. In addition, the data in this study is process-based data. Process analysis, concerned with how things evolve and why, (Van de Ven and Huber, 1990) relies on the use of events, activities, and choices ordered over time. The analysis of process data recognises the possibility for different stimuli to arise across different stages and that these stages may be interlinked with the impact of stimuli feeding forward into other stages of the overall process (Langley, 1999).

The conceptual framework underpinning this study was presented in Figure 3.1. Data analysis in this study is used to explore this conceptual framework and the interrelatedness of the key elements in the framework, and to develop process theories which provide explanations in terms of the sequence of events leading to outcomes. Specifically, the analysis presented in this study attempts to outline the evolving interpretations and actions, the means through which these evolve, and how changes in interpretations link to changes in action. As Pentland (1999:722) concludes ..."our literature is filled with statements about relationships between constructs that claim to offer an explanation. But the explanation lies in the story that connects X and Y not the regression model itself. I think this insight is especially valuable when one is considering interventions to change or improve a process".

Data analysis in this study started with a review of the relevant areas of literature and continued throughout and beyond the period of data collection. The objective of the data gathering process in this study was to learn as much as possible about how teams made sense of the process with which they were asked to engage. Although this study drew largely upon interviews and the researcher's journaling role as data sources, CO-IMPROVE data sources were also used. Analysis of these data sources is considered in the following section.

4.9.1 Analysis of CO-IMPROVE Data

CO-IMPROVE data was drawn upon to provide an initial description of the buyer-supplier partnerships, the initiatives undertaken by the dyads, and the actions and activities that arose. Drawing upon CO-IMPROVE *archival records* and *questionnaires* an overview of each firm was prepared describing the nature of each firm's business, each firm's history with respect to the dyad partner, and the characteristics of each dyad partnership. In addition, drawing upon CO-IMPROVE *documentation* a description of each of the improvement initiatives undertaken by each dyad was next created by the researcher. Operational outcomes for these initiatives, as reported by teams at CO-IMPROVE workshops, were also described.

These data were also analysed to explore and more fully understand influences on sensemaking identified by the teams. These data also allowed the researcher to contextualise key events and give a better understanding of the background to observed events and interview reports, in addition to emergent findings, particularly with respect to cross-case analysis in terms of similarities and differences across the teams. These data are presented in the appendices to this study with Appendix 1 providing an overview of the Collaboration Implementation Process in CO-IMPROVE, and Appendix 2 providing descriptions of the improvement initiatives and operational outcomes of these initiatives within CO-IMPROVE.

4.9.2 Analysis of Researcher's Data (Interviews and Researcher Journaling)

All interview transcripts and notes from the team interviews held for the purposes of this study were analysed manually, with verbatim sections extracted (Isabella, 1990). In keeping with a longitudinal research approach these were recorded, categorised, refined, and re-categorised over time. All data were recorded according to the time-period they referred to, creating a progression of data through to the completion of each event. This approach enabled the researcher to identify emerging patterns but also to develop and maintain familiarity with each case (Eisenhardt, 1989). In turn, it allowed the researcher to look at similar themes emerging across different sources (Yin, 1994).

Analysis of Interview Questions 1-3 focused upon confirming and further exploring the events, circumstances, and activities which triggered sensemaking within each system integrator and supplier team. Analysis of Interview Questions 4-11 focused upon team thinking with regard to these triggers, the basis for this thinking i.e. influences on team sensemaking and the accompanying actions / activities. Data was sorted as it was collected, in accordance with sensemaking triggers, social interaction processes of sensemaking, influences on sensemaking, team interpretations, and accompanying actions and activities. The conceptualisation of each of these is as follows:

Sensemaking Triggers: conceptualised as events, activities, and circumstances which teams identified as triggering their need to revise their previous interpretations and actions. Examples drawn from data include events, activities, and circumstances relating to:

- purpose and intentions underpinning the launch and introduction to collaboration;
- initiative progress and outcomes;
- the relationship with the dyad partner team; and
- the value of overall changes arising from experiences of collaboration.

Social Interaction Processes of Sensemaking: conceptualised as verbal and written communication which may be formal or informal in nature including negotiations, stories, rumours, gossip, jokes, and behaviour and action signals that teams engage in to make sense of events, activities, and circumstances.

Examples drawn from data include:

- Team-level meetings sharing stories, speculations, ideas, concerns and fears;
- Dyad-level meetings sharing views and observing the behaviour of the dyad partner team;
- Shared experiences;
- Progress reports; and
- Discussion and shared ideas with management and peers

Team Interpretations: conceptualised as interpretations that a team arrives at with respect to understanding and acceptance of the vision, transition process, and likely outcomes of collaboration e.g. statements with respect to 'this is what the team thinks' 'this is what the project is about' or 'this is what the project means'.

Examples drawn from data include:

- Collaboration as beneficial: advantages and opportunities;
- Collaboration as problematic: disadvantages and costs, 'them versus us';
- Collaboration as different from expectations e.g. demanding, valuable, difficult;
- Collaboration requiring a change in how teams currently work towards relying upon and valuing inputs from dyad partner team;
- Collaboration capable of delivery important results for team and / or firm; and
- Collaboration valuable / unnecessary for the future of the firm.

Actions: conceptualised as actions, activities, and behaviours that teams link to their interpretations through the use of terminology such as 'so'; 'because'; 'leading to'; 'resulting in' and 'due to'.

Examples of such actions, activities, and behaviours drawn from data include:

- Dominating / avoiding task assignments and responsibilities;
- Sharing responsibility between the teams for improvement tasks and activities;
- Joint planning;
- More frequent and informal communication;
- More direct communication linking appropriate people from both dyad parties with respect to the given improvement initiative;
- Ideas and agreement sought from both sides

Influences on Sensemaking: conceptualised as existing ways of thinking and working, in addition to newly emerging influences that a team identifies as influencing its revised thinking and actions. Influences are identified according to a team's use of linking terminology such as 'because'; 'accounting for'; 'leading to'; and 'influencing'.
Examples drawn from data include:

- Rumours and speculations relating to past events and recent performance of dyad partner;
- Own beliefs relating to experiences and project evidence;
- Influence relationships including management, peers, and the dyad partner team;
- Early evidence from initiative investigations and / or management and peer feedback;
- Reflections based upon increased understanding of collaboration and the nature and value of experiences emerging from dyad-level interactions;
- Reflections and discussions with a wider audience (dyad team, management and peers) with respect to accumulated evidence, experience and extrapolation with regard to future initiatives

Next, the researcher focused on ordering the evidence through identifying time frames in which interpretations and change outcomes remained relatively constant, with new time frames representing 'turning points' (Adam, 1990) identified from the ongoing analysis of interpretations and actions over time. These 'turning points' indicate cycles of sensemaking rather than 'clock time'. 'Clock time', although potentially providing a tool for co-ordination and social interaction, is recognised as potentially obscuring other patterns within processes of change (Whipp, 1988).

In addition, in an effort to marshal the vast amounts of data, a change story (Langley 1999; Pettigrew 1990) was written for each team. These change stories were built around these data sources drawing upon initiative details (CO-IMPROVE data source), dyad-level and team-level actions and activities (CO-IMPROVE data source), in addition to data drawn solely from the data collection methods used in this study (interviews and researcher journaling) providing data with respect to sensemaking triggers, social interaction processes, influences on sensemaking, team interpretations, and accompanying actions and activities. These change stories are structured around the improvement initiatives. Although the CO-IMPROVE structure was delineated according to monthly workshop meetings this study did not however assume that team sensemaking would evolve in accordance with these monthly events.

Section 5.4 presents these data, sorted in terms of sensemaking triggers, sensemaking processes, influences on sensemaking, team interpretations, and accompanying actions and activities. Section 5.5 presents the change stories written for each team.

As data was sorted the researcher manually looked for themes and patterns, of a similar nature, across each team's sensemaking triggers, social interaction processes, interpretations, influences, and actions. With a view to addressing the *first research question* in this study the researcher explored the evolving nature of buyer and supplier team interpretations of collaboration and how these interpretations evolved in terms of the emerging influences identified by the teams as acting upon their interpretations over time. As discussed in Section 2.8, consistent with research examining interpretations with respect to strategic change, the researcher looked at how teams labelled issues. Issue categories that have come to dominate strategic change literature relate to whether issues are interpreted in terms of opportunities or threats (Jackson and Dutton, 1988). However, as that section observed, this study takes the view that changes in participants reality should be studied in a way that "taps into processes used to fashion understanding by the participants themselves, to avoid the imposition of alien meanings upon their actions and understandings"...and "to represent the experience and interpretations of informants without giving precedence to prior theoretical views that might not be appropriate for their context" (Gioia et al., 1994:367).

Statements were therefore analysed with a view to exploring the nature of team interpretations and this 'fashioning of understanding' or the sensemaking lens underpinning interpretations. Looking across interpretations of the teams the researcher analysed the content of interpretations i.e. 'what' interpretations referred or related to, and also the bases for team interpretations focusing upon the nature of social interactions teams engaged in and what informed or influenced interpretations. Common patterns or themes were then sought across teams. The researcher focused upon identifying categories in order to group segments of information and words. Memos were also used by the researcher as means of capturing emerging ideas and helping to make sense of the 'reality' being encountered (Snow and Anderson, 1987; Miles and Huberman, 1994). Explanations were generated early and often and repeatedly checked against observations with the teams, with researcher colleagues in the setting, and with other sources of data to confirm accuracy, support conclusions, and provide corroboratory evidence (Singleton et al., 1988; Miles and Huberman, 1994). In addition, with a view to exploring how interpretations evolve over time, the researcher focused upon linking evolving interpretations with the sensemaking triggers perceived by team as causing them to revise their initial interpretations, with again common patterns or themes sought across teams.

With a view to addressing the *second research question* in this study the researcher next mapped events underpinning 'turning points' in interpretations and actions to show the links between triggers, interpretations, actions and influences identified by the teams over time. Analysis looked at the nature of these actions and how they linked to interpretations, with a view to exploring the influence of interpretations of sensemaking triggers upon these actions, and again how these evolved over time. This evolving picture of triggers, interpretations and actions allows an understanding of how sensemaking is triggered; how new interpretations emerge; how new actions arise linked to interpretations; and how new triggers emerge from new actions, leading to sensemaking cycles. Patterns of actions, how they linked to interpretations, and how understanding and acceptance of collaboration emerged, were searched for across teams. This mapping allowed any evidence of progression towards understanding and acceptance of the vision, transition, and likely outcomes of collaboration to be identified and understood in terms of the nature of and influence upon this progression. Specifically Chapter Two discussed the concept of collaboration as a way of firms working together with the success of collaboration influenced by, for example, sharing purpose, communication, membership, processes and structures, resources and an appropriate environment for collaboration. Evidence of progression towards understanding and acceptance of the vision, transition, and likely outcomes of collaboration was searched for across teams' interpretations and actions.

With reference to Chapter Two examples of evidence included, although not exclusively:

- Changes in communication between teams such as nature, frequency, informal relationships emerging e.g. setting aside purely social time;
- Decision-making differences negotiated and consensus or compromise reached between teams;
- Reaching decisions that all teams can support because their respective interests have been addressed;
- Dealing with conflict and tensions constructively between teams;
- Commitment evidenced by teams entering into obligations and living up to them;
- Problems solved by teams working together to define, analyse and resolve or improve a situation and jointly agreeing a solution;
- Teams clearly understanding roles, rights and responsibilities and understanding how to carry out those roles, rights, and responsibilities;
- Interactions and agreements reached via consensus or compromise between teams rather than dominance and compliance;

- Teams (or firms) sharing benefits and risks of collaboration and jointly creating and sharing resources; and
- Sharing the collective capabilities of teams across organisations

Analysis of the evolving content of, and bases for, team interpretations also allowed for any impact or influence of CO-IMPROVE (identified as such by the teams) to be identified. Additionally this allowed for an exploration of the nature of this influence, and the organisational level at which this influence arose.

This analysis strategy involved a continuous interplay between analysis and data collection (Glaser and Strauss, 1967) and the constant comparison and contrast of data and theory throughout the data collection and analysis processes. Although suited to different research designs, Langley (1999) describes this approach as often "most powerful" when used to explore the interpretations of different groups living through the same processes (Isabella, 1990; Sutton, 1987). This movement between theory and data has been described as "a re-conceptualisation, often based on a creative leap (Mintzberg, 1979; Post and Andrews, 1982) that should account for and encompass all nuances in the data" (Isabella, 1990:12).

Chapter Six presents the analysis of the content and influences upon team interpretations and their links to actions, and maps this evolving picture of sensemaking triggers, sensemaking influences and sensemaking processes underpinning these evolving interpretations and actions.

The evaluation of the data collection methods used in this study is presented in the following section.

4.10 Evaluation of Research Design

Any method of research has an inherent set of strengths and weaknesses (Gill and Johnson, 1997). Tests used commonly to establish the quality of empirical social research (Creswell, 1998) include the following:

- *Construct validity*: concerning the degree to which the research measures that which was intended. The use of multiple sources of evidence and a chain of evidence contribute to construct validity (Yin, 2003). In addition the use of key informants in reviewing case study reports is seen as a valuable technique. This study makes use of each of these techniques.
- *Internal validity*: a measure of the extent to which cause and affect relationships, identified by the research, are valid. Case studies, as used in this study, are considered to have strong internal validity. This is facilitated by the descriptive nature of case studies, which allows detailed observation of relationships. The depth of access allowed to the researcher in this study also contributes to its internal validity. In addition, inferences regarding causal relationships are made by the teams based on each team's and not the researcher's, causal assumptions.
- *External validity*: referring to the feasibility of applying cause and effect relationships beyond the data set and setting of the study. The purpose of the case study is not to generalise to the wider population (population validity) or to generalise from one context or setting to another (ecological validity). In this study, cases provide explanations for relationships and build, not test, theory.
- *Reliability*: concerned with the consistency of the results obtained and the minimisation of errors and biases in a study. Adhering to principles of data collection can help to improve the reliability of case studies. Accordingly, the principles of data collection outlined previously in *Section 4.7* were adhered to in this study.
- *Triangulation of data*: relating to multiple sources of evidence in support of the events or facts of the case study (Yin, 2003). As described above, the cases presented in this study relied upon multiple methods, using a variety of different sources of evidence. Data was repeatedly checked against researcher observations, with facts and evidence checked with the teams; with researcher colleagues in the empirical setting; and against any additional, relevant data sources within CO-IMPROVE to confirm accuracy, support conclusions, and provide corroboratory evidence (Singleton et al., 1988; Miles and Huberman, 1994). This strategy is considered to enable a broader range of issues to be considered and to facilitate data triangulation (Patton, 1990).

Patton (1990:492) observes "the important challenge is to appropriately match methods to evaluation questions and issues and not to universally advocate any single methodological approach for all evaluation situations". Gasson (2003:89) suggests that the "positivistic worldview is incommensurable with the interpretive worldview. Thus different criteria of

rigor and quality need to be developed to reflect the very different assumptions that interpretive researchers hold about the nature of reality and appropriate methods of inquiry". As a result of differing epistemological worldviews (i.e. whether positivistic or interpretivist), and the incommensurable nature of both, interpretivist researchers using qualitative data have come to rely on additional criteria including confirmability, dependability, consistency and transferability (Strauss and Corbin, 1990; Gasson, 2003). These criteria allow researchers to maintain empirical rigor and validity without having to subject an interpretivist investigation to a positivistic ontology of reality. Table 4.4 illustrates the different criteria of positivist and interpretivist worldviews for ensuring quality and rigor are adhered to.

Table 4.4: Quality and Rigor Criteria

Issues of Concern	Positivist Worldview	Interpretivist Worldview
Representativeness of Findings	Objectivity: findings are free from researcher bias	Confirmability: conclusions depend on subjects and conditions of the study rather than the researcher
Reproducibility of Findings	Reliability: the study findings can be replicated independently of context, time or researcher	Dependability: the study process is consistent and reasonably stable over time and between researchers
Rigor of Method	Internal Validity: a statistically significant relationship is established to demonstrate that certain conditions are associated with other conditions, often by 'triangulation' of findings	Internal Consistency: the research findings are credible and consistent to the people we study and to our readers. For authenticity, our findings should be related to significant elements in the research context/situation.
Generalisability of Findings	External Validity: the researcher establishes a domain in which findings are generalisable	Transferability: how far can the findings/conclusions be transferred to other contexts and how do they help to derive useful theories?

Source: Gasson (2003:90)

Reliability means two different things to both positivist and interpretivist researchers respectively, because invariably it relies on their definition of 'truth'. Gasson (2003:91) notes that the positivist believes that "what we see and measure when we collect data is what exists independently of our interpretation of the situation"...whereas the interpretivist accordingly believes that reality is socially constructed and therefore "what we see is our

interpretation of the world and that what others report is their interpretation". In addition, the author notes that "the problem is that humans are subjective, inconsistent beings, who are quite capable of taking different positions at different times on different issues without realising the inherent contradictions" (Gasson, 2003:91). As a consequence interpretivist investigators should not be bound by positivist instruments of reliability but instead seek to ensure dependable and authentic findings by establishing "clear and repeatable procedures for research and to reflect on the position that we take as we perform them" (Gasson, 2003:91).

Positivist researchers view *'internal validity'* as the accuracy of the information collected and the degree of correspondence to reality (Creswell, 1998). "Validity in deductive hypothesis-based research is ensured by statistically testing correlations between data variables and by ensuring a statistically significant sample population. Such notions of mathematical proof have no equivalent in qualitative interpretive research because (a) collected data represent social constructs rather than measurable physical phenomena, and (b) data analysis is recognised as subjective and inductive-deductive rather than as deductively objective" (Gasson, 2003:91). Therefore, interpretivist researchers need to refrain from using positivist coding techniques that can 'force data' (Glaser and Strauss, 1967), and instead focus on applying a constant comparative and consistent approach to data generation and analysis. As Strauss and Corbin (1998) note however, there remains a need to consider the idea of internal consistency, to consider if all parts of a given theory fit together and work to explain the data.

Finally, in terms of *generalisability* of findings, again many interpretivist researchers reject the positivist notions of external validity, i.e. the idea that one's theory is applicable to other external cases and samples. As positivists and interpretivists reside in different worldviews, which invariably shapes their perceptions of 'reality', qualitative inquiry rejects the notion of external validity and applicability. As Gasson (2003:92) asks, "how can we make a claim to be generating generalisable theory from an external reality that we do not believe exists independently of ourselves"? Interpretivist researchers are instead encouraged to make claims of 'transferability' and 'fit' between contexts. As Eisenhardt (1989) observes, once an empirical method claims to be inductive, it becomes difficult to make claims of generalisability of findings. In fact, interpretivist researchers that make such assumptions open their inquiries to positivist criticism. Instead, Gasson (2003:93)

cautions that "as a replacement for external validity in qualitative research we could substitute the notion of external consistency. We need to adopt the discourse of transferable findings rather than that of generalisable results".

Chapter Five will present the empirical data and emerging findings and analysis of this study.

4.11 Conclusion

To comprehensively investigate any contemporary phenomenon requires a precise research design and a detailed research protocol. Accordingly, this chapter has provided a detailed approach to the research design and analysis used in this study. *Section 4.2* introduced the interpretivist approach used in this study and the philosophical assumptions underpinning this approach. *Section 4.3* presented the research method used in this study, specifically a case-based, process approach with *Section 4.4* discussing some additional considerations with respect to the use of this method. *Section 4.5* addressed a further complexity in this study, namely the need to align interpretation as an individual phenomenon, and the team-level as the unit of analysis of interest in this study. *Section 4.6* addressed the execution of the research design, introducing the CO-IMPROVE project, used as the empirical site for this study. This section explored and distinguished the structure, research methods, and researcher's role in relation to CO-IMPROVE and this study. *Section 4.7* discussed, and again distinguished, the data collection methods used in CO-IMPROVE and in this study. *Section 4.8* evaluated the data collection approach using key data collection principles. Finally, *Section 4.9* introduced the data and data analysis methods used in this study, with *Section 4.10* providing an evaluation of the overall research design.

CHAPTER 5: DATA AND FIRST-LEVEL ANALYSIS

5.1 Introduction

This chapter presents the empirical data and an initial sorting of this data in accordance with the conceptual framework underpinning this study. It introduces the case sites used to explore the concepts and elements of the conceptual framework developed in Chapter Three. These case sites include a system integrator (SI) firm and four supplier (SU) firms operating in the aerospace industry. Four teams were formed from within the SI firm, each one working with a supplier team to form four distinct dyad units. The data gathering in this study revolved around these buyer-supplier teams. The presentation and initial analysis of these data form the main focus of this chapter with the chapter structured around six main sections. *Section 5.2* presents an overview of the aerospace industry in which the firms participating in this study operate, and explores the significance of collaboration in this industry context. *Section 5.3* presents an overview of each of the participant firms involved in this study and the relationship history of each of these dyads. In addition this section identifies the improvement initiatives undertaken by the dyads in this study and also the outcome of these initiatives. *Section 5.4* presents data with respect to team sensemaking in relation to the process of collaboration, with *Section 5.5* presenting the change stories written for each of these teams. *Section 5.6* presents emerging findings and analysis. Finally, *Section 5.7* concludes this chapter.

5.2 Collaboration in the Aerospace Industry

The aerospace industry comprises companies producing aircraft, guided missiles, space vehicles, aircraft engines, propulsion units, and related parts. Aircraft overhaul, rebuilding, and parts also are included. The industry is divided between civil and military aircraft segments. Firms producing transport aircraft make up the largest segment of the civil (non-military) aircraft section of the industry. Civil transport aircraft are produced for air transportation businesses such as airlines and cargo transportation companies, in addition to general aviation aircraft, ranging from the small two-seaters designed for leisure use to corporate jets designed for business transport. Commercial airlines and private businesses

typically identify their needs for a particular model of new aircraft based on a number of factors, including range, size, cargo capacity, type of engine, seating arrangements and the routes that they fly. Next, airlines invite manufacturers of civil aircraft and aircraft engines to submit bids. Selection ultimately is based upon a manufacturer's ability to deliver reliable aircraft that best fit the purchaser's stated market needs, at the lowest cost, and at favourable financing terms.

Government purchases are largely related to defense. Military aircraft and helicopters are purchased by governments to meet national defense needs, such as delivering weapons to military targets, and transporting troops and equipment around the world. Typically Governments announce their needs for military aircraft or missile systems, again specifying a multitude of requirements. Large firms specialising in defense products subsequently submit bids and designs, along with cost estimates, hoping to win the contract. Firms may also research and develop materials, electronics, and components relating to their bid, often at their own expense, in order to enhance their chance of winning the contract. Following a negotiation phase, a manufacturer is selected and a prototype vehicle is developed, built, tested, and evaluated. If approved by the defense department, the program enters production. This process usually takes many years.

Aircraft engine manufacturers, who are not necessarily aircraft manufacturers, produce the engines used in civil and military aircraft. These manufacturers design and build engines according to the aircraft design and performance specifications of the aircraft manufacturers. Aircraft manufacturers may use engines designed by different companies on the same type of aircraft. The way in which commercial and military aircraft are designed, developed, and produced is undergoing significant change in response to the need to cut costs and deliver products more quickly. Firms producing commercial aircraft have reduced development time through computer-aided design (CAD), which allows firms to design an entire aircraft, including the individual parts, solely by computer. The drawings of these parts can be sent electronically to subcontractors who in turn can use them to program their machinery. Product development teams are increasingly being used through every phase of development bringing customers, engineers, and production workers together to make decisions concerning the aircraft.

Employment in aerospace manufacturing has declined in the past few years due to a drastic reduction in commercial transport aircraft orders. This decline is attributable to a number of factors including the reduction in air travel that resulted from the terrorist attacks on the

United States, a slowing global economy; as well as severe financial problems many international airlines have experienced. The outlook for the military aircraft and missiles section of the industry is better. Growing global security concerns have increased the need for military aircraft, military aerospace equipment, and for military aerospace personnel, with increasing employment opportunities in the defense-related sectors of the industry.

Aircraft manufacturing is an industry of vast scale and complexity, requiring massive resources. The scale of projects, small annual volumes, long lead times and significant up-front development costs contribute to the view of aircraft manufacturing as a business of enormous risk (Rossetti and Choi, 2005). These risks are combined with the ever-increasing demands of buyers from both civil and defense markets. The need for firms to meet such varied demands as quality, cost reduction, delivery times, reliability, and innovation has led some to shift their focus from integrating within their firm to integrating across firms in order to coordinate and improve supply (Kopczak and Johnson, 2003; McLaren et al., 2002; Quinn and Hilmer, 1994; Quinn, 1999).

The aerospace industry is dominated by a few large firms that contract to produce aircraft with Government and private businesses, usually airline and cargo transportation companies. These large firms, in turn, subcontract with smaller firms to produce specific systems and parts for their vehicles. In addition, product lifecycles in the aerospace industry tend to be very long, and working closely with suppliers to obtain quality improvements and cost reductions over the lifetime of the product is typically preferable to short-term relationships (Rossetti and Choi, 2005).

Supplier relationships may offer companies the chance to spread high fixed costs, achieve synergies across programmes, and achieve economies of scale through larger production runs (Kopczak and Johnson, 2003; Trent and Monczka, 1998; Carter et al., 2000). The increasing significance of supplier relationships in some industries, for example automobile and aerospace industries (Rossetti and Choi, 2005) has seen suppliers assuming greater responsibility in areas such as engineering, programme risk and inventory control (Stimpson, 1998; Anderson and Katz, 1998). Shared investment in assets, shared expertise in manufacturing and assembly, and leveraging supplier capacity and flexibility are critical aspects of strategic relationships between buyer and supplier firms (McLaren et al., 2002). In turn, building buyer and supplier relationships between firms, which "maximise their respective market presence and profitability" is central (Rossetti and Choi, 2005:11).

As discussed in Section 1.2, although collaboration is considered challenging for firms (e.g. Ball, 1999; Handfield and Nichols, 2002; Huxham and Vangen, 2005) supply chain and supply chain management literatures have placed considerable emphasis on collaboration as a strategy for enabling firms to work together across organisational boundaries, towards achieving competitive advantage (e.g. McLaren et al., 2002; Bowersox et al., 2003; Tabibzadeh and Prokopets, 2006). Organisations operating within the aerospace industry are no exception to this, with collaboration seen as an opportunity for improving supply chain performance whilst also seen as a challenging pursuit (e.g. Johnson, 2003). Indeed, as Johnson (2003:178) observes in considering the challenge of collaboration for firms within the aerospace industry, "Collaboration involves a complete change in the way a company does business and people need to be prepared for this". The aerospace industry thus presents itself as an appropriate and interesting context in which to empirically investigate the pursuit of a strategy of collaboration within buyer and supplier partnerships seeking to improve supply-chain performance. In light of this observation, data gathering in this study revolved around a large system integrator firm manufacturing aircraft and subsystems for the aerospace industry, and four of its supplier firms.

Chapter Four presented the selection criteria for the system integrator firm including:

- Ease of access to research site;
- Consent to the project duration;
- Ambitions for collaborative improvement with selected supplier firms.

Accordingly, the system integrator firm in this study chose supplier firms based upon the following criteria:

- Pre-existing first-tier suppliers of current, or with the potential for, strategic importance
- Willingness to engage in collaborative improvement initiatives

Chapter Four outlined the data sources which this study drew upon in order to compile initial descriptive case studies of each buyer and supplier firm. Specifically, CO-IMPROVE data sources, including archival records and questionnaires, enabled the researcher to prepare an overview of the nature of each firm's business, each firm's history

with respect to working the dyad partner, and the characteristics of each dyad partnership. The following section presents these overviews.

5.3 An Overview of the Participant Firms

Data gathering in this study revolved around initiatives undertaken by the system integrator (SI) firm and four of its supplier (SU) firms. For identification purposes the firms will be referred to as follows:

- The System Integrator *(SI)*
- Supplier A *(SU A)*
- Supplier B *(SU B)*
- Supplier C *(SU C)*
- Supplier D *(SU D)*

Four teams were formed within the SI firm with each of these SI teams forming a dyad with an SU partner team. A summary of each organisation and each dyad involved in the CO-IMPROVE project is provided in the sections that follow.

5.3.1 The System Integrator (SI)

The System Integrator (SI) is an Italian firm operating in the aerospace industry since 1913. The firm has approximately 1800 employees and has a stock capital value of approximately € 11.5 million. Initially, the firm focused exclusively on serving the military market, producing mainly one single final product - a jet trainer aircraft. For this product, the firm carried out the entire production process, using a vertically integrated structure. In 1992, when facing a financial crisis, a major investor joined the firm as a minority shareholder. This influenced a re-definition of the firm's strategy with the decision to enter the civil market. The firm now operates in both military and civil markets and potential customers include all military air forces and all aircraft manufacturers. This strategic refocusing initiated a move away from a vertically integrated structure with an emphasis on the development of distinctive technologies and capabilities for the firm. As a consequence of vertical disintegration, purchasing has grown significantly in the last ten

years, increasing from €43 to €110 million in this period with the firm becoming a system integrator rather than a manufacturer for some products.

The aerospace industry is characterised by low volume, high value products, (from 10 to 60 military aircrafts per year and from 10 to 350 pieces for civil programmes) with a life-cycle of up to 30 years in the military sector and up to 15 years in the civil sector. The SI firm produces jet trainer aircraft, aircraft components, and sub-systems. The design and assembly of some of these products resides with larger system integrators and aeronautical consortia. Although the jet trainer is still the main product for the military market, the production for the civil market includes both components and sub-systems. These products are designed and assembled by large aircraft consortia including aerospace industry 'giants' such as Dornier, Boeing and Airbus. Currently, the military market accounts for less than 50% of turnover, revolving around the production of traditional jet trainers and also participation in international programmes. The products for the civil market are grouped into two categories: aero-structures and nacelles. *Aero-structures,* or aircraft body components, are produced and delivered directly to system integrators, such as Dornier or Airbus. On the other hand, *nacelles* – enclosures for an aircraft engine - are sold only to engine producers, such as General Electric, Pratt & Whitney and BF Goodrich.

In the military aerospace sector, competition takes place mostly at governmental level. In the civil market however, single companies compete within global consortia. Global consortia choose a different network of suppliers for different programmes in order to exploit competition among them. This means that a single firm can be a customer, competitor, and supplier to a system integrator in different programmes. A distinctive aspect of this industry is that competition is limited to the bidding phase, afterwards allowing the opportunity for co-operation between firms. In turn, once a network has been selected for a specific programme, demand is guaranteed to the suppliers determining a much greater stability of relationships. This implies that demand is known in advance, allowing make-to-order production, and long-term planning. The expansion in purchasing has underscored the significance of supplier relationships for the SI firm, with management of the supply base seen as a critical task. To succeed, new competencies have been developed and the SI has focused on distinguishing technologies and capabilities, allowing not only the survival but continued growth and prosperity of the firm. Furthermore, large customers are pursuing a continuous process of cost reduction in order to maintain market share and sales. The SI firm's network of suppliers ranges from very small, local

companies to world-level players. Activities are outsourced for a number of reasons including:

- Access to specialised competencies;
- Lack of sufficient internal production capacity; and
- Cost reduction

The aerospace industry is characterised by strict quality requirements, which demand the certification of every part of a product, the raw materials used, and the work performed. Only certified suppliers can be used, allowing perfect product tracing where necessary. The final customer may also request specific sub-suppliers to provide components to the system integrator. The SI classifies its supplier relationships based upon the scope of activities performed, ranging from suppliers of a small set of operations and workings, to those that deliver a finished part or sub-system. In the former, suppliers directly manage every phase of the production process relating to the part (s) outsourced. In the latter, the SI provides materials and supervises the procurement process. For this project, the SI decided to select suppliers which represent both relationship categories.

The following section introduces each of the four supplier firms involved in collaborative initiatives with the SI.

5.3.2 Supplier A (SU A)

Supplier A is a family-run firm, founded in 1975. Based in northern Italy, it manufactures prototypes and special parts in small/medium series through CNC (computer numerical control) and non-conventional machining for the aerospace, automotive, and telecommunications industries. CNC machine-service providers use machines that are fast, repeatable, and programmable and which can function while unattended. This makes it possible to manufacture parts quickly and efficiently. Supplier A is located in very close proximity (2 km.) to the SI firm, bestowing preferred supplier status for fast prototyping and urgent deliveries upon the supplier. Despite its small dimensions (14 employees and €1.3 million of turnover in year 2000), the firm works for a variety of high-technology customers in electromechanical, automation, telecommunications and aeronautics.

As a specialist in fast prototyping, and urgent order fulfilment characterised by high technological complexity and precision, the firm has engineering capability and develops schedules and equipment starting from 3D models. This is not the situation with respect to products for the SI firm however, as these are already developed and industrialised. Instead, Supplier A is essentially is a sub-contractor of production capacity, mainly on old programs, prototypes and tools. The SI contributes 10% to this supplier's total revenue, ranking in the supplier's customer 'top 10' listing. Currently however the supplier is cooperating in a new prototyping program for aircraft development. This program is important as it could lead to the diversification and amplification of its work for the SI. In light of the supplier's close proximity to the SI, and due also to new program under discussion by the firms, they meet regularly and communicate almost daily to discuss operational matters. An overview of the background relationship between the SI and SU A is presented below.

SI and SU A - Relationship History

SU A has a stable, eight-year long relationship with the SI firm with willingness from both sides to develop the relationship around new programs. The SI considers this supplier to be satisfactory in meeting quality requirements and delivery schedules. This satisfactory record forms the basis of the SI firm's decision to consider this supplier for the new programme which is currently in its prototyping phase. This project is to act as a testing ground for the supplier's future role in this programme, and to create an opportunity to trial process improvement activities with the supplier. These process improvements may also be 'rolled-out' across other suppliers in time. For the supplier, the project is considered strategically significant as it would enable it to diversify future production for the SI away from the, mainly old programmes, they currently supply. In addition the project may facilitate the guarantee of longer-term, future orders, with new programmes also providing an opportunity to increase order levels from the SI firm. A history of operational difficulties and problematic negotiations exist between the firms however. For example, the supplier has refused to make specific investments without the guarantee of orders for the next few years. This statement supports the supplier's high level of uncertainty expressed in relation to future operations with the SI, in addition to the 'low to medium' level of trust perceived by the firm.

5.3.3 Supplier B (SU B)

Established in 1976, Supplier B began as a metal producer for the printing machinery industry. In 1982, it developed competencies in high technology metalworking for the aeronautical industry. In the late 1990s, it diversified into galvanic treatments and painting technologies, in addition to the design and engineering of products and equipment starting from 3D models provided by customers. Today, the firm has thirty employees with customers from both the aeronautical industry and from other industries such as packaging, machinery, and micro-casting production. The firm provides quality-certified, finished parts that can be assembled with standard components or that can be customised. Products are usually prototypes or small series of mechanical parts with high technological content. The particular set of activities performed depends upon the requirements of the customer and upon the programme involved. For the SI firm in this study, Supplier B is a subcontractor of metalwork and surface treatments on parts. Due to the specialist nature of this firm's activities they have invested in specialist IT applications such as Manufacturing Resource Planning and also a CATIA (Computer Aided Three dimensional Interactive Application) system which is the benchmark for computerised drawings and equipment in galvanic treatments in this industry. Commonly referred to as a Product Lifecycle Management software suite, CATIA supports multiple stages of product development from conceptualisation, through to design, manufacturing and analysis. An overview of the background relationship between the SI and SU B is presented below.

SI and SU B - Relationship History

SU B has a long, stable, ten-year relationship with the SI firm, which accounts for 45% of SU B's total turnover. Accordingly, this ranks the SI as this supplier's most important customer, resulting in a high level of dependency upon, and large power disparity with, the SI. This partnership has been in existence for a long time however and is therefore considered by both firms to be a strong, stable, strategic relationship. Previously, both parties have committed to the partnership through joint improvement initiatives and dedicated investments, by both firms, in industry-standard design and manufacturing equipment. Moreover, the SI has been involved in this supplier's internal process improvements through its management of certifications, people qualifications, process qualifications, and monitoring of corrective solutions.

As a small, local supplier there is frequent interaction between the companies with the supplier able to respond quickly to urgent problems arising in production. However, while both sides communicate frequently, a structured approach to interaction, planning, or problem solving does not exist, making it difficult for the supplier to know who to contact within the SI firm when problems arise. Management in both the SU and SI consider the collaboration initiative to be strategically significant, providing an opportunity to develop their relationship and increase mutual understanding of shared systems and processes. In particular, the SI seeks to further develop this relationship through outsourcing other activities including testing, painting, and controlling to the supplier. Accordingly, it is critical for the supplier to achieve certification for testing specific raw materials, as this is a requirement of some SI customers. The SI also requires a supplier who can guarantee delivery time, which is a critical factor for the success of a new programme under development. The SI is therefore interested in testing a lead-time reduction initiative with this supplier with a view to considering it as a key supplier for the new programme. Lead-time is defined by the SI firm as the time between the first informal negotiation regarding supply and the final delivery of the tested product.

5.3.4 Supplier C (SU C)

Supplier C was founded in Italy in 1947, entering the aerospace industry in 1953. It now competes exclusively in this industry, developing significant competencies and investing in machinery specific to performing surface treatments within this industry. Currently, the firm has approximately 210 employees and approximately € 20 million in turnover. A particular skill of the firm relates to design of equipment, which offers customisation for assembly and manufacturing parts. Supplier C also produces metal parts that are machined and finished for integration into Airbus manufacturing programs at the SI. Its capabilities include specialist IT applications such as Manufacturing Resource Planning, CAD, and expertise in designing with CATIA. Supplier C manufactures complete parts for the SI firm, which accounts for approximately 9% of Supplier C's total turnover. It is also involved in the design of equipment, providing complex and specific parts to the SI for assembly and manufacturing. An overview of the background relationship between the SI and SU C is presented below.

SI and SU C - Relationship History

SU C has a long and stable, ten-year relationship with the SI firm. The partnership is very close with both companies previously co-operating on improvement activities such as a cost reduction initiative for Airbus parts. This previous cooperation between the firms involved a sharing of goals to meet specific cost targets. Moreover, the SI is involved in the supplier's internal process changes since they insist on controlling processes and approving any changes that have to be made. Accordingly, the supplier is 'medium to highly' dependent on this top 5 customer. In contrast, the large buyer is less dependent due to its more powerful position in the Airbus consortium.

Despite this situation, management in the firms considers that there is little direct interaction between the firms, and also a lack of shared goals. In addition, recent problems have arisen with quality and delivery, which have been exacerbated by internal problems in the supplier (the firm had introduced unemployment compensation). The SI firm sought to improve the relationship with the SU firm in order to explore opportunities for this supplier to provide for future programmes. The supplier firm agreed to participate but did not assign much importance to collaboration, considering it already had a good relationship with the SI firm. At the time of the commencement of the project the SU firm was experiencing a downturn in the market. This downturn made it difficult for the firm to commit resources to the project. The SI was unsure as to the willingness of the supplier to participate in the project and believed that management in the supply firm was not very supportive of the project goals.

5.3.5 Supplier D (SU D)

Supplier D was formed in 1986 as a subsidiary of a sporting goods producer, developing capabilities in the technology of composite materials. The firm's headquarters and main plant are in Austria where approximately 800 people are employed. Rapid growth in recent years has enabled it to become a leading firm in its field, specialising in the design and manufacturing of composite products and parts, with a wide customer base which includes the majority of aircraft assembly companies. The firm is almost entirely focused on composite components for the aerospace industry, split into two categories: *structural components* and *interiors*. The firm's capabilities include research and development,

design, engineering, and full production cycle involving product preparation in clean-rooms, autoclave or oven treatment, machining, painting, quality inspection (ultrasonic and X-ray), assembly, and shipping. Today, emphasis has shifted towards becoming a supply chain manager for the final customer i.e. first tier supplier of a complex sub-assembly, for which it becomes a system integrator. The firm's first system integrator role related to the supply of finished structural engine components for Rolls Royce products, which required managing the assembly of parts through a combination of internal and external sub-supplier production. An overview of the background relationship between the SI and SU D is presented below.

SI and SU D - Relationship History

SU D has a three-year relationship with the SI firm. The supplier provides composite parts to the SI firm although the SI also manufactures these composite parts internally. The supplier is also therefore a direct competitor of the SI firm, which is especially significant considering the trend in the aerospace industry towards the delivery of complete systems. This partnership is best described through an example. In one situation, SU D manufacturers fan cowl doors for the engine nacelles of the Airbus, which in turn are assembled by the SI and delivered to another assembler. These same components are also produced by the SI where actual orders are split 50-50 between the two companies. Originally, the SI outsourced the manufacturing of these composite parts to a supplier but nowadays it is considered by the firm to be a core competency, which it exploits to obtain new orders. For the supplier, the sale of these components comprises 5% of total turnover. SU D is therefore not only a first-tier supplier, but also a direct competitor of the SI firm.

Despite the fact that both of these firms are competitors, they each view the collaborative initiative as an opportunity to learn from each other with a view to acquiring new orders in a dynamic and rapidly growing business environment. In particular, there is a need to improve the quality of finished parts in response to pressure from a shared final customer. Accordingly, both firms identify the value of concentrating their efforts in meeting customer expectations and managing customer relations. In particular, the SI has significant expertise in the finishing of parts and in the reduction of part defects. This expertise creates an opportunity for the supplier to learn from the SI firm, and creates an opportunity for the SI to eliminate overlapping quality control procedures and reduce delays in the delivery of supplier parts due to part defects.

As this supplier is based in Austria, the firms typically interacted via fax, telephone, and email. Although communication was frequent both firms identified geographic and language barriers between them, with face-to-face meetings infrequent and considered difficult to organise. In particular, both firms felt that they could not identify the key personnel responsible for specific tasks in each other's organisations, which acted as a barrier to forming a closer working relationship. Prior to the commencement of this project however, SU D was experiencing a downturn in their market and the SI had recently reduced order levels with this supplier. The SI felt that the mutually beneficial nature of the initiative may help to improve the relationship between the firms but was concerned that the supplier would be reluctant to engage fully with the project under the challenging circumstances of a market downturn. Although the supplier was uncertain as to the future of its commercial relationship with the SI firm it recognised the project as potentially beneficial for operations. A summary of the characteristics of each participating firm, in terms of size and turnover, is presented in Table 5.1.

Table 5.1: Characteristics of the Participating Firms

	SI	SU A	SU B	SU C	SU D
Size	Large (1,800+)	Small (14)	Small (30)	Medium (200)	Large (800+)
Turnover	€ 235 million	€ 1.3 million	€ 6 million	€ 20 million	€ 110 million

Source: CO-IMPROVE Questionnaire

Further to the firm and dyad history overviews provided in the preceding sections, additional characteristics of these firms and dyad relationships are presented in the following section.

5.3.6 Characteristics of the Firms

Chapter Four discussed the questionnaire developed by the company learning network as one of the CO-IMPROVE data sources this study drew upon. Based upon this questionnaire, a number of 'positioning' characteristics of each buyer-supplier partnership were identified. The characteristics investigated were informed by CO-IMPROVE researchers' knowledge of extant studies conceptualising buyer-supplier partnerships. The

characteristics of these dyads, summarised from CO-IMPROVE questionnaires, are presented in Table 5.2.

Table 5.2: Dyad Characteristics

Characteristics	Dyad A		Dyad B		Dyad C		Dyad D	
	SI	SU	SI	SU	SI	SU	SI	SU
Length of Relationship	8 years		10 years		10 years		3 years	
Volume of Sales (Attributable to SI)	10%		45%		9%		5%	
Importance of Relationship	Med.	Med.	Med.	High	Med.	Med.	Med.	Med.
Future Relationship *(Length)*	Med to Long-Term		Long-Term		Long-Term		Med. To Long-Term	
Dependency	Low	Med.	Low	High	Low-Med.	Med – High	Low	Med.
History of Projects	Yes		Yes		Yes		Yes	
Trust	Medium		Medium		Medium		Medium	
Power	High	Low	High	Low	High	Low	Med.	Med.

Source: CO-IMPROVE Questionnaire Responses

In reflecting upon the above characteristics, the supplier firms revealed a higher dependence and investment towards the larger buyer (SI) firm and perceived they had less power in the relationship (with the exception of SU D). This situation is common in aircraft industry relationships where a dominant buyer is a manager for the larger consortia. The relationship between SI and SU D represents a unique relationship where the buyer is forced into cooperating with a fellow competitor due to the nature of the consortia agreement.

In addition, Chapter Three introduced Bensaou's Contextual Profiles Model for Buyer-Supplier Relationships Model as recreated in Table 5.3.

Table 5.3: Contextual Profiles for Buyer-Supplier Relationships

Captive Buyer	*Strategic Partnership*
• Technically complex product • Buyer dependent • Partner not easily replaceable • Strong bargaining power • Supplier proprietary technology • Few supply alternatives	• High level of product customisation • Close to buyers' core competencies • Strong demand in market • Very competitive market • Supplier excellence • Early Supplier involvement • Strong supplier proprietary technology
Market Exchange	*Captive Supplier*
• Standardised products • No specialised assets invested • Many capable suppliers • Competitive, price-based market • Low bargaining power • Low switching costs • No propriety technology	• Technically complex product • Heavy capital investment required • Strong demand in market • Fierce competition • Heavy dependency on the buyer • Low supplier bargaining power • Strong supplier proprietary technology

Source: Summarised from Bensaou (1999:38)

Drawing upon CO-IMPROVE data including questionnaires, and using this model to contextualise the dyad relationships in this study, would suggest Dyads A, B, and C as falling within the Captive Supplier Cell. In turn, Dyad D would seem to fall more within the Strategic Partnership Cell than any of the other cells. The 'Importance of Relationship' and 'Future Relationship' characteristics within the preceding Table 5.2 suggest the ambition for strategic partnership within all of these dyads. These buyer-supplier profiles will be considered with respect to the similarities and differences observed during the cross-case analysis in this study.

Chapter Three presented the conceptual framework which underpins this study. This framework recognises existing patterns of thinking and acting as providing the context within which collaboration is initially made sense of. The above data drawn from CO-IMPROVE sources illustrate how members currently conceive of aspects of their organisation and the environmental context. These data are used in this study to illustrate the context in which a strategy of collaboration is being pursued. These characteristics will be revisited in Chapter Six with a view to understanding their relevance, if any, with respect to the findings in this study. The following section outlines the collaborative improvement initiatives in which these firms engaged.

5.3.7 Collaborative Improvement Initiatives

Table 5.4 below outlines the collaborative improvement initiatives undertaken by the firms in this study.

Table 5.4 Synopsis of Collaborative Improvement Initiatives

Dyad	Improvement Initiatives	Departments Involved	Operational Objectives
Dyad A: Initiative 1	Improve order cycle management to reduce delivery delays	Purchasing; Quality; Problem-setting; Production	Reduce delays in the delivery on a specific part
Dyad A: Initiative 2	Monitor status of employee certification required in the industry	Purchasing; Quality; Problem-setting	Information sharing to create visibility of employee status
Dyad B: Initiative 1	Eliminating cosmetic problems on a part and improving communication	Purchasing; Engineering; Quality	Eradicate production defects on all fan cowl parts
Dyad B: Initiative 2	Improve Vendor Materials Review Request (VMRR) process	Purchasing; Engineering; Quality	Manage corrective executions identified by review process
Dyad C: Initiative 1	Cost reduction for a part within a nacelle programme	Purchasing; Engineering; Production	Reduce supplier cost & SI price reduction
Dyad C: Initiative 2	Database to monitor tools/equipment on loan to supplier	Purchasing; Engineering; Production	Provide visibility of the current equipment status to prevent delays
Dyad D: Initiative 1	Reducing lead-time for delivery of tools	Purchasing; Production; Problem-setting	Reduce internal & inter-company lead-time

Dyad D: Initiative 2	Monitor the order cycle to increase visibility of the process	Purchasing; Production; Problem-setting	Reduce variance on the delivery orders to improve their punctuality

Source: CO-IMPROVE Documentation

As discussed in Chapter Four, CO-IMPROVE documentation and progress reports contributed to the researcher creating descriptions of the following:

- Nature of the collaborative initiatives undertaken by each dyad team;
- Ongoing actions / activities performed by the teams around the execution of collaboration initiatives; and
- Outcomes attained during, and at the end of, each initiative.

Descriptions of the collaborative improvement initiatives including actions / activities performed by the teams around the execution of collaboration initiatives, and operational outcomes attained, are provided in *Appendix 1*. A summary of the operational outcomes of those initiatives identified in the preceding Table 5.4 are provided in Table 5.5 and Table 5.6 respectively.

Table 5.5: Initiative 1 – Operational Outcomes

	Dyad A	**Dyad B**	**Dyad C**	**Dyad D**
Lead-Time	Inter-firm lead-time reduction of 54%			
Delivery Time		Delays reduced by 80%		
Cost			Cost reduction in one part of 14% & price reduction of 8%	
Quality				Part defects fixed in 3 selected products

Source: CO-IMPROVE Documentation

Table 5.6: Initiative 2 – Operational Outcomes

	Dyad A	Dyad B	Dyad C	Dyad D
Lead-Time	Inter-firm lead-time reduction of 6 months			
Quality		Data management system developed	Formalisation of system to highlight and mange defects	Part defects fixed in 5 selected products Formalisation of system to highlight and mange defects

Source: CO-IMPROVE Documentation

As discussed in Section 4.9, team interviews and researcher journaling were used to gather data with respect to sensemaking triggers, social interaction processes of sensemaking, influences on sensemaking, team interpretations, and accompanying actions and activities. These data are presented in the following section and represent team responses to interview questions and also researcher journaling notes, and observations made by the researcher, with respect to team actions and activities.

5.4 Team Sensemaking in Relation to the Process of Collaboration

This section presents data from team interviews, researcher journaling notes and observations. In an effort to marshal the vast amounts of data, these data are presented following first-level data analysis whereby data are sorted to show interpretations and actions, conceptualised as follows:

- *Team Interpretations:* conceptualised as interpretations that a team arrives at with respect to understanding and acceptance of the vision, transition process, and likely outcomes of collaboration e.g. statements with respect to 'this is what the team thinks'; 'this is what the project is about'; or 'this is what the project means'.
- *Actions:* actions, activities, and behaviours that teams link to their interpretations through the use of terminology such as 'so' 'because'; 'leading to'; 'resulting in' 'due to'.

Evidence of changes in team interpretations and actions was looked for throughout the ongoing interview process. Changes were identified as turning points in interpretations

and actions as distinct from time frames in which interpretations and change outcomes remained relatively constant (Adam, 1990). Examples of evidence of evolving interpretations drawn from data include:

- Shifts in thinking from 'negative' to 'positive' or vice versa;
- Evidence of new ideas or views not previously discussed;
- Revising previous ideas or views suggesting 'then and now; and'
- Emphasising original thinking more strongly

In addition, examples of evidence of evolving actions, activities and behaviour drawn from data include:

- Evidence of new or different actions, activities and behaviour from those previously displayed;
- Evidence of previously avoided actions, activities or behaviours;
- New plans; and
- Teams reinforcing their original actions, activities and behaviour through more intense efforts

As discussed in Section 4.9.2 these 'turning points' indicate cycles of sensemaking rather than 'clock time'. These turning points are identified as Period T0, Period T1, Period T2, etc. Where turning points were identified, interviews explored the links to triggers which caused a team to revise its initial interpretations and actions, the social sensemaking processes the team engaged in, and any influences the team perceived as acting upon on the sense that it made.

These are conceptualised as follows:

- *Sensemaking Triggers*: conceptualised as events, activities, and circumstances which teams identifying as triggering their need to revise their previous interpretations and actions.
- *Social Interaction Processes of Sensemaking*: conceptualised as verbal and written communication which may be formal or informal in nature, negotiations and decision-making, stories, rumours, gossip, jokes, and behaviour and action signals, that a team engages in as it attempts to make sense of collaboration changes.
- *Influences on Sensemaking*: conceptualised as existing ways of thinking and working, in addition to newly emerging influences which a team identifies as influencing its

revised thinking and actions. Influences are identified according to a team's use of linking terminology such as 'because'; 'accounting for'; 'leading to'; and 'influencing'.

Accordingly, the data from team interviews, sorted with respect to the preceding conceptualizations, and ordered to illustrate changes each team are presented below.

5.4.1 System Integrator A (SI A)

Period T0:

Initial Context and Interpretative Schemes: supplier has not been performing well recently; supplier is too passive and not a strong player; the owner-manager is difficult to deal with at times, is too conservative, but otherwise the existing relationship is fine; there is a need for supplier improvement in some areas; the supplier works for the SI therefore the SI team should have control over the initiative

Period T1:

Team Sensemaking: stories; sharing experiences; speculating about collaboration
Developing Interpretative Schemes: collaboration not very beneficial as a way of working; collaboration is demanding and not really necessary as the delivery delays are the supplier's fault and the supplier should accept responsibility and just perform improvement tasks as instructed; SI needs to minimise the impact of collaboration on its current operations
Emerging Change Outcomes: tension between the teams; SI feeling it needs to become more assertive with the SU team and take a formal and directive approach to ensure the SU takes responsibility for corrective action

Period T2:

Sensemaking Triggers: evidence from outcome of change initiative; SI leader's reminder of the strategic significance of collaboration for the firm
Team Sensemaking: team discussions; documentation and reports from workshops; meeting with SI leader

Developing Interpretative Schemes: collaboration requires a lot more input and responsibility from the SI and needs to be taken more seriously; team needs to work with the SU and not assume it has all the solutions; management disappointed with SI performance
Emerging Change Outcomes: team-led corrective action; plans made for further improvement to address delivery delays; intentions and plans to change its approach to interacting with the SU

Period T3:

Sensemaking Triggers: improvement in relationship with SU e.g. SU becoming more proactive and taking more responsibility; increased understanding of the value and benefits of collaboration; SI leader's continued focus on results
Team Sensemaking: dyad meetings to share ideas and plan; joint investigative action; dyad discussions; SI leader discussions
Developing Interpretative Schemes: collaboration is important to the firm but worthwhile for the team also; collaboration needs to be taken seriously to generate results for the team and the firm; results can only be achieved by working together
Emerging Change Outcomes: sharing responsibility with SU for initiative activities; new structures and processes for collaborating; dyad relationship perceived as improving

Period T4:

Sensemaking Triggers: end of initiative announced with reflection on improvement results to date
Team Sensemaking: team and dyad discussions; management support in discussions
Developing Interpretative Schemes: collaboration valued by the team; additional benefits expected; worthwhile sustaining collaborative approach
Emerging Change Outcomes: planning new initiatives; dyad operating independently from management i.e. self-planning and organising with respect to future initiatives; SU seen as capable and valuable contributor to making progress

5.4.2 Supplier A (SU A)

Period T 0:

Existing Context and Interpretative Schemes: improvement initiative necessary; SI needs to make changes but not sure if the SI is willing to change - project may therefore impose change upon SU; relationship good but not equal i.e. SI-led decision making; management concerned with SI firm's intentions to impose change, particularly in light of recent relationship issues between management

Period T1:

Team Sensemaking: discussions around the launch meeting; SU team and manager meetings; rumours and speculation about SI firm intentions led by SU manager
Developing Interpretative Schemes: negative view of collaboration e.g. collaboration change is threatening; collaboration needs to be managed to avoid negative consequences of change for current relationship
Emerging Change Outcomes: compliance with SI instructions whilst subtly blocking progress to limit project demands

Period T2:

Sensemaking Triggers: evidence from initiative findings
Team Sensemaking: findings report; dyad meeting and ongoing communications with SI team; SU team meetings and SU manager meetings
Developing Interpretative Schemes: collaboration led to positive changes which surprised the team; project seems worth pursuing; owner-manager's original views do not seem to be substantiated
Emerging Change Outcomes: agreement to continue working on second initiative; clearer understanding of the project's purpose, perceive project to be less threatening and SI intentions to be clearer

Period T3:

Sensemaking Triggers: ongoing meetings; change in SI approach e.g. sharing roles and responsibilities; formal structure creating greater visibility of shared processes; internal support from peers and experts
Team Sensemaking: ongoing experiences and communications with the SI dyad and feedback from SU peers
Developing Interpretative Schemes: collaboration has enabled significant change which the SU had not thought possible, particularly in relation to the more equal power relationship between the firms; collaboration could be of benefit in other aspects of the SU team's relationship with this and other suppliers
Emerging Change Outcomes: SU more proactive; SU positive about changes and operating at dyad-level; considers plans to be shared rather than "us versus them" in approach

Period T4:

Sensemaking Triggers: changes in SI relationship; initiative outcomes; peer support
Team Sensemaking: dyad meetings and initiative reports; SI leader support
Developing Interpretative Schemes: collaboration worthwhile pursuing for both the team and the SU firm; owner-manager does not understand collaboration's potential
Emerging Change Outcomes: supportive of and proactive in planning future initiatives; less dependent on SU manager, instead focusing on operations at dyad-level; less supportive of owner-managers views, focusing instead upon trying to change rather than support these views

5.4.3 System Integrator B (SI B)

Period T0:

Existing Context and Interpretative Schemes: there is a need for operational and relational improvements with the SU; current problems are due to the SU which needs to take more responsibility for change; SI team needs to supervise the process to generate change within the SU

Period T1:

Team Sensemaking: discussions around the launch meeting; internal team discussions and speculation as to what collaboration is about and how the team needs to manage the process
Developing Interpretative Schemes: SU is responsible for initiative problems; collaboration is improvement -focused and can bring about necessary changes in the SU
Emerging Change Outcomes: directive approach to dyad interaction; 'them versus us' approach to working with the SU team

Period T2:

Sensemaking Triggers: evidence and reports from initiative investigation; SU lack of performance
Team Sensemaking: team meetings; meeting with SI leader
Developing Interpretative Schemes: the SI team needs to participate directly in activities rather than supervise activities to ensure progress is made; collaboration and the current relationship with the SU is complex; SI team responsible for outcome and need to manage results to protect its performance reputation;: SI team cannot achieve results by dominating proceedings
Emerging Change Outcomes: announcement of a change in approach to working with SU; internal KIAZEN initiative; plans made in order engage more directly with the initiative; attitude change i.e. including SU in planning and decision making and encouraging sharing of views and ideas; not assuming knowledge of what collaboration is about but stating willingness to learn more about the process

Period T3:

Sensemaking Triggers: increased understanding of collaboration and its benefits; new structures and processes; understanding the value of SU team's inputs for improvement; peer and management support
Team Sensemaking: supportive comments from peer and management; dyad-level meetings and progress reports

Developing Interpretative Schemes: collaboration can facilitate change; working with SU is far more effective than controlling project; collaboration is complex and is more than just the teams working together; management support from both sides is necessary
Emerging Change Outcomes: joint negotiation; shared roles and responsibilities; change in attitude from "us versus them"; learning and increased visibility of shared systems and processes

Period T4:

Sensemaking Triggers: end of initiative announced; management support for continuation
Team Sensemaking: internal support; SU stories about internal complications; reports and initiative outcome success
Developing Interpretative Schemes: collaboration generated unexpected but valuable changes in operations and relationship; collaboration is a platform for achieving further change with other suppliers; performance reputation is enhanced; collaboration is complex and needs both sides to make it work; limited value in continuing efforts with SU
Emerging Change Outcomes: identified further uses of database table and other suppliers with which to pursue collaboration

5.4.4 Supplier B (SU B)

Period T0:

Existing Context and Interpretative Schemes: need for improvement initiative but not very interested in addressing problems; initiative probably due to problems on both sides (SI and SU) but addressing these may lead to additional complications e.g. loss of control and built-in flexibility in SU system; additional SI demands may prove threatening to current operations; good relationship with SI but little control i.e. unequal relationship

Period T1:

Team Sensemaking: meeting with SU manager; team speculations about SI intentions and possible consequences of project participation; SI internal discussion on dyad meeting

Developing Interpretative Schemes: collaboration likely to generate changes according to the SI agenda, which would not benefit the SU; collaboration is too demanding; collaboration perceived as threatening and needs to be managed to minimise its impact
Emerging Change Outcomes: SU withdrawn and compliant e.g. agrees with SI during meetings but internally makes plans to block project progress

Period T2:

Sensemaking Triggers: evidence from initiative investigation; SI team presentation and apparent change in attitude; owner-manager discussion
Team Sensemaking: team discussion; SI team presentation,
Developing Interpretative Schemes: collaboration is a potential vehicle for beneficial change; the SI team seems to be facilitative but there is SI pressure and owner-manager pressure on the team
Emerging Change Outcomes: more proactive and engaged with SI but still concerned with limiting the demands of collaboration and avoiding committing resources

Period T3:

Sensemaking Triggers: perceived changes in SI attitude; internal support and recognition from peers; internal SI change initiative
Team Sensemaking: SU experts feedback; dyad meetings; SU owner manager feedback
Developing Interpretative Schemes: collaboration is a valuable means of addressing much sought-after improvements for the team and the firm as a whole but needs management support
Emerging Change Outcomes: interactive and participative at dyad-level; sought internal support for the project; declared a positive attitude toward continuing with collaborative approach

Period T4:

Sensemaking Triggers: lack of owner-manager support; internal politics;
Team Sensemaking: management meeting; dyad meeting; team discussions
Developing Interpretative Schemes: collaboration offers great potential for improvement but likely to be limited due to lack of owner-manager support and resources
Emerging Change Outcomes: no further improvements planned; team disappointed with owner-manager response and lack of further initiative planning

5.4.5 System Integrator C (SI C)

Period T0:

Existing Context and Interpretative Schemes: operational improvement is necessary but project seems confusing and demanding; effective working relationship already established with the SU; SI manager very interested in generating improvements with this firm

Period T1:

Team Sensemaking: team discussion and speculations
Developing Interpretative Schemes: change to existing relationship unnecessary; collaboration could lead to increased workload and affect the existing relationship; engaging in project only in order to meet management expectations
Emerging Change Outcomes: slow to engage in collaboration; reliance on SI leader direction; team stated little enthusiasm for project

Period T2:

Sensemaking Triggers: SI leader discussion on strategic vision and benefits of collaboration for the firm; SI investment decisions; initiative outcomes and future plans
Team Sensemaking: team and management discussions; team discussions about outcomes and management expectations
Developing Interpretative Schemes: collaboration considered not too demanding but more

beneficial for the firm rather than the team; no improvement perceived in relationship with SU team but accepted SU was under market pressure at this time; collaboration of little interest to the SI team with the decision to engage more fully at this stage based upon the increased pressures to meet management expectations
Emerging Change Outcomes: SI team took more responsibility to ensure successful initiative outcome

Period T3:

Sensemaking Triggers: experience of engaging in project; management feedback and pressure to perform
Team Sensemaking: team discussions and concerns; reflections on lack of improvement
Developing Interpretative Schemes: collaboration considered a pressurised way of working offering little benefit for the team, although beneficial for the firm
Emerging Change Outcomes: SI team took more responsibility for initiative activities but not enthusiastic about the project beyond perceived need to meet management expectations

Period T4:

Sensemaking Triggers: management support for initiative outcome and continuing with the project; lack of team-level benefits to date
Team Sensemaking: team meeting and discussions
Developing Interpretative Schemes: demands of collaboration exceed any benefits and collaboration is not beneficial for the team; collaboration imposes too many demands on existing workload and relationship with SU has not improved; demands of collaboration have led to a less effective working relationship with the SU
Emerging Change Outcomes: complied with activities but requested not to remain involved in the project

5.4.6 Supplier C (SU C)

Period T0:

Existing Context and Interpretative Schemes: market downturn of greater concern than the project; existing relationship is fine and change is not necessary

Period T1:

Team Sensemaking: team speculations about project purpose and limited management expectations
Developing Interpretative Schemes: collaboration seems confusing and unnecessary, particularly in light of current market concerns; need to meet management expectations to attend meetings but intend only to comply with SI demands rather than engage fully with initiatives
Emerging Change Outcomes: little enthusiasm for the project; initial compliance with SI leader requests and subsequently withdrew from the project

Period T2:

Sensemaking Triggers: SU management support and involvement with the initiative decision making; SI leader's supportive role
Team Sensemaking: team discussions, management meeting
Developing Interpretative Schemes: collaboration important as a symbol of the firm's commitment to the SI firm; there is a need to protect this relationship and future orders; team has a role to play in ensuring no further damage to the relationship with the SI and to maintain current supplier status with the SI
Emerging Change Outcomes: complied with activities as expected and carried out requirements accordingly and within the given time-frame

Period T3:

Sensemaking Triggers: experienced SI leader support and management pressure with respect to performance; team experiencing more responsibility and sense of project ownership; more strategic role in negotiations with SI leader; peer support; team's

realisation of its ability to affect change within and between firms
Team Sensemaking: involvement in management meetings; team discussions; peer discussions
Developing Interpretative Schemes: collaboration capable of generating improvements and opportunities for the organisation
Emerging Change Outcomes: proactive approach to driving initiative progress e.g. shared decision-making with SI management and internal experts and prioritisation of planning and executing initiative activities

Period T4:

Sensemaking Triggers: initiative success; management and peer support; SI team lack of interest in continuing with project
Team Sensemaking: team and management meetings; SI team feedback
Developing Interpretative Schemes: collaboration beneficial for the future of the firm helping to strengthen the SU firm's strategic position with the SI and also in the marketplace; collaboration beneficial for team's performance reputation; expectation of future benefits of collaboration; little change in relationship with SI team
Emerging Change Outcomes: team agreed to continue with future initiatives with the SI firm; team plans ways to 'roll-out' initiative for future operational improvements

5.4.7 System Integrator D (SI D)

Period T0:

Existing Context and Interpretative Schemes: collaboration is an opportunity to address recent operational problems and perhaps improve dyad relationship also; SI has superior knowledge of process and can assist SU in making improvements

Period T1:

Team Sensemaking: team meetings and discussions
Developing Interpretative Schemes: speculation that this formal approach would give the SI an opportunity to address SU quality problems; collaboration involves the SI identifying the corrective action and the assigning corrective action to the SU
Emerging Change Outcomes: SI dominated initial workshops and identified causes and corrective actions to be undertaken by the SU; SI controlled planning and task assignment

Period T2:

Sensemaking Triggers: evidence from the initiative investigation including evidence from internal experts showing incorrectness of SI team's initial assumptions and ineffectiveness of SI team's approach to interacting with the SU; SI leader pressure;
Team Sensemaking: team discussion of findings; workshop reports; experts' feedback
Developing Interpretative Schemes: need to change initial interaction strategy with the SU team and try to work differently to achieve results e.g. need to take back power in the dyad relationship and work with SI experts; concern with performance reputation and failure to meet management expectations; concern with shift in power relationship with SU team
Emerging Change Outcomes: retained 'us and them' mentality towards SU team and instead focused on working with SI experts; organised meetings and training sessions with SU experts; ongoing concern with performance reputation; continued to dominate proceedings with the SU

Period T3:

Sensemaking Triggers: experience of working with the SU team and learning from SU; successful initiative outcomes; management support for performance outcomes
Team Sensemaking: team meetings; SI expert feedback; dyad workshops; management feedback
Developing interpretative Schemes: collaboration requires teams to work together jointly to investigate problems, share knowledge and ideas; SU has valuable knowledge and

insights about processes and collaboration helps bring the teams together
Emerging Change Outcomes: working jointly with SU and sharing responsibility for performance

Period T4:

Sensemaking Triggers: management support; initiative outcomes; change in SU attitude in planning further initiatives
Team Sensemaking: management feedback; initiative reports; workshop presentations; team discussions; dyad discussions
Developing Interpretative Schemes: expectation that collaboration would continue to be beneficial; opportunity for learning and improvement with this and other suppliers; collaboration enhances performance reputation
Emerging Change Outcomes: planning future initiatives with SI leader and SU team

5.4.8 Supplier D (SU D)

Period T0:

Existing Context and Interpretative Schemes: previous positive experience of collaboration with own suppliers; opportunity to improve operations and relations with SI; recognition of SI expertise in product quality; initiative important to the firm as an opportunity to benefit from the SI expertise

Period T1:

Team Sensemaking: team discussions
Developing Interpretative Schemes: collaboration a valuable opportunity to make improvements to operations and relations with the SI firm based upon evidence from previous collaborative initiatives with other firms
Emerging Change Outcomes: proactive role in workshops e.g. taking initiative to share ideas and views with SI and invite discussion; suggesting corrective actions for discussion

Period T2:

Sensemaking Triggers: SI approach to interacting in workshops e.g. instructive rather collaborative approach to decision making and to assigning roles and responsibilities
Team Sensemaking: dyad workshops; team discussions; report sharing and scheduling activities held between the SI and SU teams
Developing Interpretative Schemes: SI perceived as unwilling to work jointly with SU; project still valuable but benefits to be derived from collaboration possibility limited to operational improvements with this team
Emerging Change Outcomes: engaged with the workshops plans; maximised collaborative opportunities with other members of SI firm e.g. organised additional meetings with SI experts

Period T3:

Sensemaking Triggers: lack of initiative success; SI experts unable to continue engaging with project; experience of change in SI approach in workshops e.g. SI sharing information and seeking SU inputs into decision making; more equal power balance between firms; feedback from SU experts; management support;
Team Sensemaking: dyad workshops, team discussions; discussions with SU experts
Developing Interpretative Schemes: renewed confidence in possibility to develop collaborative relationship with the SI; maintaining good relationships with key members of the SI firm seen as central to influencing collaboration success with SI team; collaboration slow and more political when acting as supplier rather than buyer (based upon previous experiences of collaborating as a buyer with other firms)
Emerging Change Outcomes: focused on solving both initiatives by renewing its efforts to work jointly with the SI team but also maintaining communications with internal SU experts

Period T4:

Sensemaking Triggers: initiative successes; SI and SI management support; change in SI team approach
Team Sensemaking: team and dyad meetings; initiative progress reports and presentation on findings

Developing Interpretative Schemes: collaboration challenging but beneficial; anticipates future strategic benefits with this firm; collaboration needs to be managed and relationship links maintained for future success
Emerging Change Outcomes: began discussions on future initiatives with this team and explored ways to apply the knowledge from this improvement to other suppliers; sought to maintain links with SI experts communicating around plans for future meetings

The above sections presented data from the team interviews undertaken solely for the purpose of this study. These data are sorted according to the conceptual framework underpinning this study and turning points identified by the researcher. In a further effort to marshal the vast amounts of data, change stories were written for each team. These change stories are presented in the following section.

5.5 Change Stories

The changes stories presented in this section are structured around the improvement initiatives undertaken within each dyad and draw upon team interviews, the researcher's journaling role through direct observation, and also CO-IMPROVE documentation. For the purposes of this study it is the sensemaking dimension of these change stories that is of interest. The sensemaking dimension to these stories draws upon the team interviews and the researcher journaling through direct observation and relates to the following:

- Team thinking with respect to understanding and acceptance of the vision, transition process and likely outcomes of collaboration;
- Team actions, activities, and behaviours that teams link to interpretations of collaboration;
- Changes in interpretations;
- Events, activities, and circumstances which teams identifying as triggering their need to revise their previous interpretations and actions;
- Social interaction processes that a team engages in as it attempts to make sense of these events, activities, and circumstances; and
- Influences that a team identifies upon its revised thinking and actions

CO-IMPROVE data used within these change stories provides descriptive information with respect to initiative details and also team and dyad-level actions and activities within these initiatives. These change stories are structured around each initiative, for each team, within each dyad.

5.5.1 The Change Story for Dyad A

SI A: First Initiative – Lead-Time Reduction for Equipment Delivery

At the launch of the first initiative the SI A team acknowledged that there was a need to address current equipment delays with the SU team and saw the value in this specific initiative goal. The SI assumed the initiative to be the responsibility of the SU team however, with current delivery delays due to internal faults within the SU team's order delivery system. In addition, the SI felt that the SU needed to take more responsibility for monitoring and managing delays and reporting these delays to the SI. This operational improvement was therefore considered by the SI as directly beneficial to its current operations with the SU. The SI thought that it already had a good relationship with the SU team however, and did not see the need to change it. There was also a lack of understanding of the concept of collaboration and the SI did not understand how achieving this improvement initiative 'collaboratively' differed from its existing way of working with the SU team.

The intention of the SI was to work to achieve the improvement initiative but to minimise its direct responsibility for taking corrective action. Although the SI had described its relationship with the SU initially as based upon frequent and informal communication, the SI team decided to adopt a formal and directive approach to interacting with the SU team. The SI team became controlling rather than collaborative in working with the SU team and did not engage the SU in negotiation or decision-making relating to initiative tasks. Instead the SI team identified the plan and assigned responsibility to the SU for undertaking initiative tasks. The SU team generated initial process data which it sent to the SI. The SI responded by selecting additional tasks and assigning these tasks to the SU without discussion at dyad-level. The SI continued to assume that the SU team would be responsible for undertaking corrective action.

Although progress was quite slow the SU team's internal investigation of possible causes of equipment delay revealed that many of the delays were due to the lack of a clear reporting structure and thus internal delays within the SI firm, and not due to inefficiencies within the SU firm. These findings led the SI team to realise its initial assumptions were incorrect and that the project would actually require direct effort and input from the team. The SI team responded with an internal investigation which confirmed the initiative findings. These findings disconfirmed the SI team's initial assumptions and were quite surprising for the team. These findings were also reported to the SI leader. The SI team responded by taking immediate internal corrective action, successfully achieving operational goals.

Following this first initiative and its findings the SI team realised the need to change its approach to working with the SU team. The SI leader reminded the SI team of the potential for this SU to be important for the future of the strategic programme. Although the operational goals of the first initiative had been achieved, the SI leader felt that performance at dyad-level had not been efficient and progress had been slow. It was expected by management that the SI would continue to investigate current delivery delays. Although the SI team agreed to continue with improvement efforts and to work more closely with the SU team it acknowledged that this agreement was driven by the need to meet management expectations and also concern that its performance reputation was affected following the findings report and presentation at a recent workshop. The SI met with the SU team to discuss these findings and to decide the next initiative. Both teams agreed to continue to focus on delivery delays and the SI encouraged the SU team to become more proactive and take more control over the delivery process in the future. Both teams agreed to explore shared processes around this second initiative.

SU A: First Initiative – Lead-Time Reduction for Equipment Delivery

At the launch of the first initiative SU A identified the need for the specific improvement initiative with a need for the SI to ensure greater transparency and availability of process owners to assist the SU team in dealing with delays. The SU team and owner manager were concerned however with the potential scope of the changes arising from initiative investigations and the demands that the project would make upon the team. The SU felt that any changes needed to occur within the SI team but did not think that this 'collaboration approach' would facilitate these changes. Although it had a good working

relationship with the SI, it was considered that this relationship was not equal and the changes needed within the SI team would not occur. Instead the SU feared that the SI team would use collaboration to create more work for, and impose changes upon the SU, based upon previous experience of working with the SI firm. These views were also supported by the owner-manager of the supply firm. The SU team saw collaboration as confusing and potentially threatening to the current relationship. Specifically the SU felt that the project required it to maintain the current working relationship but, in parallel, to manage the project workload and ensure it did not place too many demands on the team. It complied with the initial activities proposed by the SI team, driven by the goal to limit these requirements where possible using excuses of work demands and deadlines as competing pressures on available time and resources. These intentions and actions were also driven by the need to meet management expectations to maintain the current SI relationship of importance to the firm.

During the first initiative the SU felt that the SI team was pressuring it to take responsibility for performing initiative activities. These concerns were raised by the supply firm owner-manager during a meeting with the SI team and SI manager. This discussion on concerns developed into a discussion relating to the owner-manager's need for a guarantee of future orders from the SI in return for committing time and resources to the project. The SI leader perceived this as a lack of commitment from the owner-manager and as a barrier to the project. The owner-manager however felt it was unreasonable to be expected to comply readily with SI team demands and meet project expectations without a contractual basis to the arrangement and a guarantee of future orders. Although this management issue was not resolved, management from both sides felt that this had been an opportunity to discuss these concerns. The teams continued with the improvement initiative and the owner-manager remained involved. The SU team continued to comply with project plans when requested to do so by the SI team but was also aware of SU management concerns.

Despite his reservations regarding the future of the project the owner-manager contributed necessary expertise and decision making insights during internal project investigations within the SU firm. His knowledge of key systems, processes, and people in the SU firm helped to accelerate the pace of the initiative investigation. When the initiative investigation revealed the need for changes within the SI firm the SU team acknowledged

the SI team's acceptance of responsibility for performing initiative activities. The SU team responded by working more directly and proactively with the SI team to discuss corrective action and also sought contributions from internal experts. Findings had revealed that a key cause of delay was due to the SU team's inability to identify a clear process owner within the SI firm in order to report delays, highlight impending problems, or obtain clarification of specifications or drawing details. The corrective action plan addressed these problems and the SU team felt that the initiative had actually directly benefited rather than burdened its working practices. The team had succeeded in achieving the first initiative goal. Based on the evidence disconfirming its initial assumptions the SU team began to see collaboration as a potential vehicle for changes which may enable future improvements in operations with the SU firm.

Although the SU owner-manager remained unsure of the project's value the SU felt it had the support of peers who also recognised the potential value of the project as a vehicle for improvement. At the end of the first initiative the SU team sought to continue working on a second improvement initiative with the SI team.

SI A: Second Initiative – Lead-Time Reduction for Parts Delivery

Although it was the SI team's decision to continue focusing collaborative efforts on redressing delivery delays, the SI team planned the initiative jointly with the SU team, and took responsibility for some of the corrective action steps agreed with the SU. As the teams agreed to adopt the planning model used in the first initiative they made swift progress in planning the corrective action. During this stage the SI team identified changes in its working relationship with the SU team. The SI considered it easier to work with the SU team with the SU becoming more proactive, and 'making things happen' rather than accepting direction. The SI valued the SU team's inputs as it learned about shared systems and processes through sharing ideas and information at dyad-level. As the SI began to experience these improvements it began to realise the value of the project, seeing it as an important and worthwhile vehicle for improving operations and relations with the SU team. The SI listened to the SU views and ideas, agreeing activities and responsibilities jointly with the SU. This was driven by the SI team's realisation of the reciprocal benefits of sharing activities with the SU team to achieve initiative goals but also to create a platform for further improvements.

As the SI leader realised that the second initiative was progressing, with the dyad relationship improving between the teams, he began to pressure the SI team to ensure measurable improvement results were achieved as he needed to make an internal report to top management on the success of the project. Although the SI leader acknowledged the improvement in the working relationship between the SI and SU teams he indicated that this was only evident to those directly involved and not really communicable as a measurable improvement to top management. Although the team was making improvements it began to feel increased internal pressure from the SI leader to ensure the initiative was a success. The SI began to rely upon the SU but also adopted a structured and formal approach to working with the SU, detailing each agreed task, noting the assigned task-owner (s), and developing a schedule of activities around which each team would post performance and progress updates. This approach remained focused upon working jointly with the SU however, sharing responsibility, ideas, and decisions rather than returning to the initial directive approach. The SI identified that improvements were more effective by working jointly with the SU team.

As the project moved towards the close of the second initiative the SI saw collaboration as an approach it should actively sustain with the SU. Although it required prioritisation of time and resources, working collaboratively with the SU team and improving the SU relationship had enabled changes the SI had not initially realised were possible. It also understood more about the nature and potential of collaboration for generating change and improvement. The team sought to continue with initiatives and to further improve their working relationship with the SU. Independently of the SI leader, the team selected a further improvement initiative with the SU and discussed how to roll-out process improvements it had achieved with the SU to other departments within the SI firm. This was driven by the team's concerns with realising future improvements for its ways of working with the SU firm.

SU A: Second Initiative – Lead-Time Reduction for Parts Delivery

The SU team agreed the nature and schedule of activities jointly with the SI team. In turn, as the initiative progressed, the team recognised that it had a greater say in this second planning stage and that roles and responsibilities were agreed jointly rather than dictated by the SI team. The SU team began to experience a shift in the power-balance and felt that the SI team engaged it equally rather than in a directive manner. It felt that the owner-

manager's concerns may potentially limit future collaborative improvements but the visibility of the changes from the first initiative were acknowledged as valuable by other members of the SU firm. The SU team sought increased ownership and responsibility for the initiative and met the demands of the project in a timely manner. The team continued to experience changes in the interaction relationship with the SI team. In addition, the SI firm's implementation of changes to internal systems and processes, based upon the findings from the first initiative, generated positive feedback and support for the project amongst SU peers and experts.

As the SU team began to experience these changes it realised collaboration could enable improvements in the relationship with the SI which the team had not previously considered possible. The team continued to focus on achieving initiative goals and also to further improve its relationship with the SI team, actively seeking increased ownership and responsibility for initiative decisions and activities. The emerging structure, and more formalised approach to interacting with the SI enabled identification of process owners within the SI firm and provided traceability of knowledge and decision making between the firms. The structured approach generated by the SI team's efforts forced greater equality as both teams were required to account for 'what they did' and 'how they did things'. The dedicated forum for discussion and interaction between the teams was considered by the SU as contributing to more shared and equal interactions between the teams, giving the SU an opportunity to share its ideas and views and to influence the change process. The SU also felt that internal support and contributions from peers and experts improved the value of its own contributions in achieving the goals of the second initiative. This improvement enabled interactions to revolve around systems and processes, with authority driven by knowledge about systems in contrast to SI team's perceived position of dominance at the initial stage.

Towards the end of the second initiative the SU team sought to continue with the project. This decision was driven by concerns with pursuing further improvements considered directly beneficial to its working relationship with the SI firm. In addition, the SU team recognised that collaboration could benefit the firm and strengthen the future position of the firm with this SI whilst also generating improvements with its own suppliers. The SU participated in a planning meeting with the SI in addition to gathering internal support from peers to convince management of the benefits of continuing with the project. The SI

leader also sought the owner-manager's commitment to working upon the future initiatives. The owner-manager recognised the benefits of the project to date but realised it would require significant future investment by the SU firm. In addition the owner-manager still sought to use the project as a bargaining tool to ensure a guarantee of future orders from the SI. In contrast, the SI leader was concerned with securing quality and reliability from the SU and helping the SU to achieve these improvements. The owner-manager eventually agreed to continue with the project under pressure to do so by the SU team and internal experts.

5.5.2 The Change Story for Dyad B

SI B: First Initiative – Reduction of Tool Delivery Delays

At the launch of the first initiative the SI team recognised the need for the operational improvement but, as with SI A, considered that initiative problems were due to the SU team. The SI also considered that the project would give it an opportunity to implement changes within the SU through the use of a frequent and formal approach to SU interaction, thus encouraging the SU to be more ambitious and take responsibility for improvements. The SI team sought to supervise changes in the SU team, rather than to work collaboratively to investigate and solve initiative problems jointly. The SI team was therefore concerned with achieving the goals of the initiative but in a non-collaborative way, instead directing the initiative to ensure the SU team made the necessary changes.

As this initiative coincided with a busy work period for the SI it did not have a lot of time available to monitor the SU team. The SI team performed the necessary process mapping but relied upon the SU team to perform the required internal checks. As the team felt that the SU was responsible for delays is did not gather data internally on the specific part to be monitored during this initiative. During this time, the SI did not have much interaction with the SU but felt that the initiative would progress as the SU had agreed to perform the necessary internal checks. By the end of the time period dedicated to mapping the internal process and monitoring specific tool deliveries, the SI realised that the SU team had ensured that no delays occurred on monitored parts. This approach was apparent to the SI as the delivery times relating to those parts were not typical when compared with other periods monitored in relation to this part.

The SI leader looked to the SI team to work more closely with the initiative and interact more directly with the SU team to monitor progress during the next period. Selecting other parts to monitor, the SI team requested and received data regularly on the delivery times for those parts from the SU team. Based on these data the SI team undertook an internal investigation of delays. The findings of this investigation showed that the SI firm was actually responsible for much of the delays.

As the SI team realised its initial lack of progress was due to SU avoidance tactics, and its own assumptions regarding responsibility for tool delivery delays, it realised that it had made little improvement during the first initiative. The SI realised that to make progress it needed to engage more fully with the project and take more responsibility for its success. The SI team was also concerned with its performance reputation given these results and planned to redress this situation by monitoring activities more closely with the SU in addition to organising an internal corrective action plan. Accordingly, an internal KAIZEN (improvement) initiative was organised to deal specifically with the problems identified.

The SI team noted it had internal support for this initiative. In addition, the team met with the SU to inform it of the outcome and try to indicate its intentions to correct the problems identified. The SI team also outlined its intention to continue to monitor parts and agreed a schedule of activities with the SU team, commencing efforts to enforce this process with the SU. At the end of the first initiative, the team sought to continue formal improvement initiative efforts and recognised that it needed to work more closely with the SU team to ensure its participation and to facilitate further operational improvements. This decision was driven by concern with the team's performance reputation due to lack of improvement in the relationship with the SU team and also with internal recognition for the initiative outcome by management and peers.

SU B: First Initiative – Reduction of Tool Delivery Delays

At the launch of the first initiative the SU team identified the need for the improvement initiative but had done so in light of the fact that there had been ongoing delays in deliveries between the firms and it could not deny the need to redress these delays. The owner-manager of the SU firm considered that the SI was responsible for the delays but the SU team did not agree. Instead, the SU team recognised that some orders were delayed due to the prioritisation of other orders, and also due to the decision to delay adjustments to

machinery used in tool production, until an order quota for that machinery level was reached. Although the owner-manager acknowledged that these procedures contributed to delivery delays he was concerned that the project would expose these delays and force changes on SU operating processes and procedures eliminating built-in 'slack' in delivery times, which the SU sometimes relied upon.

The SU team was also concerned that the project would be biased in its focus, detecting problems and poor performance within the SU firm, and giving the SI the means to impose changes upon the firm. Additional concerns related to the scope of the suggested change initiative and the level of resources that may be required. The team felt vulnerable sharing information with the SI firm and increasing shared visibility of internal SU systems and processes.

Despite these concerns the owner-manager felt that the team needed to be compliant in workshop meetings, believing that the supplier needed to appear to meet SI demands as fully as possible even if attempting, subsequently, to minimise or avoid proposed changes. The SU team agreed to perform the tasks identified at the planning workshop but then delayed undertaking project responsibilities as requested by the owner-manager. The owner-manager and the team did not however inform the SI team of their delayed performance of investigative tasks. The owner manager subsequently defended this delay stating that the team had been busy working on another order for the SI firm during this period and did not have sufficient time to dedicate to the initiative. The SU knew that the SI team was also busy during this period and felt it would not be monitoring the progress of the initiative.

The team acknowledged the owner-manager's concerns, stating that it felt threatened by the potential demands of the project, for example increased visibility would reduce the slack in the system and the firm's flexibility to prioritise certain orders. It also felt pressure to perform the agreed tasks although it realised it could not continue to delay progress with the SI team. Eventually the SU team and owner-manager decided to monitor parts which it would ensure were not delayed in order to minimise further investigation and undermine the need for the project.

The SU team ensured that delays on monitored parts were avoided with corrective action thus initially avoided within the SU firm. The decision was taken by the SI team to

precede with monitoring orders however, with the result that it was not possible for the SU team to continue with the current strategy to prevent further delays. The SI team began to work more directly with the SU team, requesting and ensuring the data sought was received. The results of the internal SI team investigation proved a valuable turning point for the SU team. The findings indicated that the SI was responsible for many of the causes of delivery delays. Based upon this outcome, the nature and scope of changes required to correct this problem were outlined by the SI team.

The SI team presented its intentions to initiate an internal KAIZEN initiative to the SU team and also its intention to continue working with the SU to achieve further initiative goals. This presentation gave the SU team an increased feeling of security regarding the nature and purpose of the project and its goals. In addition, these findings disconfirmed many of the SU team's initial concerns and the team felt unable to continue working against the project's progress. The SU team felt it needed to change its approach to engaging with the SI given the outcomes of this first initiative and also the success reported by teams from other firms from engaging in the project. The team acknowledged however that the current situation was difficult given the pressure from the SI team and SI leader to ensure progress, in contrast to the ongoing pressure from the owner-manager to minimise involvement with the project.

At the end of the first initiative the team acknowledged that the owner-manager was still quite opposed to the change programme based upon his ongoing reservations with regard to sharing information about internal systems and processes. The team felt that the owner-manager would hold back progress on future improvements. Without owner-manager support it did not feel it could meet the demands of the project and the expectations of the SI team with regard to its participation in the project. Accordingly, the team sought to discuss these concerns with the owner-manager sharing its views on the potential for the project to generate improvements and the need to engage more fully with the next initiative. Despite this situation the team was required by the owner-manager to continue to participate in a limited manner. The team acknowledged this pressure of trying to meet multiple and conflicting demands of the owner-manager and of the SI team and SI leader.

SI B: Second Initiative –Management of Personnel Qualifications

At the beginning of the second initiative the SI team began to change its dyad interaction strategy, working more closely with the SU team to monitor its participation and ensure

initiative success. The team also began to plan and enact internal improvement activities relating to the KAIZEN initiative and these internal improvements received widespread support and a lot of internal recognition from peers and management as a valuable improvement initiative that could address multiple delivery delays.

Addressing the goals of the second initiative the SI team worked with their Information Systems (IS) Department to create a database monitoring system, and both teams worked together to upload the relevant data. Together the teams began to identify ways in which the database could be used to improve shared processes. This joint activity created an opportunity for the teams to work together directly, sharing information and learning from each other about internal and also shared systems. In this way the SI also realised the value of the database table for future initiatives with this and other supplier firms.

As the team began to work more closely with the SU it began to develop a more structured approach to interactions, including formalising roles and responsibilities, documenting plans, and agreeing performance deadlines with the SU. Working more closely with the SU, and in a more structured way, helped to bring the SU team into the initiative, with the SU beginning to contribute and perform as helped to progress the initiative. Over time, the SI team realised the value of working with the SU and its need to rely on the SU team to better understand and achieve improvements. The SI realised that a collaborative approach was key to using the database table developed as part of this initiative and also key to realising further improvements. As the dyad continued to work well the SI also began to understand the internal complications relating to the SU owner-manager as teams began to communicate and relate more openly. Realising that future improvement opportunities with the SU firm may be limited, the SI continued to upload data and explore ways to extend the use and applicability of the database table to other functions. Towards the end of the second initiative the SI team presented these findings. The SI leader commended the efforts of the dyad and indicated top management support for these project achievements.

The team felt that these successes were recognised internally by management, as were the opportunities the SI identified for further improvements. The SI considered the project to be an important platform for managerial recognition of their efforts and a means to achieve improvements with other suppliers. Towards the end of the second initiative the SI team sought to continue working with the SU team where possible and began to identify further

uses of the table. The SI also began to explore opportunities to roll-out similar initiatives with other suppliers. These actions were driven by the team's ambition to realise additional operational and relational improvements and also by top management support. Despite SI intentions however, no further collaborative initiatives were planned between these dyads teams or between these firms.

SU B: Second Initiative –Management of Personnel Qualifications

Initially the team responded to efforts by the SI team and SI leader to engage more fully with the second initiative but remained cautious of proposing its own ideas or debating opposing views on proposed activities and corrective actions with the SI team. This second initiative required direct interaction between the teams as the initiative required sharing information and mapping processes jointly. The SU team found that this second initiative gave it the opportunity to work more closely with the SI team, and in a structured manner, allowing it to learn more about shared systems and processes. Changes from the first initiative also generated increased recognition and support for the project within the SU firm as internal SU experts were involved in discussions regarding changes from the first initiative.

As the SU team continued to gather and upload data it experienced the benefits of working more closely with the SI and realised the potential value of the project and also the intentions of the SI team. The investment of resources by the SI to create the database was also seen as evidence of the SI firm's intentions to facilitate mutually beneficial improvements between the firms. As the project continued the SU realised that more and more opportunities for further improvement were possible and began to assume more responsibility for the project. For example, although the SU continued to lack support from the owner-manager, it sought internal support for the project from other managers and peers presenting information on project progress and findings, to date. The owner-manager supported the idea to leverage the learning from the project for improvement initiatives with other firms but felt he could not commit further resources to the project without some form of guarantee of future orders from the SI.

The SI leader discussed this situation with the owner-manager explaining that his lack of ambition to improve and learn within this current dyad relationship put the future of the SU firm's role in new programmes in doubt. The SI leader felt that the owner-manager was

too traditional and his approach was holding back the SU firm from realising future opportunities. Despite this situation, the SU team continued to participate actively in the initiative, contributing to initiative discussions and activities and contributing its own ideas in response to continued SI support. It also began to share its concerns with the SU regarding conflicting pressures from the owner-manager. The SU team felt that it could continue to improve its ways of working based upon its experiences to date and could also adapt the table for future initiatives without much additional effort. Towards the end of the second initiative the SU considered collaboration to have considerable potential to generate improvements for the team and the firm, but also considered that this potential may be limited due to internal politics. Despite SU intentions however, no further collaborative initiatives were planned between these teams or firms.

5.5.3 The Change Story for Dyad C

SI C: First Initiative – Cost Reduction

At the launch of the first initiative the SI team identified the area for improvement with the SU team but was unsure as the overall purpose of collaboration and of the SI leader's expectations from the project. Although the SI had attended the initial introduction workshops it felt that there was little need for improvement in its relationship with the SU firm as it already had an effective working relationship. The SI was concerned that this proposed alternative approach to interacting with the SU would just increase its workload and responsibilities. As a result, the SI was slow to engage with the initiative relying mainly on taking direction from the SI leader and complying with tasks that he identified driven by the need 'to be seen to meet' management expectations. Outside the workshop however, teams made little progress citing a heavy workload but also a lack of purpose to interacting with the SU team, in particular due to a market downturn facing the SU firm.

Shortly after the commencement of the initiative the SU team withdrew from the project. Although the dyad teams, largely driven by the SI leader, had identified steps to take to advance the initiative, work stalled between the teams and the SU missed two workshop meetings. The SI team was uncertain that the project would continue and made little effort to advance the project without input from the SU. The SU returned to the initiative a few weeks later following an intervention by the SI leader who had threatened to cancel future orders with the SU firm. When the SU team returned to the meetings it made a renewed

effort to progress the initiative and organised 'catch-up' meetings. The SI team realised that the SU was under pressure from the SI leader to perform and realised that the situation was difficult for both of the teams. The SI team engaged with the SU team but both teams made progress on the initiative independently.

The SI ensured that the project continued to progress and performed activities as requested. Based on the outcome of the initiative investigation it was decided that a joint investment would be made in the purchase of equipment. This investment decision was negotiated and agreed between SI and SU management with little involvement by the SI team. The SI leader considered the first initiative a success evaluating the SU firm's investment decision as a key indication of the SU firm's commitment to the future of the relationship between the firms. The SI leader emphasised the strategic significance of the project for the firm but the SI team remained uncertain as to the concept of collaboration and management expectations with respect to changes in its working relationship with the SU team. The team did not feel it had much involvement in the first initiative or in working with the SU team, despite the initial emphasis on relationship improvement in the project. At the end of the first initiative the team did not wish to be involved in the second initiative and communicated this to the SI leader. The SU leader requested the team to continue to work on the next initiative and recognised that he needed to adopt a more 'hands-off' approach towards engaging with these teams in the project.

SU C: First Initiative – Cost Reduction

At the launch of the first initiative the SU team was concerned about the ongoing market downturn facing its firm. The SU team had agreed to the initiative but complied with the improvement area selected by the SI team as it was not concerned with the nature of the initiative at that time. The SU attended the initial workshop but outside of the workshop avoided the tasks and avoided responsibility for planning and communicating around the initiative. The SU did not hide its concerns from the SI leader however who understood and sympathised with the situation facing the SU firm. As the SU firm became involved in planning and implementing internal labour cutbacks and reducing the work schedules of some departments, the SU team missed two meetings during which time it did not interact in any way with the project or the SI leader. Following this withdrawal from the project the SI leader gave the SU firm some time to re-evaluate its position, but eventually he

requested the SU team's return to the project and put pressure on SU management, ultimately threatening to cancel future orders with the firm if the team did not continue with the project. Accordingly, the SU team returned to the project and made an effort to engage with activities to meet management expectations and to redress any potential damage to the relationship between the firms.

The SU team was compliant in its approach, performing the required tasks set out by the SI leader. The SU team had little direct involvement with the investment decision made by management given the significance to the SU firm of making a financial investment in light of its' recent market difficulties. SU management negotiated the investment and agreed the terms with SI management. The SU valued the SI firm's willingness to invest in equipment for use by the SU firm, seeing it as an important indication of the SI firm's willingness to continue working and improving operating relationships with the SU firm in the future. The SU team continued to engage with the project in accordance with management instructions but recognised that management was becoming increasingly interested in the project.

Management did not get involved with the workshops but continued to encourage the team's participation, putting further pressure on the team to engage with the project. The SI leader encouraged the SU team to become more proactive in driving activities during the second initiative but the team did not really wish to continue with the project, continuing to do so, only to meet management expectations. The SU agreed to continue working with the SI team as it already had a good working relationship, but remained unsure as to the project expectations.

SI C: Second Initiative – Equipment Monitoring

At the beginning of the second initiative the SI leader realised that the SI team had not had much of an opportunity to work with the SU team or to engage with the first initiative. The SI leader explained to the SI team that the project had created an opportunity for the SU firm to prove its commitment to a future strategic programme and that management from both firms were pleased with the outcome of the first initiative. The SI leader encouraged the SI team to select an initiative which would benefit the team directly in its

workings with the SU team, and also encouraged the team to take ownership of, and responsibility for, this second initiative. The initiative selected was considered beneficial to both teams' direct operations but also not too challenging. The SI team took responsibility for identifying and agreeing actions with the SU, driven by an ongoing sense of the need to meet management expectations and a realisation that the project had indeed proven valuable for the firm.

During this stage, the SI team became much more aware of the value of the project for the firm. They were encouraged by the SI leader's support for their initiative and recognition of the potential of the project to generate further benefits for the firm. Internally there was recognition of the project's success to date but also pressure on the team to produce measurable improvement results during this second phase. Despite this situation the team continued to question the nature of improvements expected in the relationship with the SU team. In particular, as the SI began to engage more fully in the initiative it began to feel that the initiative may be of benefit to the firm but was not very beneficial to its own operations with the SU team. The team continued to engage in the initiative however, to ensure a successful outcome was achieved. This decision was based on its recognition of the need to achieve measurable performance improvements to meet management expectations. The team was unsure about continuing with the project however due to concerns with the demands of the project in the future. Towards the end of the second initiative the team felt that the project had not been sufficiently beneficial to justify its efforts to remain involved. The SI saw collaboration as potentially beneficial for the firm but not necessarily for improving its operations or relations with the SU team. The team completed its activities but requested not to remain involved in the project for further collaborative initiatives. This decision was driven by the team's lack of value for the improvements it had experienced in its relationship with the SU whereby it felt that it had actually interacted less effectively with the team over the two initiatives due to the pressures of the project.

SU C: Second Initiative – Equipment Monitoring

At the beginning of the second initiative the SU team was encouraged by the SI leader to also take ownership and responsibility for selecting the initiative jointly with the SI team. The SU team selected an initiative that it also considered to be directly beneficial to its joint operations with the SI but again not too challenging. The team still felt management

pressure to participate however. Although the SI leader seemed more 'hands-off in this second planning stage, SU management remained focused on the team's progress, requesting regular feedback. The SU team continued to interact with the SI team and was encouraged by the SI leader and SU management.

As the project progressed, the SU began to experience changes in its operating relationship with the SI leader and its own management team. Despite the lack of any apparent changes to its relationship with the SI team, the project created a platform for discussion with the SI leader and with SU management. The SU was brought into discussions at a strategic level with management and realised collaboration as beneficial for the future of the firm, towards securing future operations and generating new opportunities. Internally the team had management support but also the support of peers as the project was seen as increasingly valuable for the future of the firm. Where necessary, the team requested input from internal experts and also the SI leader and these requests were met. Encouraged by management and peers, and in light of the recent market downturn, the SU felt a sense of responsibility for initiative success based upon the potential it offered for firm-wide improvement.

The SU team prioritised the improvement initiative and completed initiative activities successfully. At the end of the second initiative the SU realised that the initiative had been of some benefit to the team's operational responsibilities but of little benefit to its relationship with the SI. The SU however considered collaboration as beneficial for the firm and an approach that the team should champion as a means of strengthening its strategic relationship with the SI, and of securing future opportunities in the marketplace. The SU agreed to continue with future initiatives and to identify areas to which it could 'roll-out' the database table to other functions.

5.5.4 The Change Story for Dyad D

SI D: First Initiative – Eliminate Cosmetic Defects

At the launch of the first initiative the SI team considered collaboration to be an opportunity to address recent quality problems occurring within the SU. The SI produced similar parts and did not encounter these problems, which related to the finishing quality of

parts. Given this situation the SI considered that it had superior knowledge of the improvement initiative and therefore took the role of overseeing the SU team's performance. The SI did not have much opportunity to interact directly with the SU team due to the geographic distance between the firms. This project was therefore considered a valuable opportunity to learn more about the SU team's processes in order to impact shared operations between the teams and to ultimately eliminate duplicate and time-consuming quality control procedures.

Although the SI leader had encouraged the team to adopt a shared and equal approach to interacting with the SU team the SI considered that the SU did not understand the nature of the problem very well. The SI therefore wanted to ensure this opportunity for improvement was managed effectively. The SI dominated initial planning and problem identification activities and adopted a structured and formal approach to assign responsibilities to the SU, rather than engaging in joint negotiation and investigation of possible causes. This approach was driven by the team's ambition to achieve initiative goals and to learn more about shared operations fur future team benefits. This initiative was also important in helping the SI team meet the improvement demands of final customers.

The SU performed activities in accordance with the SI team's action plans yet these corrective actions failed to deliver the expected results. The SU team did not feel that the SI had identified the problem and solutions correctly. The SI acknowledged its initial assumptions and diagnoses were incorrect and realised that the project required more 'direct input' from the SI team for performance improvements to be achieved. The SI leader was also concerned with the lack of progress as he had expected to be able to report measurable performance outcomes to top management at the end of this initiative. Instead, failure to achieve initiative goals, the increasing complexity of the initiative problem, and increasing demands on time characterised the progress of the initiative to date. The SI leader began to pressure the SI team to achieve the improvement outcomes leading the SI to continue to focus upon working with internal experts rather than working with the SU team.

The SI focus moved from concern with learning about shared systems and processes with the SU team, towards concern with protecting its performance reputation and meeting management expectations. SI concerns and management pressures continued throughout

this initiative as the team had made only slight progress in achieving the initiative goals at the end of time period available for the first initiative. The SI team sought to continue this initiative in parallel to working on the second initiative. The team did not want to fall behind the progress rate of the other teams in the project therefore choosing an easier 'second initiative' which it expected would take less time to address.

SU D: First Initiative – Eliminate Cosmetic Defects

The SU team considered the first initiative to be a valuable opportunity to achieve much sought-after improvements with the SI team and the SI firm. The SU team had engaged in collaborative improvement initiatives with other suppliers previously and had sought an opportunity to address the ongoing quality problems between the firms. In addition, it sought to improve communications and interactions, including increasing the visibility of process owners within the SI, as these firms rarely met directly. The SU therefore sought to prioritise the initiative and maximise learning opportunities with the SI firm. SU firm management was not directly involved but had given its support to the SU team providing resources for travel and allowing the team some time off from regular duties to engage with the initiative. The SU team engaged proactively with problem-setting activities, seeking to identify tasks and share responsibilities jointly for performing activities with the SI. This approach was driven by the team's ambition to achieve operational and relational improvements with this SI team, in addition to meeting management expectations.

The SU team attempted initially to collaborate with the SI team entering into negotiations and sharing its' views and ideas on the initiative. The SI team continued to dominate the process however, and although the SU team tried to assert its' views, the SI developed and tried to enforce a very rigid schedule of activities. As the initiative continued the SU team realised that the SI did not seek to change its interaction strategy, but rather sought to achieve the initiative goals through directing the efforts of the SU. The team realised that the initiative goals were likely to be limited to operational improvements.

Although this result was in contrast to the relational improvement goals initially sought by the SU, it worked within the SI team's controlling approach. The SU saw the SI firm as an important customer but also realised that it could still benefit from engaging in the initiative and learning about specific process improvements, even if interaction with the SI team was limited. The SU continued to perform the necessary activities requested by the SI but also organised additional meetings with internal SI experts to gather more

information about shared processes and also to build a communication network with SI members. This approach was driven by the team's ongoing ambition to achieve operational and relational improvements with this SI firm, in addition to meeting management expectations.

As the SU team realised this approach had not led to the desired outcomes it increased its efforts to achieve the operational initiative goals, seeking internal support and expertise, and increasing its' understanding of the problem in order to progress the initiative. The SU team was encouraged by its increased understanding of the problems and by the continued failure to achieve outcomes based upon the corrective actions proposed by the SI team. It felt that it was learning about process improvements with SI and SU firm experts. As with the SI team, the SU agreed to continue with this initiative whilst also taking on a second improvement initiative. This decision was driven by a sense of responsibility but also an increasing sense of ability to achieve a successful outcome.

SI D: Second Initiative – Improve the VMRR Process

At the start of the second initiative, the SI team remained concerned about the lack of progress from the first initiative, and felt pressure to ensure this second initiative was more successful. The SI team continued to dominate activities relating to the first initiative, but the SU was less responsive to SI demands asserting its' own views and acting more independently of the SI. In addition, some of quality problems the SI team had considered solved from the first initiative reoccurred at this time. As the SU began to offer solutions to address these recurring problems the SI began to realise that the SU team had made significant progress in generating improvements from the first initiative by working with SI and SU experts. In order to regain control of the initiative, the SI participated in a specially organised workshop with the SU team and experts from the SI and SU firm. This workshop was dedicated to joint investigation and on-site learning and training. The decision to plan this workshop was driven by the SI team's concerns with its performance reputation in addition to meeting management expectations.

In this way, the SI began to recognise the value of the SU team's role in contributing to problem-solving activities, and also to recognise the value of both sides getting together to investigate problems jointly. The SI team also recognised the potential of an improved working relationship with the SU firm through, for example, shared learning opportunities and improvements in shared systems and processes. When a successful outcome for the

first initiative was achieved, responsibility returned to the SI team as experts no longer prioritised or eventually participated in the project. The SI began to work with the SU team performing activities jointly for the remainder of the second initiative; sharing responsibility for tasks with the SU; and ultimately achieving all of the goals from the first and second initiatives. This outcome was considered a significant achievement by the SI team leader and was widely acknowledged within the SI firm.

The SI realised the benefits of collaboration, learning about shared processes and generating opportunities for further improvements. At the end of the second initiative the team agreed to continue pursuing collaborative initiatives with the SU team and began to plan future initiatives in consultation, initially with the SI leader and then with the SU team. This decision was driven by the team's ambition to make further improvements to its relationship with the SU and also to learn more about shared system and processes. The decision was also driven by management support for the team's continued efforts.

SU D: Second Initiative – Improve the VMRR Process

Although the first initiative was ongoing, the SU team engaged in the second initiative with the SI team. Based upon ongoing investigations from the first initiative, and the increased recognition of their expertise by internal experts in the SI firm, the SU team was more assertive in this second problem-setting initiative, although the SI team continued in their attempts to dominate proceedings initially. Problems from the first initiative reoccurred during this stage and internal experts maintained contact with the SU team and SU firm experts directly. SU management was supportive of SU team efforts to address the lack of progress from the first initiative and supported the learning opportunities created by on-site visits and training workshops. The SU team focused upon solving initiative problems with SU and SI firm experts but acknowledged the lack of collaborative success with the SI team to date.

The team continued to address problems relating to the both initiatives, participating in interim-workshop meetings with the SI experts to share data, exchange ideas, and work more closely with the SI firm to realise learning opportunities and increase the visibility of shared systems and processes. When the SI team organised and participated in a training session, the SU team felt it was better positioned to contribute equally to discussions with the SI. In addition, the SU began to experience changes in the interaction approach of the SI team and considered that the SI had become more inclusive by requesting the views, and

listening to the opinions and ideas, of the SU team. The SU also realised that the SI internal experts could not continue to prioritise the project and it needed to resume efforts to improve links with the SI team, which it now considered possible. This decision was driven by the team's ongoing ambition to achieve operational and relational improvements with this SI, in addition to meeting management expectations.

The SU continued its efforts to ensure that all problems from the first initiative were corrected, and this objective was successfully achieved. The SU also completed the necessary tasks for the second initiative, which was proved a success. Towards the end of the second initiative the team sought to continue with further improvement initiatives and this decision was widely supported within the SU firm. The SU did not wish to limit collaboration to working with the same SI team however, identifying alternative functions and participants to engage with in the SI firm. The SU valued the learning opportunity derived from interacting closely with SI experts and felt that maintaining these links would be beneficial. This decision was driven by the team's ongoing ambition to achieve operational and relational improvements with this and other firms, in addition to meeting management expectations.

In summary, the above sections present data, and initial analysis of data, with respect to buyer and supplier sensemaking around the initial stages (first fifteen months) of collaboration.

5.6 The Approach to Data Analysis in this Study

As discussed in Section 4.9, in analysing this data the researcher looked across interpretations, analysing the content of interpretations i.e. 'what' interpretations referred or related to, and identifying categories in order to group segments of information and words. As discussed in Section 2.7, consistent with research examining interpretations in relation to strategic change, the researcher looked at how teams labelled issues. Examples drawn from data include:

- Collaboration as beneficial: advantages and opportunities;
- Collaboration as problematic: disadvantages and costs, 'them versus us';

- Collaboration as differing from initial expectations e.g. proving demanding, valuable or difficult;
- Collaboration requiring a change in how teams currently work towards relying upon and valuing inputs from the dyad partner team;
- Collaboration as capable of delivering important results for the team and / or firm; and
- Collaboration as valuable / unnecessary for the future of the firm

As interpretations evolved, the research looked at triggers which caused each team to revise interpretations with respect to the vision, transition and likely outcomes of collaboration. Examples again drawn from data include:

- Initiative progress and outcomes;
- Relationship with the dyad partner team; and
- Value of overall changes arising from experiences of collaboration

Next, the researcher focused on how each team 'fashioned' this understanding or interpretation of collaboration, looking at the bases for team interpretations i.e. what a team identified as influencing or informing their interpretations. Common influences acting upon team interpretations were sought across teams. Examples drawn from data include:

- Rumours and speculations based upon past events and recent performance of the dyad partner;
- Own beliefs relating to experiences and project evidence;
- Influence relationships including management, peers, and the dyad partner team;
- Early evidence from initiative investigations and / or management and peer feedback;
- Reflections based upon increased understanding of collaboration and the nature and value of experiences emerging from dyad-level interactions; and
- Reflections and discussions with a wider audience (dyad team, management and peers) with respect to accumulated evidence, experience, and extrapolation with regard to future initiatives

Next, an understanding of the types of social interaction processes which teams engaged in as they sought to make sense of collaboration were explored. Examples drawn from data include:

- Team-level meetings where teams shared stories, speculated, and swapping ideas, concerns and fears;
- Dyad-level meetings, sharing views and observing behaviour of dyad partner team;
- Shared experiences;
- Progress reports; and
- Discussing and sharing ideas with management and peers

The researcher next explored emerging actions and activities that each team linked to its interpretations. Examples drawn from data include:

- Dominating / avoiding task assignments and responsibilities;
- Sharing responsibility between the teams for improvement tasks and activities;
- Joint planning;
- More frequent and informal communication;
- More direct communication bring together appropriate people from both dyad parties to advance the improvement initiative;
- Sharing conflicting views in a constructive manner; and
- Seeking ideas and also agreement from both sides

Further to this, these interpretations, actions, and activities were then analysed with respect to emerging evidence of team understanding and acceptance of the vision, transition, and likely outcomes of collaboration, as informed by the literature reviewed in Chapter Two. Examples drawn from data include:

- Changes in communication between teams such as the nature and frequency of communication and also the emergence of informal relationships between teams e.g. teams setting aside purely social time;
- Decision-making differences negotiated, and consensus or compromise reached between teams;
- Reporting problems and dealing with conflict and tensions constructively between

teams;

- Problems solved by teams working together to define, analyse and resolve or improve a situation, and jointly agree a solution;
- Teams clearly understanding roles, rights and responsibilities and how these should be enacted;
- Teams sharing power in a manner that reflected the interests of all participants and reaching agreements via consensus or compromise rather than dominance and compliance;
- Teams (or firms) sharing the benefits and risks of collaboration and jointly creating and sharing resources; and
- The collective capabilities of teams across organisations captured and shared within the initiatives

With a view to addressing the *first* research question in this study i.e. *how* do buyer and supplier parties interpret collaboration, the researcher focused on the evolving nature and bases for team interpretations over time. As discussed, analysis focused upon how a team labelled issues, and the lens through which this understanding was fashioned, with common patterns or themes sought across teams. In addition, with a view to exploring how interpretations evolved over time, the researcher focused on linking evolving interpretations with the sensemaking triggers perceived by each teams as causing it to revise its' initial interpretations, with again common patterns or themes sought across teams.

Next, with a view to addressing the second research question the researcher looked at the actions linked to interpretations by each team. Analysis looked at the nature of these actions and how they linked to interpretations, with a view to exploring the influence of interpretations of sensemaking triggers upon these actions, and again how these evolved over time. These actions were analysed in association with interpretations, to look for evidence of emerging understanding and acceptance of the vision, transition and likely outcomes of collaboration. Patterns in terms of actions, links to interpretations, and of emerging understanding and acceptance of collaboration were sought across teams.

Chapter Six presents the findings from the above analysis approach, carrying out a comparative cross-case analysis of each of the buyer and supplier teams to address the research questions explored in this study.

5.7 Conclusion

This chapter presented the empirical data and initial sorting of data in accordance with the conceptual framework underpinning this study. *Section 5.1* introduced the purpose of this chapter with *Section 5.2* presenting an overview of the aerospace industry in which the firms participating in this study operate, and exploring the significance of collaboration in this industry context. *Section 5.3* presented an overview of each of the participant firms involved in this study and the relationship history of each of the dyads. In addition, it identified the improvement initiatives undertaken by the dyads in this study and the outcome of these initiatives. *Section 5.4* presented data with respect to team sensemaking in relation to the process of collaboration with *Section 5.5* presenting the change stories written for each team. Finally, *Section 5.6* presented emerging findings and initial data analysis.

CHAPTER 6: EVOLVING INTERPRETATIONS OF COLLABORATION AND LINKS TO TEAM ACTIONS

6.1 Introduction

This chapter presents a comparative, cross-case analysis involving each of the buyer and supplier teams, to address the following research questions:

Research Questions:

> Q1. How do buyer and supplier parties interpret collaboration and how do their interpretations of collaboration evolve over time?
>
> Q2. What actions accompany buyer and supplier parties' interpretations of collaboration and how are these actions linked to their interpretations?

This chapter is structured around seven sections. In preparing to address the first research question, *Section 6.2* analyses evolving interpretations of collaboration in the buyer-supplier teams in this study, in addition to the triggers and influences underpinning their sensemaking processes. Based upon this analysis, *Section 6.3* addresses the first research question in this study. In preparing to address the second research question in this study, *Section 6.4* analyses the actions accompanying the evolving interpretations of collaboration, with *Section 6.5* addressing the second research question. *Section 6.6* presents a discussion of these findings with respect to buyer-supplier collaboration, in addition to offering insights for more effective facilitation of understanding and acceptance of collaboration between buyer-supplier teams. *Section 6.7* presents the contributions of these findings for both collaboration and sensemaking literature. Finally, *Section 6.8* concludes this chapter.

6.2 Preparing to Address the First Research Question: Buyer and Supplier Interpretations of Collaboration

This section carries out a comparative cross-case analysis of the evolving interpretations of each of the buyer and supplier teams, with a view to addressing the first research question

in this study. As discussed in Section 5.8, the researcher focused upon the evolving nature of, and bases for, team interpretations over time. Analysis focused on how a team labeled issues, and the lens through which team understanding was fashioned, with common patterns or themes sought across the teams. Team interpretations were then analysed with respect to the emerging vision of collaboration. In addition, with a view to exploring how interpretations evolved over time, the researcher focused upon linking evolving interpretations with the sensemaking triggers perceived by each team as causing it to revise its initial interpretations, with again common patterns or themes sought across the teams. As a result of this analysis, although the duration of each interpretative stage varied across the teams, findings reveal that interpretations of the collaboration process typically evolved across a series of stages common to these buyer and supplier teams. These stages are described as assumption, assessment, deliberation, and acceptance. The following section analyses these interpretative stages and sensemaking triggers within the buyer-supplier teams in this study.

6.2.1 Interpretation Stage: T1

At the beginning of the project each team was introduced to the concept of collaboration by the SI leader and project facilitators. The vision of collaboration and its likely outcomes were presented in terms of an opportunity for each firm and each team to benefit from operational and relational improvements with a view to pursuing a more strategic relationship between the firms. Teams were encouraged to work together jointly, sharing tasks and decisions to address initiatives. In addition, the monthly workshop structure was discussed and agreed with the teams. Teams were made aware of the availability of project facilitators to assist them as necessary in making progress with initiatives. Following this introduction each team was involved in identifying and jointly selecting improvement initiatives of benefit to current operations between the teams.

Despite these initial sensegiving efforts by SI management to influence team interpretations with respect to the vision, transition and likely outcomes of collaboration, team interpretations of collaboration related to problems or opportunities that collaboration could present for the team. Potential problems related to assumptions regarding the 'actual' purpose of the project and the 'actual' intentions of the dyad partner team. For

example, teams speculated about how the project could be used by the SI to impose changes upon the SU; to investigate and gain control over internal SU operations; and to assign fault and responsibility for corrective actions to the supplier. For example, SU A and SU B were concerned with the possible intentions of the SI to impose changes on them. SU C speculated about the SI firm's response to their non-participation in the project. These interpretations were in turn supported by management views. SI C also assumed that collaboration could cause problems for existing operations and relations with the dyad partner team. Potential opportunities also related to project purpose, with teams assuming the project offered an opportunity to address *pre-existing* problems with the dyad partner team, as considered within SI A, SI B, and SI D. SI teams talked about using the project as an opportunity to bring about much needed changes in the SU but also how the SU may be reluctant or too conservative to engage fully in the project, as based upon past experiences of working with the SU.

Sensemaking processes reflect this thinking, with team sensemaking processes revolving around team-level meetings, and with management involved only where management members were also direct members of team (as in SU A and SU B). Assumptions therefore drew upon existing interpretative schemes e.g. recent events and prior experiences of interacting with the dyad partner team, rather than relating to the events at hand and the information and detail circulating with respect to collaboration as intended by SI management and project facilitators. Accordingly, team sensemaking involved stories, rumours and speculations around what collaboration would or could mean for the team in light of past events and experiences of working with the dyad partner. Interpretations of collaboration assumed it to be problematic or opportunistic unrelated to, or beyond the scope of, immediate sensegiving efforts relating to the collaborative project.

Based upon these interpretations, the *vision* of collaboration at this stage can therefore be considered one of collaboration as 'an extension to the existing relationship and reality between the teams', with the ability to create problems or opportunities for teams in relation to existing operations and relations. The exception to this interpretative response by teams was SU D, whereby the team assumed that collaboration would facilitate a range of improvements both operational and relational, thereby facilitating the emergence of a 'new and improved' reality between the teams. SU D team assumptions were however based upon its *previous experience* of successful collaboration with another of it own

suppliers. Although it had not collaborated with this buyer team before, *SU D* believed however that the dyad partner team would work jointly with it to achieve the improvement goals, a view consistent with its previous experience of collaboration success with another firm and based upon the vision communicated by SI management at the launch meeting.

6.2.2 Interpretation Stage: T2

This stage reflects the first shift in interpretations of collaboration in the buyer and supplier teams whereby team interpretations moved from an assumption lens to an assessment lens. As discussed in preceding chapters, sensemaking triggers are conceptualised in this study as events or circumstances which trigger a team to revise its initial interpretations of collaboration. Looking across the teams, key *triggers* of sensemaking at this stage relate to *evidence* from project findings. This evidence derived from initiative investigations, initiative outcomes, and dyad partner team responses to initiatives outcomes. This evidence in turn triggered a revision of teams' previous interpretations of collaboration, based upon 'actual' versus 'assumed' outcomes of collaboration, and assessment of the consequences of these outcomes in terms of problems or opportunities for the team. Influences upon team interpretations at this stage came from management, whereby management helped teams to realise potential consequences of the evidence arising from initiative investigations and the importance of these consequences for future performance improvements, in particular pressuring teams to increase efforts to generate measurable performance outcomes. For example, SI A and SI B teams were forced to re-evaluate their initial assumptions based upon evidence arising from the initiative investigations which made the teams aware of their responsibility for many of the initiative problems and the ongoing lack of initiative progress. Management also arranged a meeting to emphasise the strategic importance of the project and of the need for the teams to improve progress. In SI C, revision of initial assumptions was driven by evidence again put forward by management in an effort to communicate the strategic benefits of the project for the firm. Recognising the strategic significance of collaboration for the firm, and the intention of the SI leader to pursue the initiative, SI C realised the need to revise its initial interaction approach to the project. In SI D initial assumptions were revised based upon evidence again arising from initiative investigations, whereby the team realised the need to change its initial approach to the project underscored by management's emphasis on the need for the team to improve progress to date.

In the SU teams similarly, revision of initial assumptions was based upon assessment of evidence arising from initiative investigations and outcomes, in addition to dyad partner team responses to initiatives outcomes. In SU A and SU B, evidence arising from initiative investigations disconfirmed initial assumptions, with teams realising the project's potential to generate beneficial changes. In contrast to the SI teams however, sensegiving efforts by management in SU A and SU B were an attempt to slow progress. The influence of management in SU C was to disconfirm the team's initial assumptions. Project evidence indicated the significance of the project for improving the SI firm's current performance, and also the potential for continued non-participation in the project by the SU to impact current order levels and supplier status. Similarly, in SU D assessment of initial assumptions occurred based upon evidence from initial investigations and dyad interactions with the SI partner team. Initial assumptions were revised with more conservative assessments made of the likely benefits of collaboration for the team.

This stage therefore represents a shift in team sensemaking towards a more evidentiary basis for interpretations, with assessments of events and influences on assessments related to the project and its consequences, rather than assumptions and speculations based upon previous, unrelated events. Team interpretations revolved around actual, project-related events with teams making sense of what had gone on and why, and of the need to engage with the project, take responsibility for its outcomes, and manage the potential impact of outcomes on team performance. The *vision* of collaboration at this stage can therefore be considered 'collaboration as significant in its own right' with the capacity to impact the team either positively or negatively and either directly or indirectly with respect to current operations. This vision of collaboration and influences upon this vision were operational in focus with 'significance' seen in terms of operational outcomes and consequences. Sensemaking processes reflect this shift in interpretations towards assessment and toward a more evidentiary basis for interpretations, with sensemaking revolving around project findings, project presentations and reports, and around discussions with management.

6.2.3 Interpretation Stage: T3

This stage reflects the second shift in interpretations of collaboration in the buyer and supplier teams, with team interpretations seeming to move from assessment to deliberation.

Key *triggers* of sensemaking at this stage comprised events and circumstances which allowed teams to *experience* real improvements in day-to-day operations and in the relationship with the dyad partner team. These trigger events were opportunities created jointly at dyad-level by the teams and linked to observable actions, which disconfirmed initial team expectations of the intention of, or value of contributions from, working with the dyad partner team, and which provided teams with a clearer understanding of the purpose of the project and what was possible in terms of current and future improvement opportunities. Such events and circumstances typically related, not to measurable performance outcomes but to perceived changes in the 'quality' of interaction with the dyad partner team and the broad-reaching impact of reciprocity between the teams in impacting improvement initiatives.

In light of such trigger events, teams deliberated upon current and also likely future benefits of collaboration, weighed against the dis-benefits, challenges, and complications of collaboration e.g. political pressures and managerial pressures for performance improvement. Team deliberations focused upon evaluating these experiences, comparing past and the present events and circumstances, evaluating the positive and negative impact of collaborative experiences for the achievement of current and future goals; and on reconstructing long-established views of the dyad partner and of deep rooted norms of how the teams could and should work together. Teams shared their surprise around unexpected outcomes and changes in the relationship with the dyad team, with, in some cases, revised views of the dyad team as "a partner", "a valuable contributor", "a good source of knowledge, ideas and answers", and as "someone to rely upon when needed". Teams discussed future improvement possibilities, now personalized and expressed in terms of the dyad-level rather than the individual team-level.

For example, SI A, SI B and SI D deliberated upon improvements in their dyad relationships, and the achievement of operational goals, considered against the accompanying realisation however of collaboration as a complex process requiring serious commitment. SI C similarly based interpretations of collaboration upon its evaluation of both the benefits and the challenges of collaboration, although deliberations led the team to view collaboration overall as 'not worth the trouble'. SU A and SU B interpretations of collaboration similarly shifted towards an experiential basis, with the evaluation of both operational and relational improvements against the backdrop of continuing pressure from

management. In SU C interpretations of collaboration were also based upon experiences of collaboration albeit experiences of firm-level benefits achieved through collaboration with the SI leader and SU management, rather than the SI partner team. Finally, in SU D the basis for interpretation was again experiential with the team evaluating both the benefits and challenges of a collaborative approach, against the reality of protracted, complicated, politically-charged collaborative interactions with the dyad partner team.

This shift sees interpretations of collaboration based upon actual experiences with the dyad partner team, although the source and nature of these experiences are mixed. In Dyads A and B, team experiences of collaboration relied upon consecutive changes within and between the dyad teams. This reciprocity led each team to implement changes and to further experience the benefits or challenges of collaboration for the team and / or the firm. In Dyad C, team deliberations again related to experiences, although neither team had much experience of collaboration at dyad-level. Finally, in Dyad D deliberations were based upon dyad-level experiences but also experiences of the benefits of collaborating with peers and experts within and across the firms.

The deliberation stage therefore represents the slow culmination of multiple experiences, helping teams to question old ways of operating and to realise old ways as ineffective in contrast to experiences of new, collaborative ways of working and engaging with the dyad partner team. This stage is reflective of a 'learning-by-doing' approach to collaboration as teams engaged in new behaviours and activities with the dyad partner team and in the subsequent deliberations with respect to new behaviours and activities as experiences arose. The *vision* of collaboration at this stage can therefore be considered as 'collaboration enabling real, fundamental change in how teams worked together' with, in some cases, this change equaling 'real improvement'. Collaboration therefore came to be viewed as a vehicle which teams could use constructively rather than cautiously or defensively and to achieve improvements in working with the dyad partner team. A key influence on team sensemaking at this stage was therefore the dyad partner team, with team discussions around 'what had been achieved' and 'what could be achieved' helping them to construct this vision of collaboration. Additional influences on sensemaking at this stage came from management and peers. For example, in SI A and SI C, teams identified management as influencing its deliberations with respect to the value but also the pressures of collaboration. Management in both SI B and SI D acted to confirm team

perceptions of collaboration as valuable, and as worthy of their continuing commitment and effort.

In SU A, management influenced team interpretations of collaboration as a challenging undertaking, although peers helped teams to also realise collaboration as a valuable and worthwhile pursuit. In SU B, the SI leader helped the team to realise that its positive view of collaboration was supported by management, and that the team's progress to date was a worthy achievement. In SU C, the SI leader also acted as a source of influence helping the team to realise the value and potential of collaboration, against the backdrop of continued pressure from management to address unresolved initiative performance problems. Positive peer feedback on team achievements and on team progress to date also acted as an influence upon team interpretations. Finally, in SU D management and peers from both the SI and SU firm were perceived by the team as influencing its evaluation of achievements and progress to date, despite complications the team had earlier experienced in working with the dyad partner team.

Sensemaking processes at this stage again reflect this shift towards a more experiential basis for sensemaking and a broadening of influences on sensemaking, with teams discussing their emerging views, explaining the underlying logic, and seeking support for their thinking from management, peers, and the dyad partner team. Sensemaking revolved around dyad-level meetings and discussions, project findings and reports, meetings with management, and also informal peer feedback as teams shared news of events, progress, and successes with management and with peers within their own organisations.

A difference between SI and SU team interpretations at this assessment stage relates to the expected beneficiary of improvements arising from dyad collaboration. In the SI teams, interpretations of collaboration continued to revolve around the impact of collaboration upon the SI team. In the smaller SU teams however the benefits of collaboration were considered, not alone in terms of team-level benefits, but also in terms of firm-level benefits. In SU A and SU B the owner-manager of the firms was directly involved and the teams did not tend to view themselves as distinct from the 'rest of the firm' but rather viewed themselves as operating 'on behalf of' management and peers. In SU C, despite not experiencing the benefits of collaboration for the team, the team valued benefits the benefits of collaboration for the firm. This perceived value was in turn sufficient to justify

the team's increased efforts to collaborate with the SI partner team, in turn reflecting the team's concern with securing future contracts which may help redress the market downturn it was experiencing. In SU D the team interpreted collaboration in terms of the benefits it offered for team-level and also departmental-level operations and relations. This interpretation was due to the team's recognition of the value of collaboration for the department as a whole based upon prior experiences of the shared benefits of successful collaboration within its current department.

6.2.4 Interpretation Stage: T4

This stage reflects the third shift in interpretations of collaboration in these buyer and supplier teams, with team interpretations seeming to move from deliberation to acceptance. This revision was triggered by the final initiative outcomes and feedback on completed initiatives, coupled with the close of project. These events and circumstances created a sense of closure to the teams' initial introduction to collaboration with a shift in team interpretations from ongoing and active deliberation of 'what collaboration is about' and 'what collaboration means for the team and / or firm' towards an acceptance of collaboration, with teams no longer seeing collaboration as a 'new' way of working with the dyad partner team. In contrast, the *vision* of collaboration at this stage was of collaboration as a deliberate and, although newly established, a legitimate way of working to seek improvements and to strengthen relationships with supply chain partners. Although SI C considered that the challenges and negative consequences of collaboration exceeded the positive experiences, it had moved from formulating to accepting this conclusion at this stage.

These interpretations are evident in SI A, SI B, and SI D where the teams accepted collaboration as a beneficial way of working, both currently and in the future. Similarly in the SU teams, SU A, SU C, and SU D accepted collaboration as a beneficial way of working, anticipating future benefits would outweigh future challenges of collaboration. In contrast, SU B accepted collaboration as difficult to sustain due, not to experiences of collaboration as a way of working, but rather a lack of internal managerial support.

Team interpretations at this stage therefore reflect the accumulation of a range of events, experiences, and influences. Management again acts as an influence on sensemaking at this stage with management support, or conversely a lack of support, a key influence on the acceptance by teams of collaboration as a viable and legitimate way of working with supply chain partners in the future.

A summary of these findings is presented in Table 6.1.

Table 6.1: Team Sensemaking at each Time Period T1 – T4

Sensemaking Triggers at:
T1: project purpose and intentions of the dyad team at project launch and introduction
T2: evidence relating to the initiative outcomes / findings and consequences
T3: experiences drawn from dyad-level interactions
T4: end and outcomes of initiative and occasion for reflection at close of project
Sensemaking Influences at:
T1: Past events and recent experiences of interacting with the dyad partner team,
T2: Management pressures
T3: Dyad team, management and peers
T4: Management
Sensemaking Processes at:
T1: team-level stories and speculations
T2: discussions around project findings, project presentations and reports, and with management.
T3: dyad-level meetings and discussions, project findings and reports, meetings with management, peer feedback
T4: dyad-level discussions, project findings and reports, meetings with management
Interpretations at:
T1: collaboration as an extension to the existing relationships and reality between the teams with the ability to create problems or opportunities for the teams in relation to existing operations and relations
T2: collaboration as seemingly significant 'in its own right' with the capacity to impact the team either positively or negatively and either directly or indirectly with respect to current operations
T3: collaboration as enabler of 'real', fundamental, change in how teams worked together

with, in some cases, this change equaling real improvement.
T4: collaboration as purposeful, legitimate option to seek improvements and to strengthen relationships with supply chain partners

In light of these findings the following section addresses the first research question in this study.

6.3 Addressing the First Research Question

The beginning of the chapter restated the first research question addressed in this study, namely:

> Q1. How do buyer and supplier parties interpret collaboration and how do their interpretations of collaboration evolve over time?

Analysis of interpretations with respect to collaboration in the preceding section proposes distinct interpretative stages, which capture the predominant interpretative task common to both buyer and supplier teams in this study. The above analysis also reveals the triggers that cause teams to revise their initial interpretations away from assumptions drawn from the existing interpretative schemes and towards evidence relating to the initiative; towards experiences drawn from dyad-level interactions; and through to final initiative outcomes and the announcement of the formal 'close' of the project as an occasion for reflection on collaboration to date.

Initial interpretations of collaboration comprised assumptions revolving around stories, rumours and speculations, with interpretations of collaboration as either opportunistic or problematic for the team. These interpretations were triggered by the project launch and introduction with teams making sense of what the purpose and dyad team intentions meant for the team, and for their current operations and relations with the dyad partner. These assumptions drew upon recent events and past experiences of interacting with the dyad partner team. The shift to assessment was triggered by evidence disconfirming initial assumptions, with sensemaking drawing upon the events and circumstances of

collaboration and upon influences relating to operational project outcomes and evidence. The shift to deliberation is captured by the emergence of more well-constructed, experiential basis for interpretations of collaboration, with teams deliberating upon their positive and negative experiences of collaboration to date. Accordingly teams drew upon a wider range of social interactions and influences in making sense of collaboration to include shared experiences, discussions, and negotiations with the dyad partner team, with peers, and with management from within and across the firms. The final shift is towards acceptance of the experiences and consequences of collaboration to date which were perceived by the teams as likely indicators of collaboration as a way of working in the future. Team sensemaking revolved around how to apply what they had learned rather than continually seeking to understand what collaboration was about and what it meant for them.

Despite efforts to influence the initial sense that parties made of collaboration the *initial vision* of collaboration was simply an extension of the existing relationship and reality between the teams, with the assumed ability for collaboration to create problems or opportunities for the teams in relation to existing operations and relations. The sense that teams made of project evidence, in addition to influences from management shifted this *vision* to one of collaboration as seemingly significant 'in its own right' with the capacity to impact the team either positively or negatively and either directly or indirectly. This vision related to the impact of collaboration for current operations rather than relations with the dyad partner team however, and was bounded by the specific improvement initiative at hand. Teams assessed collaboration in light of this limited evidence, with management in turn prioritising the success of 'operational' performance outcomes. This *vision* again shifted toward one of collaboration was as an 'enabler' of real, fundamental, change in how teams 'worked together'. Deliberations of collaboration related to the broader scope of experiences which teams drew upon to evaluate the 'bottom line' of collaboration in terms of positive and negative experiences, and to evaluate what 'continuing to collaborate' would mean in terms of benefits and challenges for the team. This stage also involved team reconstructions, in light of recent experiences, of previously constructed views of collaboration and of established views of working with the dyad partner. The final shift was toward a *vision* of collaboration as a purposeful, legitimate way of working to make improvements and to strengthen relationships with supply chain partners. In contrast to previous stages where team sensemaking revolved around understanding 'why the team should collaborate' and 'what collaboration could mean to

the team', this final stage suggests teams as no longer trying to understand what collaboration means but rather to understand how to go about continuing to engage with, and pursue the benefits of, collaboration.

This shift in interpretations can also be seen through the shift in influences on team sensemaking over time. Despite the initial sensegiving efforts of SI management, including symbolic actions such as attending the launch meetings, introductory session and initial discussions on the strategic importance of this project for the firms involved, teams instead looked to more familiar influences, drawing upon existing interpretative schemes to seek an understanding of collaboration in a way that made sense to them. As Gioia et al., (1994:365) observe "people take into consideration the realized, or likely outcomes, of their own actions or those of other significant stakeholders, in trying to understand what to do next". In the case of these buyer-supplier teams it seems the most powerful sources of initial influence were 'realised' experiences and outcomes from previous events and circumstances. As new triggers emerged, causing teams to revise initial interpretations, management again acted to influence the sense that teams made of collaboration. In this case however, sensegiving efforts related more directly to events and circumstances that had transpired in this current context of collaborating. Consequences, such as needing to address problems in their areas of operational responsibility; needing to protect performance reputations established with management; and needing to revise previously incorrect assumptions, made sense to the teams and formed a basis from which they were willing to take action towards engaging with the project.

As teams continued to look for ways to make sense of collaboration, additional sources became influential upon team sensemaking. In particular, as teams sought to reconstruct previous assumptions in relation to collaboration, they become open to influences which helped to establish and confirm newly emerging understandings or interpretations. In this regard, the dyad partner team became a legitimate 'influence relationship' as teams sought ways to understand, confirm, and legitimate collaboration with parties most closely associated with their thinking. Management and also peers also acted as sources of influence, lending support to the emerging ideas and also vision of collaboration within the teams. Where management did not support teams' ideas and visions of collaboration however, teams opposed or overlooked management views (e.g. *SU B* and *SI C*).

In addition to these interpretative stages, and to the triggers that moved the teams from one interpretative stage to the next, analysis in this study also reveals the associated actions linked to evolving interpretations in these teams. These actions are considered in the following section.

6.4 Preparing to Address the Second Research Question: Actions Accompanying Interpretation Stages

Chapter Five presented the actions that accompanied evolving interpretations within these buyer and supplier teams. Drawing upon that data set this section carries out a comparative cross-case analysis involving each of the buyer and supplier teams to address the second research question in this study. As discussed in Section 5.8, in addressing this research question the researcher looked at the actions linked to interpretations by each team. Analysis looked at the nature of these actions in addition to how they linked to interpretations, with a view to understanding the importance of interpretations of sensemaking triggers with respect to actions, and with respect to how actions evolved over time. These actions were then analysed with respect to the transition and likely outcomes of collaboration.

6.4.1 Team Actions: T1

Common across the teams, and associated with the first interpretative stage, were actions taken by the teams to minimise the impact of goals and plans of collaboration. With respect to the initial launch and introductory workshops, each dyad was expected by the SI leader and project facilitators to collaborate on an implementation plan relating to the improvement initiatives, and to share responsibility for initiative activities and corrective actions. Participants were encouraged to negotiate and jointly decide the improvement initiative, define the process, identify activities, agree roles and responsibilities, engage jointly in managing and overseeing progress, solve problems and present improvement actions taken and outcomes achieved. In addition, the SI leader played a proactive role during the initial stages of the project, encouraging all SI and SU teams to revise their ways of thinking and working with the dyad partner, and to embrace collaboration by

entering into negotiations in an honest and open manner and by participating equally in making decisions and agreeing roles and responsibilities at the dyad-level.

Despite these efforts to introduce and familiarise teams with the concepts of collaboration, the emphasis by teams was upon maintaining 'business as usual", with the single exception of SU D. Accordingly, both the SI and SU teams worked within their knowledge of existing structures and processes in order to 'manage' collaboration by minimising its likely impact. This reflects the initial *vision* of collaboration by teams as an extension to the existing relationships and reality between the teams. Teams with the ability to influence the situation in their favour did so, drawing upon previous ways of controlling or managing the situation with the dyad partner team. This included the more dominant teams, SI A, SI B, and SI D, which made efforts to minimise the impact of any changes to their ways of thinking and working and instead imposing changes upon the SU teams through issuing instructions, setting deadlines and communicating expectations in a formal and directive, rather than shared and negotiative manner. Conversely SU A, SU B and SU C tried to minimise the impact of any changes to their ways of thinking and working, either avoiding or subtly blocking initiative progress, whilst trying to not cause obvious disruption to usual work processes and practices between the teams. Again these teams used methods such as excuses to account for a lack of progress (e.g. SU A) and tactics to 'cover up' their efforts to avoidance project tasks (e.g. SU B). SU C similarly avoided responsibility but the market crises facing the company was understood by the SI firm. SI C tried to minimise the impact of any changes by merely complying with management expectations as requested but taking little initiative to plan the initiative or communicate with the dyad partner team outside of the workshop by again citing workload as a competing pressure. SU D did however make efforts to engage with the project, initiating tasks and trying to work jointly and share responsibility for planning with the SI team.

The result was an overall 'appearance of effort' by the teams to engage with the project, with the reality of 'behind-the-scenes' forces operating against the progress of collaboration between the teams. The *transition* can therefore be considered as one of maintaining 'business as usual' where possible. Accordingly, *likely outcomes* at this stage were considered problems or opportunities with regard to existing operations and relations between the teams.

Exploring the links between interpretations and actions, these findings therefore suggest that initial actions taken by these teams occurred where the trigger (the launch and introduction to the project) was interpreted as simply an extension to the existing relationship and reality between the teams, with the ability to create problems or opportunities for the teams in relation to existing operations and relations.

6.4.2 Team Actions: T2

Team actions at this second interpretative stage reflect the assessment of collaboration made by the teams as 'significant in its own right', with the capacity to impact the team either positively or negatively and either directly or indirectly. Accordingly, teams realised the need to revise the initial approach to the project with transition now seen in terms of the need to change their initial approach and with the focus on achieving operational outcomes. For example, SI A and SI B decided to have more direct involvement in, and responsibility for the initiative, focusing upon internal investigations around the initiative, and deciding to work more closely with the SU partner in the future. SI B focused upon monitoring progress around similar operational improvements with the SU, whilst SI B focused upon a KAIZEN initiative. SI C focused upon completing initiative activities and upon ensuring initiative timelines were met in accordance with management expectations. This focus generated little interaction with the SU team. SI D also intensified its efforts to achieve operational improvements, although the change in action was toward engaging with internal experts, rather than with the dyad partner team. to investigate problems and solutions.

In the SU teams a change in action similarly occurred. For example, SU A moved from a previously compliant approach, towards a more direct and proactive approach to working with the SI, discussing corrective action and independently seeking contributions from internal experts. In SU B, change was reflected in efforts by the team to change from initial avoidance and blocking behaviours towards efforts to engage more fully with the initiative. Specifically, the team set up a meeting to share its views with the owner-manager and to discuss plans to engage more fully with the project. Despite these efforts however, the owner-manager continued to have concerns regarding the demands of the project. SU C rejoined the project, complying rather than avoiding activities. Finally, SU

D revised its initial approach away from its focus on shared interaction with the SI and toward emphasising operational improvements and arranging meetings with SI operational experts in this regard.

The *transition* at this stage was therefore in terms of moving 'away' from the initial approach to the project, toward engaging more directly with the project and with the dyad partner team, as necessary to achieve operational improvement goals and redress unwanted consequences arising from the initial stages of the project. Accordingly, *likely outcomes* at this stage were seen in terms of operational improvements for the team and / or the firm.

In addition to the shift in interpretations at this stage the teams responded, in an observable way, to triggers arising from the events and circumstances of the project. With respect to the links between interpretations and actions, these findings suggest that actions at the second stage occurred when the trigger (evidence from the project) was interpreted as 'important in its own right' in terms of impacting the operations of the teams. This importance related to project's ability to impact the team, either positively or negatively, with respect to current areas of operational responsibility. Such responsibilities related to addressing problems in areas of operational expertise, protection of performance reputations with management, and meeting management expectations with respect to the achievement of operational improvement goals.

6.4.3 Team Actions: T3

Team actions at this third interpretative stage reflect the vision of collaboration by the teams as enabling 'real change' in how teams worked together. Accordingly, with deliberations triggered by team experiences of improvements, and influenced by dyad-level interactions, by management and by peers, teams realised the need to revise their previous approach to engaging with the project. In turn, transition was now seen in terms of 'learning by doing', with the focus shifting from trying to control the impact of the project and avoid potential problems, towards trying to 'figure out' solutions to problems by working jointly with the dyad team and towards making sense of the ensuing benefits and dis-benefits of attempts to do so.

Actions at this stage reflect this shift in interpretations with teams' initial, tentative engagement at dyad-level evolving towards a more continuous search for opportunities for shared engagement with the dyad partner team. For example in SI A initial intentions to share planning and responsibility evolved towards seeking out, listening to, and relying upon SU team inputs, against the backdrop of management pressure to ensure initiative success. Similarly, SI B moved from monitoring SU performance towards actively relying upon SU inputs and jointly evolving a formal approach to share roles and responsibilities and to ensure a shared approach to using the database table between the teams. SI D moved from trying to regain control of the initiative and focusing upon working more closely with SU experts, toward focusing upon working jointly with the SU team sharing responsibility, negotiating plans, and relying upon SU team inputs. In contrast, actions in SI C were represented by continued efforts to achieve operational goals but to reduce any further involvement in the project by the team.

In the SU teams, similar shifts in action were noticeable. SU A moved towards taking ownership of, and actively seeking responsibility for the initiative, meeting the demands of the project against the backdrop of ongoing pressure from the owner-manager to remain cautious towards engaging with the project. Changes are similarly notable in SU B, which moved from being initially cautious of proposing ideas or debating views with the SI, towards more independent contributions and actions, debating ideas and also sharing its concerns with the SI team. Actions also included efforts to gain internal support for collaboration. A similar shift in actions is evident in SU C with the team moving from complying with SI team requests, towards taking ownership of the project, engaging in discussions with the SI leader, independently seeking assistance from internal experts and the SI leader, and prioritising initiative activities to ensure successful outcomes were achieved. Although the team saw little change in its dyad relationship it viewed collaboration as capable of generating valuable improvements. Finally, SU D moved from a perceived lack of progress with SI D towards resuming its efforts to engage jointly with the SI to achieve initiative goals.

The *transition* at this stage was therefore seen in terms of 'learning-by-doing'. Actions were dyad-focused, reflecting team interpretations of collaboration as reciprocal in nature and requiring input and agreement by both teams. Accordingly, *likely outcomes* at this stage were considered in terms of operational and relational improvements.

With respect to links between interpretations and actions, these findings suggest that actions at the third stage occurred when the triggers (experiences of improvement in day-to-day operations and in the relationship with the dyad partner team) were interpreted as enabling real improvements in the day-to-day workings of the team, as giving a clearer sense of purpose, as facilitating constructive improvements in dyad relations and as allowing an understanding of the intentions and role of the dyad partner team to emerge. As teams experienced positive consequences from changing established patterns and procedures in working with the dyad partner, in addition to experiencing support for these developments from management and peers, they continued to change their approach to interacting at dyad-level, with actions evolving incrementally and reciprocally with the dyad partner team and / or firm. These findings also suggest that, whilst changes in action are triggered by changes in interpretation, changes in action also themselves trigger changes in interpretation whereby experiences of interacting with the dyad partner team triggered team sensemaking, leading to a shift in interpretations.

6.4.4 Team Actions: T4

Team actions at this fourth interpretative stage reflect the vision of collaboration as a purposeful, legitimate way of working to seek improvements and to strengthen relationships with supply chain partners. Accordingly, with acceptance of collaboration triggered by final initiative outcomes, feedback on completed initiatives, and the formal end of the project as an occasion to reflect, teams realised the need to move towards 'cementing' what they had learned by pursuing further improvement opportunities. Actions at this stage reflect this vision, with teams engaged in discussing and planning future improvement initiatives. For example, SI A made plans to continue to collaborate independently of the SI leader, selecting a further improvement initiative with the SU team and also discussing how to 'roll-out' to other supplier firms the process improvements achieved. SI B similarly expressed interest in continuing to collaborate with SU B, in addition to exploring opportunities and again making plans to 'roll-out' similar initiatives with other suppliers. SI D also made plans to continue to collaborate, planning future initiatives in consultation with the SI leader and the SU team. In contrast to these teams, although consistent with its experiences, actions in SI C are marked by distinct efforts to end its involvement in future collaborative initiatives.

SU A also engaged in planning future initiatives with the SI. Plans were made independently of owner-manager with the team instead relying upon the views and support of the SI as a platform from which to later seek owner-manager inputs and, potentially, support. SU B also engaged in reflections and undertook tentative planning efforts with respect to continuing to collaborate with the SI team. Reflective of the internal lack of management support for the project however, further initiative plans were restricted. SU C also agreed to continue with future initiatives, identifying other functional areas to which it could 'roll-out' the database table. Finally SU D planned future improvement initiatives with both the SI partner team and other supply chain partners.

Intentions and actions at this final stage are an affirmation of team experiences of collaboration. Where teams intended to continue to collaborate, evidence of this intention is apparent in efforts to plan and progress further initiatives. Where teams did not intend to continue to collaborate, actions similarly reflect this intention. The *transition* at this stage is therefore less about figuring out 'why' they should collaborate and the 'how' of collaboration and more about figuring out ways in which to continue to collaborate where collaboration is seen as a worthwhile pursuit. *Likely outcomes* are in turn no longer bounded by the focus of the initial improvement initiatives, but rather reflect an enthusiasm for pursuing additional improvement opportunities with and beyond the current dyad partner team and the scope of initial improvements.

With respect to links between interpretations and actions, these findings suggest actions at the fourth stage occurred where the triggers (initiative outcomes and the end of the second initiative as an occasion to reflect) were interpreted as impacting, either positively or negatively, the future performance of the team. Where teams accepted that a real opportunity for continued gain from a collaborative way of working existed, they acted to secure these benefits for the team and, in some cases, for the firm. Where teams accepted the likelihood of continued problems arising from collaboration, efforts were taken to avoid further collaborative endeavours.

A summary of these findings is presented in Table 6.2

Table 6.2: Team Actions at each Time Period T1 – T4

Actions at:
T1: efforts to minimise the impact of collaboration goals and plans
T2: efforts to engage with the project and the dyad partner team as necessary to progress operational improvement outcomes and minimise unwanted consequences
T3: learning-by-doing approach characterised by continuous efforts to work jointly with the dyad partner team
T4: efforts to secure continued gain from a collaborative way of working

The above analysis presents team actions accompanying each of the interpretative stages of collaboration development. In light of these findings, the following section addresses the second research question in this study, namely:

> Q2. What actions accompany buyer and supplier parties' interpretations of collaboration and how are these actions linked to their interpretations?

6.5 Addressing the Second Research Question

Analysis of the actions that accompany the evolving interpretations of collaboration indicates that actions at the initial interpretative stage were typically efforts made by teams to minimise the impact of collaboration goals and plans, for example avoidance, blocking behaviours, and compliance. Actions at the second interpretative stage reflect the assessment made by the teams of the need to accelerate the progress of operational goals with a shift towards efforts to engage with the project and with the dyad partner team as necessary to progress operational improvement outcomes and minimise unwanted consequences. Such efforts include internal investigations and consultations with experts to accelerate progress, and prioritising operational improvement planning and task performance, both internally and with the dyad partner team. Actions at the third interpretative stage reflect a more deliberate approach to collaboration and a much more significant change in action, with an emphasis at this stage on 'learning-by-doing'. Team actions moved from initial, tentative steps to engage at the dyad-level towards more continuous and significant efforts to collaborate with the dyad partner team including sharing responsibility, debating views and ideas, interdependent planning, joint decision

making and problem solving. Finally, actions at the fourth interpretative stage reflect acceptance of collaboration as a purposeful, legitimate way of working and of improving operations and relations with the dyad partner team. Actions at this stage were taken to secure continued gain from a collaborative way of working, for example, 'rolling-out' current initiatives with other firms, and planning future initiatives with the dyad partner team and with other supply chain partners.

Additionally, findings reveal the links between interpretations and actions. With the exception of SU D, initial actions occurred where the trigger (the launch and introduction of the project) was interpreted as simply an extension to the existing relationship and reality of working with the dyad partner team, and as likely to create problems or opportunities for the teams in relation to existing operations and relations. Actions at the second stage occurred when the trigger (evidence from the project) was interpreted as important and worthwhile 'in its own right' with the capacity to impact the team either positively or negatively and either directly or indirectly with respect to current areas of operational responsibility. With the exception of SI C, actions at the third stage occurred when the triggers (experiences of improvements in day-to-day operations and in the relationship with the dyad partner team) were interpreted as enabling real, fundamental, improvements in the day-to-day workings of the team and enabling worthwhile improvements in dyad relations. These findings also suggest that changes in action also triggered changes in interpretation at this stage, whereby experiences of interacting with the dyad partner team triggered team sensemaking, leading to a shift in interpretations. Finally, actions at the fourth stage occurred when the triggers (the outcomes and end of the second initiative as an occasion to reflect) were interpreted as impacting, either positively or negatively, the processes, outcomes, and future performances of the team. Based upon the above analysis, team interpretations and actions, and the triggers that influenced their evolution are illustrated in Figure 6.1.

Figure 6.1 Sensemaking Perspective on Collaboration: Triggers, Interpretations and Actions

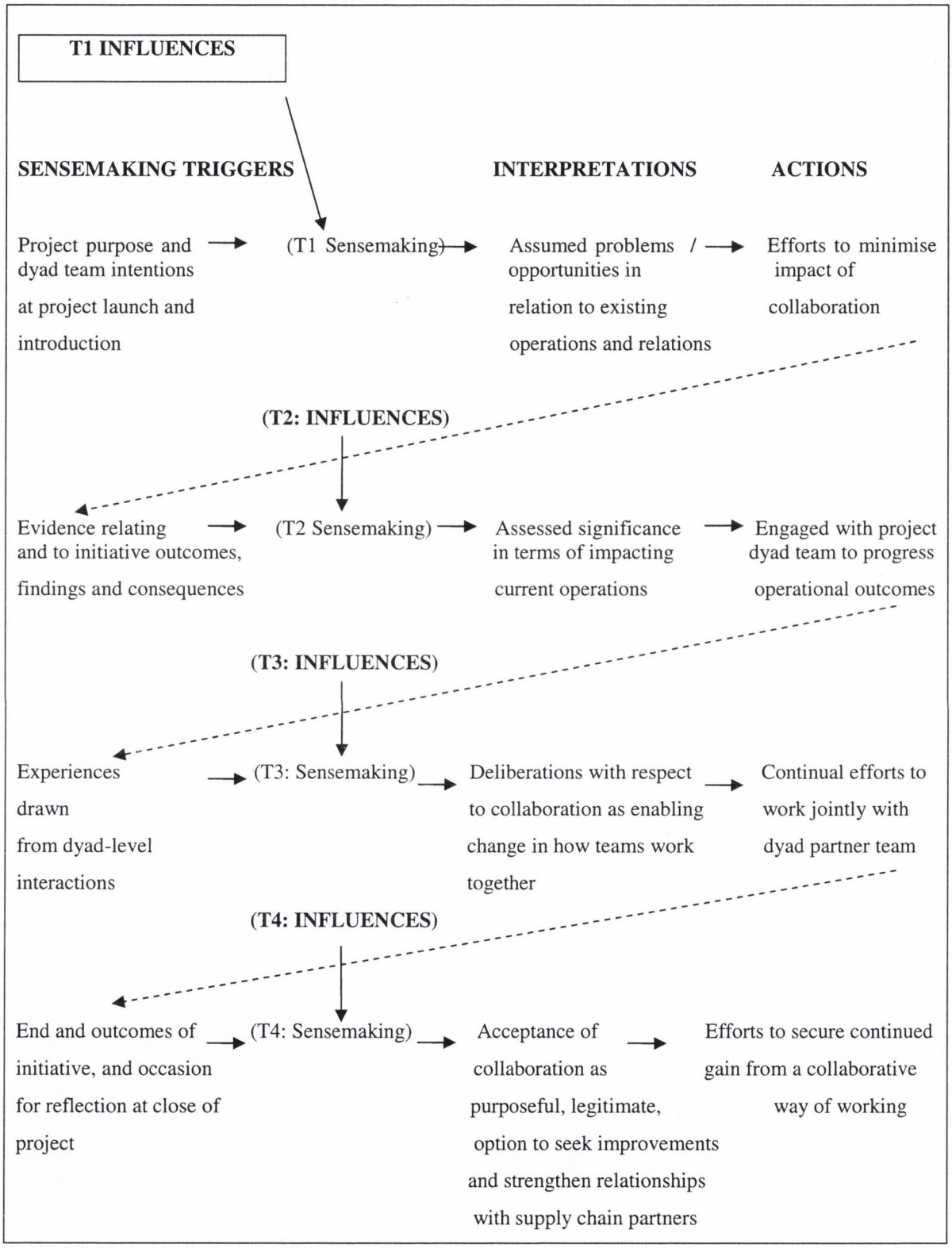
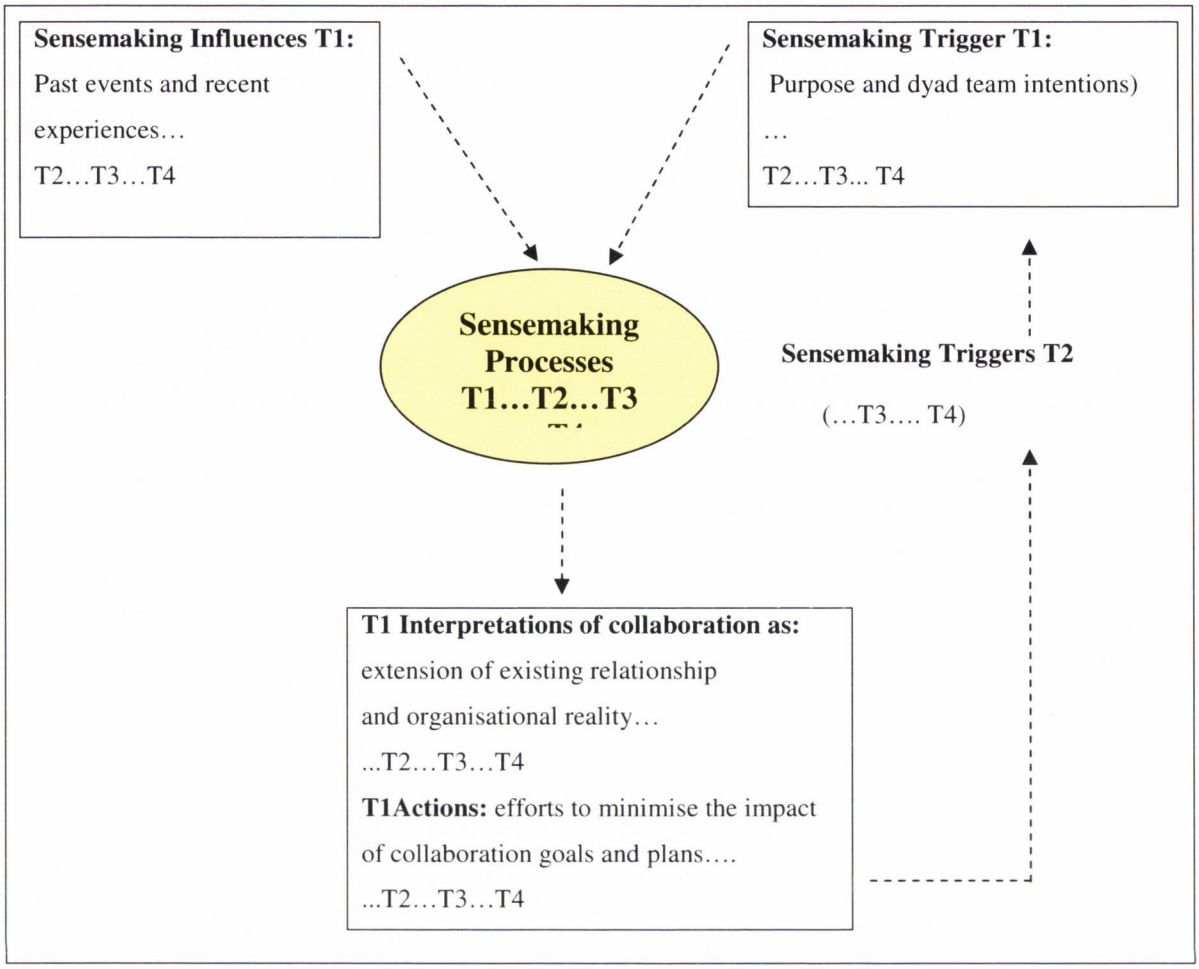


Figure 6.1 indicates how interpretations of collaboration evolved within these teams. It describes the interpretations, the sensemaking triggers, team actions, and also how teams came to revise these interpretations and actions from one stage to the next. The forces which mediate the interpretations of collaboration in this buyer and supplier context are therefore made explicit. This model provides an understanding of the actual triggers that led teams to revise interpretations and actions with respect to collaboration, and of the actual influences - both intended and unintended - that impacted teams' understanding and acceptance of the vision, transition and likely outcomes of collaboration. In addition this study makes explicit the sensemaking processes that these teams engaged in as they made sense of collaboration, and how these varied over time and across the emerging process of collaboration. The value of this model lies in its explanatory power, with the sensemaking perspective explaining how these teams moved towards an understanding and acceptance of the vision, transition and likely outcomes of collaboration during the initial and early stages of collaboration between these teams.

Reflecting the conceptual framework presented in Figure 3.1, and consistent with the concept of sensemaking as a cyclical process, the above findings can also be represented cyclically. Evolving interpretations and actions; the triggers that caused teams to revise interpretations leading to new actions; the social interaction (sensemaking) processes through which teams made sense; and the key influences upon sensemaking perceived by the teams at each interpretative stage, are presented in Figure 6.2. Figure 6.2 shows the links within sensemaking, how interpretations evolve over time and how actions link to interpretations. This figure shows that at T1 the project launch and introduction triggered *sensemaking* in relation to *purpose of the project* and *the intention of the dyad partner team.* Teams drew upon existing interpretative schemes including *past events and experiences* in order to make sense of these unfolding events and circumstances. This led to *interpretations* of collaboration and to *actions.* The next round of sensemaking at T2 was triggered by *sensemaking triggers at T2*, which in turn began the cycle of *sensemaking* at T2, influenced by *sensemaking influences* at T2, leading to *interpretations* and *actions* at T2 and so forth. This cyclical sensemaking process within these buyer and supplier teams is illustrated in Figure 6.2.

Figure 6.2: Collaboration and the Cyclical Sensemaking of Buyer-Supplier Teams



Accordingly, each of the triggers, influences, sensemaking processes, interpretations, and actions that populate this diagram for each period of T1, T2, T3, and T4 are presented in Table 6.3 below.

Table 6.3: Data for Sensemaking Cycles

Sensemaking Triggers at:
T1: project purpose and intentions of the dyad team at project launch and introduction
T2: evidence relating to the initiative outcomes / findings and consequences
T3: experiences drawn from dyad-level interactions
T4: end and outcomes of initiative and occasion for reflection at close of project
Sensemaking Influences at:
T1: Past events and recent experiences of interacting with the dyad partner team,
T2: Management pressures
T3: Dyad team, management and peers
T4: Management

Sensemaking Processes at: T1: team-level stories and speculations T2: discussions around project findings, project presentations and reports, and with management. T3: dyad-level meetings and discussions, project findings and reports, meetings with management, peer feedback T4: dyad-level discussions, project findings and reports, meetings with management
Interpretations at: T1: collaboration as an extension to the existing relationships and reality between the teams with the ability to create problems or opportunities for the teams in relation to existing operations and relations T2: collaboration as seemingly significant 'in its own right' with the capacity to impact the team either positively or negatively and either directly or indirectly with respect to current operations T3: collaboration as enabler of 'real', fundamental, change in how teams worked together with, in some cases, this change equaling real improvement. T4: collaboration as purposeful, legitimate option to seek improvements and to strengthen relationships with supply chain partners
Actions at: T1: efforts to minimise the impact of collaboration goals and plans T2: efforts to engage with the project and the dyad partner team as necessary to progress operational improvement outcomes and minimise unwanted consequences T3: learning-by-doing approach characterised by continuous efforts to work jointly with the dyad partner team T4: efforts to secure continued gain from a collaborative way of working

Analysis of these interpretations and actions also suggested the vision, transition and likely outcomes of collaboration at each period T1 to T4 as presented in Table 6.4

Table 6.4: Vision, Transition and Likely Outcomes of Collaboration T1 – T4

Vision at: T1: Collaboration as an extension of the existing relationship and reality between the teams T2: Collaboration as 'significant in its own right' in impacting operations T3: Collaboration as enabler of real change in how teams worked together T4: Collaboration as a legitimate way of working to seek improvements and to strengthen relationships with supply chain partners.
Interpretations of the Transition at: T1: Maintaining 'business as usual' where possible T2: Changing 'away' from the initial approach and focusing upon ways to achieve operational goals T3: Learning-by-doing. T4: Figuring out ways in which to continue to collaborate where worthwhile
Interpretations of Likely Outcomes at: T1: Problems or opportunities with respect to existing operations and relations between the teams. T2: Operational improvements for the team and / or the firm T3: Operational and relational improvements for the team and / or the firm T4: Continuing operational and relational improvements for the team and / or the firm into the future

The sensemaking approach to the study of collaboration in this thesis provides insights into *how* and *why* teams moved towards an understanding and acceptance of the vision, transition, and likely outcomes of collaboration. Conversely it provides insights into *what didn't work* and again, *why not.* These findings show how understanding and acceptance of the vision, transition, and likely outcomes of collaboration within these buyer-supplier teams can be understood as an interpretative process. Accordingly, interpretations and actions are the result of the way these teams 'themselves' made sense of events and circumstances, and of the influences they perceived. This allows for an understanding of actual outcomes relative to those planned for and intended by the sensegiving efforts of management and project facilitators. Also it indicates opportunities for management to influence the sense that parties make, in addition to aspects of team sensemaking that may challenge or limit managerial influence.

For example, despite initial sensegiving efforts by the SI leader to influence team interpretations with respect to collaboration, teams did not draw upon the formal and intended sensegiving efforts, including communications and interventions by the SI leader and project facilitators. Rather, teams initially drew upon events and experiences which characterised their histories with the dyad team and firm, drawing upon these as a basis for rumours and speculations regarding the nature and purpose of collaboration and the intentions of the dyad team. Established histories with the dyad partner therefore comprised the lens through which interpretations of collaboration, and subsequent actions, were formed. Despite agreeing goals and being made aware of structures and processes in place to facilitate teams in working together, teams did not draw upon these to make sense, focusing instead on making sense by 'assuming' what the purpose of the project, and the intentions of the dyad partners, might mean for the team.

The shift in interpretations away from the more familiar basis of past events and experiences - and towards project-related events and circumstances - was triggered by project evidence, with teams making sense of what had gone on and why with respect to operational evidence and outcomes. In turn, sensemaking was influenced by management pressures to address the initial findings and outcomes of initiatives. Despite the shift in the interpretative basis towards project-related events and circumstances, the basis for and influence upon team interpretations at this stage were familiar concerns. Examples include teams' sense of concern with addressing problems within its areas of operational responsibility, team concerns with its performance reputation, and team concerns with meeting management expectations. Accordingly, management influences were also seen to emphasise operational performance outcomes, with management leveraging team concerns with reputation etc. and also emphasizing the importance of achieving measurable performance outcomes such cost reductions, lead time reductions etc. over improvements in relations between the teams and in how teams worked together.

Teams understood and responded to these more 'familiar' concerns, which seemed to resonate more closely with the team and help them to 'break out' of preconceived thinking patterns and established work patterns, towards acknowledging the need to change their previous approach towards engaging with the project. In the mode of 'searching' for new ways of engaging with the project, old ways were revised. The sensemaking lens at this stage focused upon assessing the positive and negative consequences of the project with

respect to operations and operational performance. Although the shift in approach towards engaging with the project was operations-focused, teams revised and communicated this change in approach through face-to-face meetings with the dyad partner, management, and available experts, as appropriate. In addition, discussing time-frames, sharing plans and schedules, and assigning roles and responsibilities are all examples of team actions at this stage, with teams beginning to engage more directly with the project and its demands, in an effort to take responsibility for achieving operational improvements.

As teams began to revise their initial approach - and as opportunities and reasons for shared interactions presented themselves through ongoing initiatives - new triggers and influences, which caused teams to once again revise their interpretations, began to emerge. These triggers were opportunities, jointly created by the teams, for discussions and interactions at dyad-level. Through these opportunities, teams experienced improvements in operations and relations with the dyad partner team. Despite initial sensegiving efforts around the potential for collaboration to generate such improvements, it seems teams needed to actually experience 'for themselves' what collaboration was about and 'what it meant for the team'. In this way, collaboration was 'given meaning' through teams experiencing new ways of thinking and working, triggering revision of old ways of thinking and working through the emergence of new solutions to old problems and new ways of working with 'old partners' which made sense to the teams. Team sensemaking therefore revolved around efforts to reconstruct the old and align it with the new, with this 'search for meaning' was reflected in the broadening of sensemaking processes and influences to include the dyad partner, management and peers, as teams deliberated over the benefits and drawbacks of collaboration which they were experiencing.. Experiences and influences helped teams to reconstruct established, pre-existing views of working with the dyad team including the initial intentions of the dyad team and the value of working with the dyad team to achieve improvements. These experiences and influences in turn served to positively or negatively reinforce evolving interpretations.

Actions at this stage reflect this shift in team interpretations. Initial efforts to revise interaction strategies with the dyad team focused upon meetings at dyad-level to plan and share responsibility for initiatives. As teams experienced positive consequences from changing established patterns and procedures to working with the dyad partner, in addition to experiencing support from management and peers for these changes, they continued to

evolve their approach to interacting at dyad-level. Examples of team actions at this stage include teams relying upon contributions and inputs from the dyad partner team in planning and decision making; teams making decisions jointly; teams sharing ideas and also concerns with the dyad partner team; and teams interdependently investigating solutions and applications of shared learning.

With respect to the fourth stage, and the request for teams to reflect at the close of the project, teams perceived this stage as a significant opportunity to decide the future for what they had learned and achieved to date, and an opportunity to impact future operational and relational benefits of collaborating. Accordingly, in making sense of what the 'close' of the collaboration initiative might mean, teams moved toward acceptance of 'newly emerged' ways of thinking about, and working with, the dyad partner team. Team efforts were towards maintaining their perceived benefits of collaboration and towards exploring and planning additional opportunities to collaborate with supply chain partners. A key influence on sensemaking at this stage was management support, perceived by the teams as helping to legitimate their views and continued efforts. Also at this stage, and in contrast to the initial stage, teams were open to management sensegiving with regard to the value and benefits of collaboration, drawing upon these newly emerging interpretative schemes to make sense of collaboration.

These findings provide a number of key insights for sensemaking and sensegiving with respect to collaboration between buyer and supplier teams. These are considered in the following section.

6.6 Discussion

As discussed in Chapter Two, although an extensive body of literature exists addressing success factors for collaboration, in addition to the roles and responsibilities that may influence its success, collaboration continues to prove a complex and challenging managerial pursuit (e.g. Kahn, 1996; Bowersox et al., 2003; Huxham and Vangen, 2005). As introduced in Section 1.3, the decision to pursue a strategy of collaboration is recognised in this study as potentially requiring firms to pursue different goals from those

they may have previously pursued with supply chain partners (e.g. Simutupang and Sridharan, 2002; Kahn, 1996), in addition to confronting firms with changes in the ways they may have previously worked with partner firms (e.g. Dacin et al., 1997; McLaren et al., 2002; Haskins et al., 1998; Kahn, 1996). Accordingly, collaboration is suggested in this study as an occasion for sensemaking. Literature on organisational change recognises the importance of management sensegiving (Gioia and Chittipeddi, 1991; Bartunek et al., 1999; Corley and Gioia, 2004; Dunford and Jones, 2000; Gioia and Thomas, 1996) in addition to potential challenges and limitations to sensegiving efforts. In particular, challenges and limitations may arise from the mediation of sensegiving by recipients of such efforts (Brown, 1998; Tsoukas and Chia, 2002; Balogun and Johnson, 2004) and also influences from the existing and emerging context of action (Jarzabkowski 2004; Johnson et al., 2003).

As discussed in Section 2.6, collaboration literature recognises that those engaged centrally in the collaborative effort play a key role in ensuring the success of collaboration (Liedtka, 1996; Mattessich, 2001). In addition collaboration literature recognises the variety of influences (success factors, support roles, environmental conditions etc.), from within the collaborative context, which may impact the success and failure of collaboration (e.g. Mattessich et al., 2001; Nooteboom, 2004; Huxham and Vangen, 2005). Despite these observations however, whilst much of the literature on collaboration is focused upon efforts to facilitate parties' understanding and engagement with collaborative efforts (e.g. Mattessich et al., 2001; Nooteboom, 2004) the mediating role of recipients' sensemaking, in addition to exploring the evolving process of collaboration from the sensemaking perspective of those directly involved, have not been explicitly explored. The findings in this study indicate that the transition towards understanding and acceptance of collaboration in these teams can be understood as an interpretative process. In turn these findings suggest that understanding and managing collaboration is enhanced by exploring it from the sensemaking perspective of those engaged in the process; from understanding the concerns that underpin their sensemaking; and from understanding what and how influences act upon their sensemaking.

As observed in the preceding section, the value of this study lies with its explanatory power, providing insights into the sensemaking-sensegiving dynamics of collaboration between buyer and supplier teams. Against the backdrop of collaboration as a challenging and

complex process these findings provide insights into 'how' and 'why' collaboration evolved as it did between these buyer-supplier teams. In particular, these findings indicate that helping parties to understand and accept a collaborative way of working is confounded by the active role that parties play in constructing their own sense of what collaboration may mean. Accordingly, findings in this study provide an understanding of the challenges and complexities of managing collaboration between these buyer-supplier teams, in addition to ways in which efforts to facilitate understanding and acceptance of collaboration may be enhanced.

Collaboration literature emphasises facilitating and influencing the involvement of parties in collaborative activities (e.g. Nooteboom, 2004; Huxham and Vangen, 2005). The sensemaking perspective adopted in this study allows an understanding of those activities which may help to trigger and influence this *involvement* by buyer and supplier parties. Balogun and Johnson (2004) discuss the challenges to top-down control of organisational change with respect to the intervening role of middle manager sensemaking. In contrast to top-down approaches, managing collaboration is explicitly recognised as a participative process, with management skills considered to revolve around gaining participation, motivation, commitment, of those parties directly involved (Mattessich et al., 2001; Liedtka, 1996; Huxham and Vangen, 2005). With such focus on a participative approach, understanding participants' perceptions and the concerns underpinning these perceptions, suggests an effective way of enacting a participative approach, and a means to 'join-in' conversations and address topics in a way that is meaningful and relevant to the parties concerned. Understanding the nature of evolving interpretations of collaboration within these buyer and supplier teams provides a lens through which those concerned with influencing sensemaking around the vision, transition, and likely outcomes of collaboration can come to better understand that management task. In addition, Huxham and Vangen (2005:230) discuss the importance of striking a balance in the leadership of collaboration between "the ideology of collaborative working and the pragmatism needed to get things done". The sensemaking perspective in this study similarly allows for an understanding of what the 'pragmatism' of getting things done in this buyer-supplier context relates to - for example leveraging more conventional team concerns and responsibilities to initially influence their engagement with collaboration may help parties to begin to revise their established ways of thinking and working. These findings also provide direction for management by providing insights into how managerial influence and efforts may need to change *over time.*

The insights derived from adopting a sensemaking perspective in this study are discussed in the following sections and under the following headings:

- Influencing Old and New Interpretations and Addressing Team-Level Concerns;
- Leveraging Management, Peer, and Dyad Partner Influences on Sensegiving; and
- Managing Success Factors for Sensemaking between Buyer-Supplier Parties

These sections will present insights into buyer-supplier collaboration in addition to insights for more effective facilitation of understanding and acceptance of collaboration between buyer-supplier teams, gained from a sensemaking perspective.

6.6.1 Old and New Interpretations and Team-Level Concerns

Isabella's (1990) study of evolving interpretations of unfamiliar events describes the pattern of managers' interpretations of unfamiliar strategic events as following a 'vague to specific' pattern. Isabella found that managers' interpretations of unfamiliar events did not involve disconfirming existing beliefs as much as building new ones. Nothing in their previous beliefs and understandings changed but rather new information was added-on to these prior beliefs and understandings (Isabella, 1990). In contrast, Barr's (1998) study of manager's interpretations of strategic events found that interpretations of familiar events were represented by very definite changes in previously held interpretations, whereby old concepts were replaced by new concepts. New concepts were "represented not simply as an addition to understanding but as a true change in the nature of causal beliefs about familiar firm-level activities" (Barr, 1998:663).

Although the unit of analysis in this study differs from the 'top manager' focus of these studies, with respect to the *pattern of interpretations* it seems that evolving interpretations towards understanding and acceptance of collaboration involve a *combination* of both patterns i.e. building new interpretations in parallel to changing previously held interpretations whereby old concepts are replaced by new ones. Specifically, initial team interpretations were 'informed' views on working within the dyad team, based upon prior events and experiences, with teams moving towards revision of these initial interpretations

over time, for example revising initial interpretations of the intentions, the role, and also the value of inputs from the dyad partner team. In contrast, interpretations of the nature and purpose of collaboration as a way of working moved from initially vague generalisations and speculations, to more well-informed, well-constructed bases involving the building of new, rather than the revising of old, interpretations. The combined *familiarity* of working with the dyad partner team and *unfamiliarity* of a collaborative approach to doing so created the combined need for teams, in moving towards understanding and acceptance of collaboration, to both build new, and revise old, interpretations. With regard to the SI leader and project facilitators' initial sensegiving efforts, although these targeted the building of new interpretations with respect to collaboration these sensegiving efforts did little to revise old interpretations with respect to working with the dyad partner team. Yet these existing or 'old interpretations' acted as the dominant basis for initial sensemaking, with concerns focused upon the team-level rather than the dyad-level, and teams accordingly drawing upon a basis for understanding that was *familiar* at *team-level.* Team actions followed the 'familiar' route with teams focusing on maintaining a 'business as usual' approach and minimising the impact of collaboration where possible.

The subsequent discontinuity or shift in interpretations was triggered by events and circumstances which caused teams to build new interpretations with respect to the purpose of collaboration and what it actually meant for the team, versus what teams had initially assumed it meant. Although these 'new interpretations' tended towards what collaboration meant in terms of operational improvements, teams began to search for new ways to engage with the project, with revised actions focused upon the achievement of operational goals. In addition, SU A and SU B teams began also to revise initial assumptions regarding the dyad partner team intentions at this stage, based upon corrective actions taken by the dyad team.

The next interpretative stage reflected the revision of old interpretations - with respect to working with the dyad partner - *in parallel* to building new interpretations with respect to what collaboration meant for the team. As teams experienced the failure of old ways of working they began to seek new approaches, new solutions, new ideas and new directions to achieve initiative goals. New ways of working led to teams building interpretations of what collaboration meant in terms of *purpose* and *benefits.* Accordingly, as teams

experienced new ways of working with the dyad team, teams began to revise old interpretations with respect to the dyad team. This cycle of 'revising old' and 'building new' interpretations led to evolving interpretations of the vision, transition, and likely outcomes of collaboration. In turn, familiar actions were further revised and new ways of working with the partner team evolved. The fourth interpretative stage sees acceptance by the teams of the revised and newly-built interpretations, with these acting as 'newly familiar' interpretations with respect to collaboration and to collaborative efforts with the dyad partner team, rather than interpretations 'under construction' as characterised by the previous stages of interpretation.

The findings in this study also suggest the dominance of team-level concerns at the outset of the collaborative initiatives. For example, the focus on maintaining the pre-existing power-balance between the teams was a key concern for the SI teams. In addition, the focus on increasing visibility between firm operations and facilitating greater openness and sharing of information between the firms caused concern, particularly for the SU teams.

Helping parties to let go of past mindsets and behaviour, in addition to building commitment to new mindsets and behaviours, are seen as central activities to ensuring the success of a change process (Bridges and Mitchell, 2000). Where collaboration represents a change for parties in terms of new ways of thinking and working together, managing this transition seems central to managing the collaborative effort. Chapter Two introduced a variety of collaboration literature which focused upon ways to help parties accept and engage with collaboration (e.g. Huxham and Vangen, 2005; Kanter, 1994; Ball, 1999; Mattessich et al., 2001). Much of the focus of collaboration literature however is upon preparing for, and managing collaboration, at the interface of collaborating parties (e.g. Nooteboom, 2004; Mattessich et al., 2001).

For those without a history of collaboration Mattesich et al., (2001) discuss the need for efforts to create an appropriate environment 'up-front'. Examples of such efforts include educating participants with respect to the purpose and benefits of collaboration (Mattesich et al., 2001) in addition to creating a sense of legitimacy for the collaborative effort (Trubowitz and Longo, 1997). As these findings suggest however, teams' sense of creating an appropriate environment 'up-front' revolved around team-level concerns including concerns with past events and experiences, rather than the dyad-level focus of SI leader and project facilitators' sensegiving efforts in relation to the events and

circumstances of collaboration. Furthermore, from these findings it is evident that creating a sense of the *purpose* and *benefits* of collaboration within the teams took time. It required teams to firstly perceive a reason or need to revise their initial ways of thinking and working in order to become more 'open' to experiencing the purpose and benefits of collaboration, and to making sense of what these meant for the team. Whilst information, instruction, assistance, and support were made available to the teams, these sources did not trigger teams to revise their initial concerns. Instead, past events and circumstances proved much more influential upon the initial sense that teams made. In turn, although initial management expectations resulted in teams attending the launch and introductory meetings, they still constructed 'their own sense of things'. In contrast, management approaches such as emphasising expectations and exerting pressure around team responsibilities were effective in inciting these teams' to engage differently with the project. Although these efforts did not generate any noteworthy engagement with collaboration they helped teams to begin to revise their initial ways of thinking and working.

Huxham and Vangen (2005) suggest balancing facilitative and directive leadership roles as helping to drive the collaborative agenda. As discussed in the preceding section, these findings support this observation suggesting 'pragmatism' in this context is focused upon leveraging more conventional team concerns and responsibilities to help teams 'break-out' of their old ways of thinking and working. In contrast however, these findings indicate that teams sought to make sense of certain aspects of collaboration i.e. the purpose of collaboration and the intentions and the role of the dyad partner team before any considerable change in their efforts to collaborate with the dyad partner team was noticeable. Making sense of these particular aspects of collaboration required the teams to *experience* the value and benefits of collaborating with the dyad partner team. Managing in a more facilitative capacity, these finding suggests the potential value from creating opportunities around which teams can directly experience events and circumstances of collaboration which help them make sense of its purpose and benefits. In the context of this study, these experiences related to events and circumstances which disconfirmed previous interpretations of working with the dyad partner team and generated real improvements in day-to-day operations and in the relationship with the dyad partner team.

These findings suggest that those concerned with facilitating understanding and acceptance of collaboration need to therefore focus, not solely on ways to build new interpretations of

collaboration, as reflected in the launch and introduction of this project, but also upon ways to explore and help to revise established histories between the teams. Creating an appropriate environment for collaboration between these teams required an understanding of the old environment between the teams. Understanding 'old interpretations' may provide management and / or facilitators with some direction for sensegiving efforts. Managers may focus on trying to access and manage team assumptions, creating targeted opportunities to explore justifications for traditions, beliefs, and perceptions relating to outcomes of prior actions and performances, as influence team interpretations. Such efforts may help teams to recognise assumptions and patterns in their thinking and behaviours or provide some direction for management sensegiving efforts, promoting team 'buy-in' through the promise of an opportunity to improve upon past experiences through collaborating. Alternatively these efforts may generate some insights for managers into particularly challenging or even unsuitable dyad pairings for collaboration.

In addition, these findings suggest the need to initially focus as much, if not more so, upon team-level concerns rather than dyad-level issues. This should include a focus upon, not only 'what collaboration is' but also upon 'what collaboration is not'. This may require an initial trade-off between managerial and team priorities, although findings in this study suggest that managers should caution against too much emphasis on gaining 'buy-in' at dyad-level if the consequence is 'opt-out' at team-level, particularly as this response may not become apparent for some time. For example, the 'appearance' of collaboration progress may mask subtle blocking behaviours, as was the case in arose within teams in this study.

In addition, management needs to recognise the power of 'recipient narratives' such as rumours, stories, and speculations to influence intended meaning (Brown and Humphreys 2003). Studies on sensemaking suggest informal processes including stories, gossip, etc. can have a mediating effect on change outcomes (Isabella, 1990; Labianca et al., 2000). In a study of middle manager sensemaking with respect to strategic change Balogun (2006) observes that vertical and lateral processes of sensemaking exist with managers drawing upon both these vertical, and often more formal approaches, but also lateral and often more informal approaches. As the findings in this study indicate however, during the initial stage (T1), team sensemaking revolved around these lateral, informal processes at team-level despite the vertical and formal sensegiving efforts of management and project facilitators.

As discussed in Section 2.8, much of the focus of sensemaking research is on the individual (e.g. Gioia and Chittipeddi, 1991; Gioia and Thomas, 1996; Thomas et al., 1993; Barr, 1998; Balogun and Johnson, 2004, 2005). With the focus in this study on the collective 'team-level' however, there is a suggestion that perhaps initial sensegiving efforts of management are also limited by the option that individuals, as members of a team, have in looking towards fellow team members in order to try and make sense of the events and circumstances unfolding. In this way, in contrast to more readily drawing upon information and evidence relating to events at hand (Isabella, 1990; Balogun and Johnson, 2005) perhaps individuals as part of a team are less likely to perceive the sensegiving influences of others 'outside' the team e.g. managers and facilitators. Their search for meaning may be more easily 'satisfied' by having 'ready' access to fellow team members, in contrast to later stages in this study where team sensemaking opened up to a broader range of influences as teams looked to influences outside and beyond the team to make sense of events and circumstances they were encountering. This suggests an interesting opportunity for further research, exploring the intra-subjective (individual) level with a view to understanding the sensemaking-sensegiving dynamics *between* team members. These sensegiving limitations of management (vertical) can also be understood whereby teams engaged in a variety of sensemaking processes without reference to management including stories, rumours and speculations at team-level, dyad-level and amongst peers.

Whilst recognising transition may take time, understanding and managing initial influences on sensemaking may help to accelerate the revision of old, and building of new, interpretations. Addressing team concerns and managing assumptions may be improved by managers' efforts to make as much information and concrete facts available as soon as possible in order to address and indeed perhaps influence initial rumours, stories, and speculations. Such evidence and facts may relate to more 'accessible' examples of improvements and benefits for teams in, for example, day-to-day operations. Additionally, as identified in this study, addressing 'what collaboration is not about' e.g. to 'impose change' or 'gain control of operations', may also resonate more readily with teams. Examples, evidence, and facts, even used indirectly, may help to stem initial rumours and speculations. Additional management efforts may focus on exploring team perceptions relating to the benefit of maintaining existing ways of working versus changing these ways, perhaps even before collaboration is announced. This may make teams feel part of the process defining the vision, transition, and likely outcomes of collaboration, and indeed

of the decision to pursue a strategy of collaboration, rather than on the receiving end of these decisions thereby having to make sense of what these might mean for the team.

Beyond the initial T1 stage and drawing upon findings with respect to triggers and influences on interpretations and actions *over time,* findings suggest managers may continue to focus on generating and highlighting evidence and experiences which 'resonate' with the teams. Leveraging team concerns with respect to familiar aspects of their work e.g. management expectations, performance responsibilities and reputation may provide a means to initiate reflection and move teams towards questioning their initial assumptions. As these findings suggest, where 'once familiar' approaches and solutions are perceived by teams to 'no longer work', the search for meaning is triggered, which may open up team sensemaking to a broader range of influences. Triggering a sense of the need to question and to revise initial assumptions about ways of thinking and working may help to accelerate team efforts towards engaging with opportunities to experience new the value and benefits of collaboration. Leveraging teams' sense of concern with responsibilities and existing commitments may also offer a platform from which old assumptions may be more readily challenged, and interpretations and actions revised. Managers again however need to again caution against leveraging familiar concerns which prioritise operational improvements if doing so results in teams perceiving the drawbacks and disadvantages of collaboration e.g. management pressures on performance, as outweighing potential benefits. In addition, it is to be noted that managers in this study did not similarly execute targeted efforts to emphasise relational improvements at this (T2) stage. Doing so may create an interesting basis for comparison in terms of the influence upon team sensemaking towards revision of previous interpretations and actions, again suggesting an interesting opportunity for further study.

6.6.2 Management, Peer and Dyad Partner Influences

The potential for different levels of influence on team sensemaking found in this study i.e. from management, peers, and the dyad partner team are consistent with other studies which show influences shaping the interpretations of others (Isabella 1990; Poole and Van de Ven, 1989; Gioia and Chittipeddi 1991; Labianca et al., 2000). Particular to team sensemaking within this context however, these findings reveal the *level* and *nature* of the sensemaking influence. As introduced in Section 1.4, a variety of influences, some more

powerful than others, may act upon sensemaking for example, symbols, metaphors, actions, influence relationships, and political structures. Findings in this study reveal the influence of managers, peers, and dyad partners in these buyer-supplier team contexts. Findings with respect to management's initial sensegiving efforts however suggest that these teams acted as 'agents' constructing their own versions of what the vision, transition and likely outcomes of collaboration meant, rather than accepting versions offered by management. As introduced in Section 1.5.1, different stakeholders across different organisational levels may represent different concerns, understandings, priorities, and paradigms from each other, with the possibility for gaps to arise in understandings and interpretations of change events across organisational levels (e.g. Balogun et al., 2003; Weick et al., 2005). These findings suggest management's initial sensegiving efforts did not resonate with teams or address issues around which they initially sought meaning or understanding i.e. what collaboration meant for the team and for existing operations and relations. Following revision of initial team interpretations, triggered by project-related evidence, teams sought to make sense of what initiative outcomes and findings meant for them. Here, management did act to influence team sensemaking emphasising the performance and achievement of operational improvement goals. In addition, findings reveal alternative management agendas operating within the smaller supplier firms SU A and SU B. These 'alternative agendas' related to leveraging any goodwill accruing from agreeing to participate in the project, in order to secure future contracts from the SI firm. This resulted in competing agendas between SU management and teams, initially influencing, and ultimately competing with, the sense that SU teams made of the benefits and drawbacks of collaboration.

As further revision of interpretations was triggered by subsequent team experiences of collaborating with the dyad partner firm, teams sought to make sense of what these experiences meant for them. Key influences at this stage include the dyad-team, peers, and again management, as teams' search for meaning and understanding broadened to reflect the broadening range of experiences they were encountering and seeking to make sense of. Whilst this search for meaning by the teams suggests a potential sensegiving opportunity which may be leveraged, it also suggests the potential for unwanted influences on team sensemaking. In these teams, peer feedback and support for team performance and improvements helped team deliberations with respect to the benefits versus the drawbacks collaboration. This influence emerged where peers were drawn

into proceedings via the need for them to give expert advice or where management and teams shared and discussed their progress within the firm. Accordingly, as a source of influence which resonated with teams in their search to make sense of their experiences, it suggests peers may be actively leveraged by management as a positive source of influence. The value of creating sensegiving 'opportunities' by bringing together those parties which share a similar sense of the vision, transition and likely outcomes of collaboration may be worth exploring, for example presentations and discussion sessions as arose within the cases in this study. Management may also wish to actively explore any alternative views, stories, rumors, etc. that are circulating within the organization, and to manage these accordingly. In addition, management may wish to intervene in sensemaking at a level beyond that of the team, again making information and concrete facts available to peers as soon as possible. In the absence of such efforts by management, peers may act to influence team sensemaking in unintended or unwanted ways with the result that sensegiving efforts of management may compete with, or be undermined by, those of peers.

These findings also suggest the sensegiving influence of dyad partner teams, as teams sought to make sense of the events and circumstances they were *experiencing* with these partner teams. These events and circumstances arose through shared discussions and actions with the dyad partner team, which caused teams to revise previous interpretations and actions. It was necessary for these teams to 'experience' directly the events and circumstances which served to disconfirm their previous interpretations, with teams making sense of these events and circumstances 'with' the dyad team. As discussed in the preceding section, creating opportunities around which teams can directly experience events and circumstances may help to accelerate the process by which teams begin to revise initial interpretations and come understand and accept the vision, transition and likely outcomes of collaboration intended by management. In addition, creating opportunities for teams to make sense with the dyad partner team, as were central in this study, may accelerate the sensemaking process. In this study, team sensemaking processes at the dyad-level revolved around written and verbal communication, and in particular face-to-face meetings including negotiations, decision-making, and behaviour and action signals. Leveraging these insights may provide management with a clearer understanding of the means available to progress understanding and acceptance of collaboration, in addition to an understanding of those influences which may hinder this process.

6.6.3 Managing Success Factors for Sensemaking

Chapter Two reviewed a range of factors considered to influence successful collaboration including communication, membership, processes, structures, environment and resources (e.g. Nooteboom, 2004; Huxham and Vangen, 2005; Mattessich et al., 2001; Liedtka, 1996). These factors were also discussed in Chapter Two as possible events and circumstances triggering discontinuities around which teams may need to make sense. Against the backdrop of such an extensive range of success factors the findings in this study help to provide some insight into those factors impacting collaboration between these buyer-supplier parties, in addition to the *temporal relevance* of those factors during the initial stages of transition towards understanding and accepting collaboration.

These findings suggest initial sensemaking in these teams revolved around making sense of the *purpose* and also the *intentions* and *role* of the dyad team. Section 3.2 described sensemaking at the inter-subjective level as including verbal and written communication, which may be formal or informal in nature, including negotiations and decision-making, in addition to stories, rumours, gossip, jokes, and behaviour and action signals (Isabella, 1990; Gioia and Chittipedi, 1991; Gioia and Thomas, 1996; Poole and Van de Ven, 1989; Labianca et al., 2000). Findings reveal that team sensemaking initially revolved around verbal communication with particular emphasis upon face-to-face meetings.

Team sensemaking was initially triggered by the launch and introduction to the project. As described in Section 4.6.3 the launch and introduction presented collaboration as an opportunity for each firm and each team to benefit from strategic and relational improvements, with emphasis placed upon how teams would work together. Teams were encouraged to identify roles; share responsibilities; communicate openly to define and plan initiatives; engage in activities required to achieve goals and objectives; and reflect upon their progress to date with a view to continuously improving via collaborative activity. At this initial stage however, teams felt the need to make sense of 'what collaboration meant for the team' in terms of existing operations and relations. As indicated in Chapter Five, these initial concerns typically related to the purpose of collaboration and the intentions and role of the dyad partner team with examples including concerns around project purpose, concerns with increased demands on resources, concern with the possibly of SI teams assigning blame and responsibility, concern with loss of control and power, concern with unwanted changes being imposed upon then team, and concern with possible

consequences for current operations of increased visibility of shared systems and processes.

Although teams engaged in the initial project launch and attended presentations and initial dyad-level meetings, making sense of what collaboration meant for the team revolved around team-level communications including stories, rumors and speculations, and also around behaviour and action signals from past events, and recent experiences of working with, the dyad team. The resulting vision, transition and likely outcomes of collaboration indicate a lack of engagement with collaboration at this stage with actions defensive and controlling in order to maintain business as usual with the dyad partner team.

Subsequent sensemaking was triggered by project evidence with teams focused upon making sense of what project findings and outcomes meant for the team. Sensemaking included verbal and written communications including project findings, project presentations and reports, and meetings with management. Management was also a key sensemaking factor at this stage, influencing teams' revision of their initial approach to the project towards focusing on achieving operational outcomes. Face-to-face meetings and workshops with the dyad partner team and with management were a key means by which teams made sense of these findings and planned and communicated changes in their initial interaction approach. In parallel to offering means *for* making sense, teams were also making sense *of* collaboration at this stage, with (as in the case of SU A and SU B) teams beginning to gain an emerging sense of the intentions of the dyad team and of the purpose of collaboration, albeit with respect to collaboration as important in terms of impacting current operations. Teams continued however to seek an understanding of what, for example, power-sharing, resource-sharing, increasing visibility of shared systems and processes, and increased sharing of information would mean for them. The vision, transition and likely outcomes at this stage reflect this shift. Although limited, this stage begins to show an understanding of collaboration as enabling improvements, and begins to show teams' transition towards interaction at dyad-level with respect to improvement initiatives.

Subsequent sensemaking was triggered by experiences of working with the dyad team. Accordingly, teams sought to make sense of what improvements in their operations and relations meant in terms of benefits and disadvantages for the team and / or the firm. Sensemaking revolved around dyad-level meetings and discussions, project findings and

reports, meetings with management, and peer feedback. Examples of benefits or improvements, which teams sought to make sense of, include:

- increased understanding of dyad partner intentions and the purpose of collaboration;
- process improvements arising from the joint exploration of shared systems and processes between the teams;
- improved communication and information sharing between the teams including increased visibility of process owners and faster response times in decision making;
- changes in the power-balance between the teams;
- learning from the partner team's knowledge of shared and similar and processes;
- benefiting from actions, decisions, and improvements made by partner teams

Additionally, examples of disadvantages include:

- demands of collaboration;
- perceived lack of benefit or 'real' improvement in relation to team efforts and inputs; and
- management pressures

As these findings suggest, this was a key stage in teams' transitions towards understanding and acceptance of collaboration. As indicated in the analysis, this stage was 'itself' cyclical, with teams becoming increasingly involved at dyad-level as they began to engage in, and make sense of, the events and circumstances arising. With respect to the importance of success factors in this stage, findings suggest making sense of the purpose of the collaboration project and dyad team intentions initially dominated teams' sensemaking. In turn, making sense of purpose and intentions was strongly linked to teams' subsequent efforts to collaborate, with considerable changes occurring in the actions of those teams that were able to make sense of these. This was evident in Dyad A where both the SI and SU team began to perceive a clearer understanding of the value of the project and of the dyad partner's team intentions / role towards the end of the second interpretative stage / early in the third stage. Subsequently, as findings indicate, both of these teams made efforts towards collaborating with the dyad partner at the beginning of the third stage. This is similarly the case in Dyad B with evidence of collaborative actions emerging swiftly

following teams' understanding of the purpose of the project and intentions / role of the dyad partner team towards the end of the second / beginning of the third stage.

In contrast, SI C understood the purpose of the project for the benefit of the firm but failed to make sense of its' benefit for the team, or to make sense of the role of the dyad partner in generating improvements / benefits for the team. Accordingly, findings reveal the team perceived little benefit to collaborating with the dyad partner team and at the end of the project sought to not continue with further collaborative initiatives. In SU C, the team again made sense of the purpose of the project for the benefit only of the firm. Against the backdrop of the recent market downturn however, this proved sufficient to influence the team's ongoing participation in the project. In Dyad D, although teams began to make sense of the purpose of the project during the third stage they took much longer to understand the intentions and role of the dyad partner team. Accordingly, efforts to collaborate around the purpose of the project were not directed towards the dyad team but towards those parties perceived by these teams as important in contributing to the success of the initiative. Towards the end of the second initiative, as teams began to realise the value of relying upon, and working more directly with, the dyad partner team subsequent efforts to collaborate between these teams emerged.

These findings suggest that significant changes in action towards collaborating with the dyad partner team did not begin until interpretations of purpose and intentions had been constructed, and only where the resulting interpretations related to these being beneficial for the teams. These findings also suggest that, whilst changes in action were triggered by changes in interpretation, changes in action also triggered changes in interpretation, whereby experiences of interacting with the dyad partner team triggered team sensemaking, leading to a shift in interpretations. This evidence of moving 'back and forth' between action and interpretation has been proposed by sensemaking studies (Daft and Weick, 1984; Barr, 1998). In this study, it again underlies the emphasis placed earlier upon creating opportunities around which teams can directly experience events and circumstances to help accelerate the process by which teams begin to understand and accept the vision, transition, and likely outcomes of collaboration intended by management.

In parallel to making sense of these aspects of the collaboration process *with* the dyad team, team sensemaking at this stage revolved around face-to-face meetings, sharing

information, formal and informal communications, formalised roles and responsibilities, in addition to the sense of support and legitimacy offered by management and peers. This stage is therefore characterised by teams making sense 'of' collaboration, 'by' collaborating with the resultant vision, transition, and perceived outcomes again reflecting this shift.

The final acceptance stage is triggered by the need to make sense of project outcomes and of the end of the project. Sensemaking processes revolved around project findings and reports, face-to-face meetings with management, and also dyad-level discussions. Sensemaking concerns revolved around the future benefits of collaboration weighed against perceived future disadvantages, challenges, and complications of collaboration e.g. political and managerial pressures, conflict, and reliance upon management support for project success. In turn, sensemaking was influenced by the environment with respect to political and management support.

These findings suggest the importance of certain success factors during these initial and early stages of collaboration between these buyer-supplier parties. For example, addressing predispositions about themselves and others; managing assumptions and speculations around what collaboration means for the team; and explicating collaboration purpose through offering examples which teams can relate to, for example, day-to-day operational and relational benefits, may help the purpose of collaboration resonate more clearly and more closely with team concerns as they seek to make sense of collaboration. Additionally, addressing 'what collaboration is not' may help to address concerns relating to, for example, demands on resources, loss of control and power, and potential consequences of increased visibility of shared systems and processes between the firms. Additionally, these findings suggest efforts to explore assumptions held by the teams in relation to working with the dyad team members, and also in relation to the operational and relational history that exists between the teams may provide some insights for management sensegiving efforts or at least an awareness of potential issues which may need to be managed.

These findings also suggest that project evidence, specifically targeting team assumptions, may help teams to revise initial assumptions, triggering further sensemaking, and 'opening teams up' to additional influences, including the sensegiving

efforts of management and peers. This may help to trigger a revision in teams' initial approach to engaging with the project whereby teams seek a more formal and shared approach to collaboration. Changes in how teams engage with the project may create the opportunity for teams to learn 'what collaboration is about' and 'how to collaborate with the dyad partner team' in order to realise the benefits of collaboration.

As these findings also suggest, face-to-face meetings continued to provide management with an opportunity to monitor and subsequently attempt to influence the sense that teams made. Face-to-face meetings also offered the teams an opportunity 'to make sense' with management and dyad partners, as the events and circumstances of collaboration unfolded. Against the backdrop of a variety of possible forces and factors which may be leveraged to influence collaboration success, these findings suggest means by which unconstructive interpretations and actions may be targeted, and constructive behaviours and actions encouraged by management.

The sensemaking perspective on buyer-supplier collaboration in this study also provided insights into team sensemaking in relation to collaboration, differentiated between buyer and supplier teams. These findings are considered in the following section.

6.6.4 The Buyer-Supplier Context

The findings in this study provide insights into the challenges to and influences upon sensemaking in relation to buyer-supplier collaboration and insights into issues and concerns that may need to be managed or accommodated as part of the process. In addition, in exploring buyer and supplier team sensemaking, this study allows for consideration of similarities and differences in sensemaking, triggers, and influences between buyer and supplier teams. Although seen as lacking in buyer-supplier research, differentiating between buyer and supplier parties offers valuable insights into understanding the gaps that exist between the values and beliefs of buyer and supplier parties and how to build tighter linkages between them (e.g. Spekman et al., 1998).

Specifically findings reveal considerable similarities in the interpretations, actions, triggers and influences upon team sensemaking across these buyer and supplier teams. However, although buyer and supplier teams sought to make sense of the purpose of collaboration

and the intentions / role of the dyad partner team, the nature of assumed problems and opportunities ensuing, varied across the teams. For example, supply firms dependent upon the SI firm, and with little power in the relationship, were concerned with the demands of collaboration upon resources, with the potential loss of control and power through increased visibility by the SI of shared systems and processes, and with the additional intentions of the SI team to impose unwanted changes upon team operations. In addition, SU A, SU B and SU C teams' initial concerns were dominated by assumptions about the SI using the project to impose changes upon them. Significant shifts in how these teams engaged in collaboration were triggered by the subsequent disconfirmation of these concerns e.g. the shift in power balance between the teams and SI teams' internal changes helping SU teams to realise the benefits of collaboration and the 'actual' versus assumed intentions of the SI. Additional influences upon the SU included SI team and SI leader's expectations, perceived performance pressures, and also the perceived value of the project in helping the team to maintain their future relationship with the SI firm. These are again indicative of SU firm dependency upon the SI firm (SU A, SU B and SU C).

In the SI teams, examples of initial concerns related to the likely intention and willingness of the SU to engage with the project and also with exploiting the project for 'own gain' using the dominant position of the SI to impose changes upon the SU, and to minimise the impact of collaboration upon the SI. These concerns were reflected in SI team actions, including dominating proceedings and avoiding direct responsibility by assigning tasks to the SU teams. Notable changes in how these SI teams engaged in collaboration were triggered by their understanding of the purpose of the project and also the perceived value of the SU's role in helping to achieve improvements.

A further difference relates to management sensegiving in the SU firms, revolving around concerns with the demands of the project (SU A and SU B) but also with meeting management expectations (SU A, SU B and SU C). In contrast, management in SU D were 'hands-off' in their approach, supporting the team rather than trying to control or limit collaboration activities or force conformance to the SI firm's agenda. In turn, initial team concerns revolved around realising the opportunity to achieve improvements with the SI. These differing concerns and priorities would seem to reflect the Captive Supplier profile of Dyads A, B and C, versus the more strategic partnership profile of Dyad D.

In addition, findings reveal alternative management agendas operating within the smaller supplier firms SU A and SU B. These agendas related to leveraging the goodwill accruing from agreeing to participate in the project in order to secure future contracts with the SI firm. This resulted in competing agendas between management and teams, initially influencing, and ultimately competing with, the sense that parties made of the benefits and disadvantages of collaboration for the teams.

These findings provide insights into the complexities of managing and influencing sensegiving around collaboration within these teams. In particular, with respect to targeted sensegiving activities including managing rumours, speculations, and stories around 'what collaboration is' and 'is not', it suggests the need to perhaps target different concerns across the SI and SU teams making information, evidence and facts available as address or 'speak to' these different concerns. In addition, it suggests the need to perhaps manage sensemaking at the management level, particularly where management plays a central role in the activities, and in the social sensemaking processes, of the teams (as was the case with SU A and SU B in this study).

Finally, with respect to the buyer-supplier context, established working histories between the teams dominated the initial sensemaking lens of both buyer and supplier teams in this study. Furthermore, the prioritisation of operational over relational improvements suggests the influence of this commercial setting. Whilst understandable, as discussed in Section 6.6.1 managers need to caution against too much emphasis on operational improvements if doing so results in teams perceiving the disadvantages and drawbacks of collaborating e.g. encountering management pressures on team performance, as outweighing the benefits of collaboration.

Understanding the influences that acted upon team sensemaking in this study also allows for exploration of the influence of CO-IMPROVE. This is considered in the following section.

6.6.5 The Influence of CO-IMPROVE

As discussed in Section 4.6.3 the action learning approach within CO-IMPROVE was based upon Marquardt's (1999) six distinct components including:

- A problem;
- The group;
- The questioning and reflective process;
- The commitment to taking action;
- The commitment to learning; and
- The facilitator.

In considering the influence of CO-IMPROVE the following points are noted:

- The *problem* was the area of improvement selected by the teams, which teams identified as existing prior to the commencement of the project.
- The *group* concept applies to team-based interactions which were used commonly by these teams prior to the commencement of the project.
- The objective of the questioning and reflective process in CO-IMPROVE was to gain an understanding of what teams thought was working or not in their experiences of collaboration, rather than to influence their thinking, and therefore potentially their sensemaking in relation to this process. Accordingly, teams did not identify this questioning and reflective process as triggering or influencing the sense that they made of collaboration. As teams did engage in this process however it may be seen as offering a forum for teams to engage in rounds of negotiated social construction (Gioia and Chittipeddi, 1991) in making sense of collaboration.
- The *commitment to taking action* and *to learning,* were reflected in commitment at the firm-level to engage with the purpose of the project, and for the duration of the project, and therefore do not reflect team-level commitment. Accordingly, as these findings indicate, these teams did not perceive this initial managerial commitment as influencing the sense that they made.
- With respect to the *project facilitators,* although the launch and introduction stages of the project were attended by facilitators, teams did not identify these as a source of influence upon the sense that they made.

The findings in this study indicate that the structure of CO-IMPROVE was not perceived or identified by the teams as an influence on the sense that they actually made of collaboration. The structure of CO-IMPROVE, albeit the structure that teams agreed initially to adopt in working within the project, was subsequently adapted to suit their needs, although it did provide a forum for team sensemaking processes. Verbal communication through management and dyad-level workshops, and also written communication in the form of project findings, reports, and presentations enabled teams to, for example, share stories and rumours, engage in speculations with regard to collaboration, negotiate, make decisions and share information. These regular, face-to-face meetings also provided management with an opportunity to monitor and subsequently attempt to influence the sense that teams made. Project findings were not however generated by CO-IMPROVE, nor was the role of management dictated by CO-IMPROVE beyond the initial project launch and introduction. In addition the stories, rumours, etc. reflected team's own sensemaking agendas rather than any offered by CO-IMPROVE. Although it can be argued that the formal presentation of project findings may act as an influence on teams to collaborate (or not) findings in this study do not indicate this to be the case. Rather, they created an opportunity for teams to make sense around the events and circumstances that unfolded e.g. project evidence.

Varying the structured approach of CO-IMPROVE, whereby teams did not have an opportunity to make sense of verbal and written communications on a regular basis, may however impact the process. For example, teams may have taken longer or indeed have been unable to make sense of events and circumstances. The triggers and influences upon team sensemaking were not however 'due to' CO-IMPROVE. The exception to this was the close of the project which, by injecting a 'pause' into proceedings, triggered team sensemaking. As discussed in Section 1.3 a request to notice differences and to think about something in a new way provides deliberate initiative to begin sensemaking. The close of the project therefore suggests such a deliberate initiative although again, whilst triggering sensemaking, did not itself influence the sense that was made, and therefore the ensuing interpretations and actions. Varying the structure or indeed exploring different approaches may have implications for these findings however. It would be interesting to compare this situation with others where different approaches to the launch, introduction, structure and design were adopted. In addition, removing the opportunity for teams to engage in face-to-face meetings or varying the structure or frequency of monthly workshops and reports may again be considered by further research. In light of the objectives of this study to understand

'how' teams made sense of a strategy of collaboration, creating an opportunity for teams 'to make sense', and indeed to do so around collaborative efforts, seemed sensible. The absence or variation of these sensemaking opportunities may however provide an interesting opportunity for further research.

6.7 Contributions to Literature

This section addresses the contributions of these findings to literature on collaboration within the buyer-supplier setting, and also to literature on sensemaking.

6.7.1 Contributions to Literature on Buyer-Supplier Collaboration

The findings in this study indicate that the transition towards understanding and acceptance of collaboration in these teams can be understood as an interpretative process. The above analysis demonstrated a sequence of four distinct stages which capture the evolving interpretations and actions of collaboration in the buyer and supplier teams in this study. In addition it suggested a pattern of interpretation development differentiated between familiar and unfamiliar aspects of collaboration, past and present events and circumstances, and initially dominated by team-concerns. Furthermore, analysis revealed the sensemaking triggers, influences, and sensemaking processes that teams engaged in as they revisited and revised existing interpretations of collaboration and moved from one interpretative stage to the next. This allowed an understanding of the 'actual' triggers and influences that addressed team concerns towards understanding and acceptance of collaboration. The sensemaking perspective on buyer-supplier collaboration provided an insight into teams' concerns and sensemaking processes, differentiated between buyer and supplier teams, and across the initial stages of collaboration. Differentiating between buyer and supplier parties within the supply chain is recognised as providing valuable insights and opportunities to enhance supply chain relationships (Spekman et al., 1998).

These findings indicate that helping parties to understand and accept a collaborative way of working is confounded by the active role that parties play in constructing their own sense of what collaboration may mean. In addition, Chapter One noted the variety of possible influences on sensemaking that may arise within a context of change. These findings

reveal the source and nature of the most powerful influences on buyer and supplier team sensemaking in relation to the process of collaboration as it unfolded.

Collaboration literature emphasises facilitating and influencing parties' involvement in collaborative activities (e.g. Nooteboom, 2004; Huxham and Vangen, 2005). The findings in this study suggest the nature of those activities which may help to trigger and influence this involvement between buyer and supplier parties towards understanding and acceptance of collaboration. Against the backdrop of success factors identified in Chapter Two as possibly influencing collaboration success, these findings help to contextualise these factors with respect to collaboration between buyer-supplier parties. The multiple levels of influence including management, peers and the dyad partner team, in addition to the nature and implications of these influences, are identified in this study. With respect to the emphasis in collaboration literature placed upon managing collaboration as a participative process (e.g. Gray, 1995; Rubin, 1998; Huxham and Vangen, 2005) these findings suggest effective ways of enacting a participative approach that may prove meaningful and relevant within the buyer-supplier context. In addition (Huxham and Vangen, 2005) consider the need to balance the ideology of collaboration with a more pragmatic approach towards ensuring progress in the collaborative effort. The findings in this study suggest the nature of these more 'pragmatic efforts', with a sensemaking perspective providing an understanding of those triggers and levers perceived as influences upon the progress of collaborative initiatives between these buyer and supplier teams. The sensemaking perspective also reveals the range of social processes that teams engaged in as they tried to make sense of collaboration. Consistent with other studies of social sensemaking during change processes (Balogun and Johnson, 2004; Isabella, 1990; Labianca et al., 2000), interpretations of collaboration within these buyer and supplier teams appear to be influenced by formal and intended communication and social interaction processes, in addition to informal processes in the form of stories, rumours, and speculation which appearing to initially dominate team sensemaking.

These findings also begin to capture some of the complexities of buyer-supplier collaboration, revealed through teams' sensemaking as they encountered and tried to make sense of collaboration. In addition, findings suggest differences in sensemaking across buyer and supplier teams, as revealed through the focus upon both buyer and supplier perspectives in this study. As Wilding and Humphries (2006) conclude, research sheds

only limited empirical light on the development and management of collaborative supply chain relationships. A sensemaking perspective provides a lens to better understand how and why understandings around the vision, transition and likely outcomes of collaboration within these buyer-supplier teams emerged as they did, and what may be done to encourage or redress these understandings.

In addition, looking at the triggers of, and influences upon collaboration over time, allowed an understanding of the *temporal relevance* of these as the process of collaboration unfolded. These findings provide insights for those concerned with facilitating understanding and acceptance of collaboration between buyer-supplier firms. In turn, this understanding and acceptance of collaboration can be seen in terms of teams' evolving sense of the vision, transition, and likely outcomes of collaboration over time, which relates to:

- team concerns varying in nature over time, and biased toward familiar concerns and actions;
- the need to manage old and new interpretations simultaneously;
- the need to perhaps explore and address established histories between the teams;
- the need to address key concerns e.g. purpose and intentions / role of the dyad partner team towards generating action;
- the need for more targeted use of sensegiving efforts; and
- leveraging influences on team sensemaking toward facilitating understanding and acceptance of collaboration e.g. peers, face-to-face meetings, informal processes

6.7.2 Contributions to Literature on Sensemaking

The objective of this study was to explore how buyer and supplier parties made sense of collaboration using a sensemaking perspective to understand how and why interpretations and actions evolve over time. Accordingly, this study sought to provide insights for those concerned with managing and influencing sensemaking in relation to the process of collaboration. This study therefore draws upon a sensemaking perspective for the purpose of gaining insights specifically into how parties engaging in collaboration make sense of this

process. This research supports the contentions of studies focusing upon evolving interpretations during change processes (Weick and Daft, 1983; Isabella, 1990; Gioia et al., 1994), in particular the notion that "construed realities constantly change as new facts arise and new questions are asked" (Isabella, 1990:31). It addition, findings relating to the first research question in this study suggest interpretations of collaboration evolved across a series of distinct interpretative stages. This stage-approach supports the contentions of other sensemaking models for example, Isabella (1990) and Barr (1998).

A number of differences exist however between this and other studies which focus upon sensemaking and change. Firstly, the strategic change in this case is collaboration, and the events and circumstances of the collaboration process which teams sought to understand in a way that made sense to them. Secondly, in related studies linking interpretation to change the focus is typically upon the individual level of top managers (e.g. Gioia and Chittipeddi, 1991; Gioia and Thomas, 1996; Thomas et al., 1993; Barr, 1998) whereas this study focused upon those engaged centrally in the process of collaboration including organisational members from purchasing management, materials management and supply management departments. In addition, the focus of this study was on the collective level. Finally, this study sought an understanding of how sensemaking evolved in relation to the process of collaboration, itself evolving over time. In particular, this study focused upon the initial and early introductory stages of buyer-supplier collaboration which suggested themselves as key sensemaking stages whereby the events and circumstances of collaboration were considered new and unfamiliar to the teams.

Although the objective of this study was not specifically to explore patterns of interpretations and the significance of these for the strategic response of the firm, a number of observations may be made with respect to the pattern of interpretations of collaboration sensemaking in this study. In accordance with Isabella's (1990) study, the findings in this study suggest the teams underwent shifts in interpretations as events and circumstances evolved. These stages differ however from those observed in Isabella's study in relation to the nature of the stages (namely from assumption to assessment to deliberation to acceptance); the bases for interpretation (or what Isabella describes as the frame of reference); the initial influences on interpretation; and also the personalisation of triggers (in light of the differing focus of these studies i.e. individual versus team).

The pattern of interpretations of *unfamiliar* events and circumstances in this study is however consistent to that found in Isabella's study i.e. moving from vague generalisations to increasingly more detailed and specific interpretations over time. Isabella's study suggests this move from vague to specific is driven by the increasing availability of information on the nature of the event and its impact. The concept of 'unfamiliar event' in this study relates to that of collaboration purpose for the buyer and supplier teams as discussed in Section 6.6. In contrast to Isabella's study however, the findings in this study suggest that interpretations of the purpose of collaboration evolved, not driven by the increasing availability of information, but by 'experiencing' what it meant to collaborate, in particular toward understanding the meaning and purpose of collaboration.

In parallel however, this study found that the pattern of interpretations of *familiar* events was 'in part' consistent with Barr's (1998) study. Barr's study found that initially familiar or well-defined interpretations were replaced over time as the *meaning and purpose* of the change emerged. The concept of *familiar* in this study related to working with the dyad partner team. Interpretations of such 'familiar events' in these teams were driven by an increased understanding of the intentions and role of the dyad partner team. This seems consistent with the notion of 'purpose' in Barr's study whereby teams revised their initial interpretations of the dyad partner team as they began to experience a value or *purpose* in doing so. However the forces of *meaning* and *purpose* can also be seen to be perceived by the teams in this study as significant in driving interpretations of *unfamiliar* events i.e. the concept of collaboration and what it means to collaborate with the dyad partner team.

As stated, although the objective of this study was not to explore patterns of interpretations, these observations may be understood in light of findings which suggest teams' sensemaking around the familiar and unfamiliar was 'intertwined' whereby teams began to make sense of the meaning of collaboration, and the purpose of doing so *with* the dyad team, through 'experiencing' meaning and purpose via interactions with the dyad partner. In essence this also underpins the concept of collaboration whereby collaboration is a way of working with another party to achieve goals together that cannot be achieved, or achieved as successfully, apart.

The pattern in this study may also perhaps be accounted for by the collective versus individual focus. In particular, as discussed in Section 6.1, the collective team level may suggest parties as less likely to notice outside influences in light of the more immediate team environment for sensemaking. In this way, in contrast to more readily drawing upon information and evidence relating to events at hand (Isabella, 1990; Balogun and Johnson, 2004) individuals as part of a team may be less likely to perceive these influences. Again however this suggests an area for further research.

In addition to these differences it is also interesting to note the similarities with other studies (Isabella, 1990; Barr, 1998; Balogun and Johnson, 2004) in terms of *evolving interpretations* drawing upon *prior, present and emerging realities* and with *evolving interpretative tasks,* albeit in different ways, in different sequence, and with different interpretative tasks. In addition, this study shows the links between interpretations and actions and discusses the cyclical process between interpretations and actions whereby interpretations influenced actions in addition to actions influencing interpretations. This "cycling back and forth between interpretation and action" (Barr, 1998:664) is proposed by proponents of a sensemaking approach to the study of organisational change. In the context of this study it provides insights into the interpretations that trigger action, including collaboration, in addition to the actions that influence interpretations. As discussed, this understanding provides insights for those concerned with managing and influencing sensemaking towards understanding and acceptance of collaboration. Managerial implications are considered in the following chapter.

In light of these findings and discussions, Chapter Seven will present a summary of this study's contributions to literature and practice, in addition to implications and recommendations for management. Limitations of this study and opportunities for future research will also be considered.

6.8 Conclusion

This chapter addressed the research questions in this study explaining and providing insights into the sensemaking-sensegiving dynamics of collaboration between buyer and supplier teams. This chapter was structured around seven sections. *Section 6.1* provided an

overview of the structure of this chapter. In preparing to address the first research question, *Section 6.2* analysed evolving interpretations of collaboration in these buyer-supplier teams, in addition to the triggers and influences underpinning their sensemaking processes. Based upon this analysis, *Section 6.3* addressed the first research question in this study. In preparing to address the second research question in this study, *Section 6.4* analysed the actions accompanying these evolving interpretations of collaboration with *Section 6.5* addressing the second research question. *Section 6.6* presented a discussion of these findings with respect to buyer-supplier collaboration, in addition to offering insights for more effective facilitation of understanding and acceptance of collaboration between buyer-supplier teams. Finally, *Section 6.7* presented contributions of these findings for both collaboration and sensemaking literature.

CHAPTER 7: A SENSEMAKING PERSPECTIVE ON BUYER-SUPPLIER COLLABORATION

7.1 Introduction

This final chapter presents a summary of the contributions of this thesis to both knowledge and practice. In addition it considers the limitations of this research and also recommendations for future research. *Section 7.2* presents a summary of the findings in this thesis. *Section 7.3* presents a summary of the thesis' contributions to literature. *Section 7.4* presents the implications of the findings in this thesis for management practice. *Section 7.5* outlines the limitations of this thesis and considers future opportunities for research. Finally, *Section 7.6* concludes this chapter.

7.2 Summary Findings

The findings in this study show how understanding and acceptance of the vision, transition, and likely outcomes of collaboration within these buyer-supplier teams can be understood as an interpretative process. The mediating role of sensemaking, in addition to forces which triggered and influenced interpretations of collaboration in these buyer and supplier teams were made explicit. Accordingly, interpretations and actions were the result of the way each team 'itself' made sense of the events and circumstances of collaboration and the triggers and influences it perceived. The value of the model in Figure 6.1 lies in its explanatory power, with the sensemaking perspective explaining how and why these teams moved towards an understanding and acceptance of collaboration during the initial and early stages of collaboration between these teams. In addition, Figure 6.2 presented the cyclical sensemaking dynamics in relation to collaboration between these buyer-supplier teams. This allowed for an understanding of actual outcomes relative to those planned for and intended by the sensegiving efforts of management and also project facilitators. Findings also indicated opportunities for management to influence the sense that parties made, in addition to challenges or limitations to managerial sensegiving efforts, with respect to collaboration.

7.3 Summary Contributions to Literature

The findings of this thesis were evaluated in Chapter Six in light of their contributions to literature. In summary, this thesis contributes most notably to the existing knowledge base within the fields of collaboration, the buyer-supplier context for collaboration, and also sensemaking literature as considered in the following discussions.

Collaboration Literature

As discussed in Section 6.6, collaboration literature recognises that those engaged centrally in the collaborative effort play a key role in ensuring the success of collaboration (e.g. Liedtka, 1996; Mattessich et al., 2001; Nooteboom, 2004) with an extensive body of literature dedicated to identifying influences upon the success and failure of collaboration. In particular, collaboration literature recognises the management and leadership of collaboration as a participative process, emphasising skills and approaches to gaining participation, motivation, commitment, and consensus of stakeholders involved in the collaborative effort (Mattessich et al., 2001; Liedtka, 1996; Huxham and Vangen, 2005). Despite these observations, an understanding of collaboration from the sensemaking perspective of those parties engaged centrally in this process has not been explicitly considered. The sensemaking perspective in this study offered insights into enacting a more participative approach, suggesting means to understand and gain access to concerns and conversations of collaborating parties. The sensemaking perspective also allowed for an understanding of those activities which helped to trigger and influence the *involvement* of those parties engaged centrally in collaboration and considered central to ensuring its success. Recognising the need to perhaps balance the ideology of collaboration with a more pragmatic approach towards ensuring progress in the collaborative effort (Huxham and Vangen, 2005) the sensemaking perspective allowed for an understanding of what triggers and levers may be used to generate progress within collaboration.

Buyer-Supplier Collaboration

As a complement to the extensive understanding within collaboration literature of efforts to prepare for and manage collaboration at the interface of collaborating parties (e.g. Nooteboom, 2004; Mattessich et al., 2001) this study provided insights into key concerns that needed to be addressed within buyer and supplier firms and at the distinct level of the buyer and supplier teams central to undertaking the collaborative initiatives within this

study. In addition, it provided insights into the sensemaking processes of these teams *over time.* The findings revealed the range of social processes that these teams engaged in as they tried to make sense of collaboration. Consistent with other studies of social sensemaking during change processes (Balogun and Johnson 2005; Isabella 1990; Labianca et al., 2000), sensemaking within these buyer and supplier teams was influenced by formal and intended communication and social interaction processes, in addition to informal processes in the form of stories, rumours, and speculation, with these informal processes appearing initially to dominate.

With respect to the collaborative buyer-supplier relationships explored in this study, multiple *levels* of influence - including management, peers, and the dyad partner team - in addition to the *nature* and *implications* of these influences for team interpretations and actions, were identified. The potential for different levels of influence on team sensemaking found in this study are consistent with other studies which show influence relationships shaping the interpretations of others (Isabella 1990; Poole and Van de Ven, 1989; Gioia and Chittipeddi 1991; Labianca et al., 2000). Leveraging these insights with respect to managing buyer-supplier collaboration can provide management with a clearer understanding of the means available to progress understanding and acceptance of collaboration in addition to understanding those influences that may hinder this process.

The sensemaking approach in this study also suggested a means to understand the sensegiving limitations of management, whereby teams in this study engaged in a variety of sensemaking processes without reference to management including stories, rumours, speculations, and at team-level, dyad-level and with peers. In addition, in contrast to sensemaking studies which suggest initial sensemaking around change draws upon information and evidence relating to events at hand (e.g. Isabella, 1990; Balogun and Johnson, 2005) this study found that similar sensegiving efforts by management - making information and assistance available to teams in relation to collaboration - were limited. Rather, the findings in this study suggested sensemaking processes at the collective team-level may differ from those of the individual, suggesting an area for further study.

Chapter Two reviewed a range of factors considered to influence successful collaboration including communication, membership, processes, structures, environment and resources (e.g. Liedtka, 1996; Nooteboom, 2004; Mattessich et al., 2001; Huxham and Vangen, 2005).

These factors were also discussed in Chapter Two as possible events and circumstances triggering discontinuities around which teams may need to make sense. The findings in this study provided an insight into those factors impacting collaboration between these buyer-supplier teams, in addition to the *temporal relevance* of those factors during the initial stages of transition towards understanding and acceptance of collaboration.

The sensemaking perspective on buyer-supplier collaboration in this study also provided insights into team sensemaking, differentiated *across* buyer and supplier teams. Although seen as lacking in buyer-supplier research, differentiating between buyer and supplier parties offers valuable insights into understanding the gaps that exist between the values and beliefs of buyer and supplier parties and how to build tighter linkages between them (e.g. Spekman et al., 1998). The findings of this study provided insights into challenges and influences with respect to managing the buyer-supplier context for collaboration. In addition, in exploring buyer and supplier team sensemaking, this study allowed for consideration of similarities and differences in sensemaking, triggers, and influences across buyer and supplier teams. These findings provided insights into issues and concerns that may need to be managed or accommodated as part of the process.

Sensemaking Literature

This research supports the contentions of studies focused upon evolving interpretations during change processes (Weick and Daft, 1983; Isabella, 1990; Gioia et al., 1994; Barr, 1998; Balogun and Johnson, 2005). In addition, as part of the findings relating to the first research question in this study, it suggested interpretations of collaboration evolved across a series of distinct interpretative stages. Similarities and differences between this pattern and those of other sensemaking studies were considered in Section 6.7.2. Similarities with respect to other studies (e.g. Isabella, 1990; Barr, 1998; Balogun and Johnson, 2005) in terms of *evolving interpretations* drawing upon *prior, present and emerging realities* and with *evolving interpretative tasks,* albeit in different ways, in different sequence, and with different interpretative tasks were noted.

In particular however it was observed that the unit and level of analysis, in addition to the nature of the change event being considered, varied in this study (i.e. teams engaged directly in executing a strategy of collaboration) from most studies focusing on sensemaking and strategic change (e.g. Gioia and Chittipeddi, 1991; Gioia and Thomas,

1996; Thomas et al., 1993; Barr, 1998). The differences in the sensemaking processes of the teams in this study, and also in the pattern of interpretation development within these teams, may be understood through further research – particularly in relation to sensemaking with respect to the unit and level of analysis in this study, and also the sensemaking occasion of collaboration.

7.4 Recommendations for Managers

For those concerned with managing, influencing, and facilitating understanding and acceptance of collaboration these findings suggest an effective approach is one that recognises and incorporates the interpretations of those parties engaged centrally in this process, as part of managing plans, events, actions and outcomes. In particular, this requires recognising the variety of influences that may act upon the sense that is made as the process of collaboration unfolds. It suggests the need to understand that the sense parties 'themselves' make of events and circumstances of collaboration may vary from that intended or expected by management. Managers need to understand that their role is about working with this 'reality' of sensemaking, in particular with respect to both the pre-existing and emerging contexts of collaborative action.

This thesis provides some direction for management efforts, and how the nature and focus of these efforts may need to change over time. Managing collaboration requires ways of accessing interpretations; understanding key concerns affecting sensemaking (and which may not be apparent as part of preparation and planning for collaboration); understanding and working with triggers and influences; and recognising that sensemaking occurs within, but also outside of, and perhaps beyond the reach of formal discussions and information sharing. In addition, these findings suggest a number of interpretative tasks for managers engaged in the collaboration process, proposing a changing role for managers across the interpretative stages of collaboration.

In particular, initial efforts may include realising the variety of competing team-level concerns; exploring pre-existing interpretative schemes; targeting old, in addition to building new, interpretations; and understanding the significance of established histories between the teams. Whilst the researcher's role in this study allowed ongoing access to team

sensemaking, managers need to consider ways in which they may access, understand, and try to address team interpretations. Although collaboration may happen around a variety of, often less-than-ideal structures, these findings suggest creating sensemaking opportunities, and participating in these, may provide managers with a better opportunity to influence sensemaking. Reflecting on the social sensemaking processes, and influences acting upon these within this study, managers need to engage in conversations around the events and circumstances that unfold and that teams perceive as important or relevant to them.

Creating opportunities for teams to make sense, and for managers to engage with team sensemaking e.g. face-to-face meetings, workshops, and informal discussions may assist this process. Leveraging informal sensemaking processes to become 'a part of' team sensemaking suggests a means to better understand but also to influence the sense that parties make. Engaging with the sensemaking processes of the teams e.g. managing rumours, stories and speculations, and engaging in informal sensemaking processes, may offer opportunities to better understand and manage interpretations, actions and influences acting upon these. Creating targeted opportunities for discussion e.g. around established histories or rumours that are circulating, or generating experiences that help to disconfirm old and create new interpretations may help to accelerate this process. Recognising that gaining access to such informal and lateral sensemaking processes within teams (e.g. stories, rumours, jokes, etc.) may however prove challenging for managers, this role may alternatively or additionally be considered by collaboration facilitators and also peers. This may be particularly important in the early stages where teams may be less open to influences outside of the team, as was the case in this study. In light of evolving interpretations and actions however, managers also need to find ways to continue to access team sensemaking over time.

In addition, findings in this study suggest the need for managers to differentiate efforts to manage and influence sensemaking *across* buyer and supplier teams. With respect to targeted sensegiving activities around, for example 'what collaboration is' and 'is not', it suggests the need to perhaps target different concerns across buyer and supplier parties making information, evidence, and facts available as relate to, and address, the different concerns of these parties. Recognising that concerns with respect to, for example, the purpose of collaboration and also the intentions and role of the dyad partner team may vary across buyer and supplier parties - and indeed across teams and their management - suggests

the need to manage sensemaking at different levels, particularly where management and peers play a central role in the activities and in the social sensemaking processes of the teams.

In summary, managers need to recognise that facilitating understanding and acceptance of collaboration takes time and effort, requiring flexibility in approach to manage sensemaking over time and across and perhaps beyond the buyer and supplier parties directly involved. Whilst collaboration literature recognises this reality of managing the collaborative effort, these findings provide some insights into what may help facilitate, and indeed perhaps accelerate, understanding and acceptance of the vision, transition and likely outcomes of collaboration within the buyer-supplier context.

Summary insights for managing team sensemaking in relation to the process of collaboration include:

- Recognising the varying nature of team concerns over time;
- Recognising the need to perhaps explore and revise established histories between buyer and supplier teams, in addition to managing newly emerging interpretations;
- Recognising the propensity for familiar concerns such as operational outcomes to perhaps be prioritised by teams and management;
- Recognising the need to address key concerns e.g. the purpose of collaboration and also the intentions and role of the dyad partner team towards generating action;
- Recognising the need for more targeted use of sensegiving efforts to identify and address speculations and assumptions;
- Recognising the levers available to help drive progress toward facilitating understanding and acceptance of collaboration e.g. peers, face-to-face meetings, informal social interaction processes;
- Recognising the need to perhaps manage influences beyond the team e.g. peers and management;
- Recognising the potential value of providing or hastening, 'experiences' of collaboration that are directly beneficial and relevant to teams; and recognising that such experiences may need to vary *across* buyer and supplier teams

7.5 Research Limitations and Future Research Opportunities

The researcher recognises a number of limitations of this research. This study explored sensemaking in relation to collaboration - within four supplier teams and four system integrator teams - operating in the aerospace industry and involved in an academic-industry research project. Further cross-case analysis would benefit from considering a greater number of cases, across a broader range of contexts and industries. In addition, data gathering was undertaken during two project initiatives and across a fifteen month period. This reflected the focus of this study upon the initial and early stages of team sensemaking in relation to collaboration. A more exhaustive longitudinal study could provide access to more data and evaluate sensemaking over a longer period of collaborative activity. Increasing the duration and /or the demands of collaboration between the teams, with a view to further understanding the sustainment of collaboration between teams (and indeed other parties to collaboration), seems a worthy next step. In addition, a longitudinal study may allow for a focus upon different aspects of collaboration, for example understanding how commitment to collaboration develops from a sensemaking perspective, or how varying conditions and factors may impact the process.

This study explored sensemaking at the collective team level where the membership did not change. Further study is needed to understand the collective sensemaking level and the influences, triggers, and patterns of interpretation development observed in this study. Varying the team composition over time, in addition to exploring the sensemaking processes at the intra-subjective (individual) level may also allow for further insights into facilitating understanding and acceptance of collaboration through managing and influencing sensemaking. Further research may consider sensemaking amongst the individual members within the team or show how the outcomes of team-level sensemaking become accepted at the broader level of the organisation and its culture. This would allow consideration of individual representations of sensemaking through to the emergence of collaboration as a more 'taken-for-granted' reality (Weick, 1995).

In addition, it is recognised that this study involved teams in an academic-industry research project with a given structure and approach. Section 4.6.5 and also 6.5.6 addressed the issue of influence with respect to this project. As observed in these sections, varying the structure and approach in addition to the nature and frequency of sensemaking opportunities for collaborating parties may offer an interesting avenue for further research.

Consideration of these findings in a non-academic industry research project would also allow for an understanding of the transferability and fit of the findings in this study with respect to other contexts. In addition, more structured and targeted sensegiving efforts around understanding the purpose and intentions of partner teams may generate additional insights into means by which understanding and acceptance of collaboration may be facilitated and perhaps accelerated.

It is also recognised that all the data in this study were collected within the specific context of first-tier, buyer-supplier partnerships in the aerospace industry which constrains generalisability. In addition, it is important to recognise that these findings relate to incidents of buyer-supplier, team-based collaborations. An analogous study of buyer-supplier sensemaking with different dyad profiles, in addition to projects in different contexts such as independent collaborative projects, industry-wide consortia, or non-profit organisations may provide further insights into the phenomenon.

Other specific contextual aspects of inter-organisational relationships such as culture and language, represent a more complex set of conditions than have been examined in this study. Although consideration of these contexts can be incorporated into the research design, this was beyond the scope of this thesis. Varying these factors may however also provide further interesting opportunities to extend this research.

Further exploration of influences upon team sensemaking, in addition to the sensegiving role of management and peers could also be considered. Findings on the pattern of team interpretations in relation to familiar and unfamiliar concepts suggest an interesting area for future research in terms of the implications for interventions from management and peers, towards the facilitation of collaboration. How managers may do this and the most effective programs are yet to be explored. This raises questions for future research, such as how such interventions might occur, and if they do, which are more effective and why?

7.6 Summary

Gioia and Chittipeddi (1991) note sensemaking and sensegiving are critical processes through which issues are constructed and interpreted in organisations. This study provided an understanding of the sensemaking-sensegiving dynamics with respect to a strategy of

collaboration in addition to generating insights for those concerned with facilitating understanding and acceptance of collaboration between buyer and supplier teams.

This final chapter presented a summary of the contributions of this thesis to both knowledge and practice, in addition to limitations and recommendations for future research. *Section 7.1* presented an overview of the structure of this chapter. *Section 7.2* presented a summary of the findings in this thesis. *Section 7.3* presented a summary of the thesis' contributions to literature. *Section 7.4* presented the implications of the findings of this thesis for management and finally, *Section 7.6* outlined the limitations of this thesis, presenting some future research opportunities.

APPENDICES:

Appendix 1: Synopsis of Improvement Initiatives in CO-IMPROVE

Table 1 below outlines the collaborative improvement initiatives undertaken by the firms in this study.

Table 1: Synopsis of Collaborative Improvement Initiatives

Dyad	Improvement Initiatives	Departments Involved	Operational Objective
Dyad A: Initiative 1	Improve order cycle management to reduce delivery delays	Purchasing; Quality; Problem-setting; Production	Reduce delays in the delivery on a specific part
Dyad A: Initiative 2	Monitor status of employee certification required in the industry	Purchasing; Quality; Problem-setting	Information sharing to create visibility of employee status
Dyad B: Initiative 1	Eliminating cosmetic problems on a part and improving communication	Purchasing; Engineering; Quality	Eradicate production defects on all fan cowl parts
Dyad B: Initiative 2	Improve Vendor Materials Review Request (VMRR) process	Purchasing; Engineering; Quality	Manage corrective executions identified by review process
Dyad C: Initiative 1	Cost reduction for a part within a nacelle programme	Purchasing; Engineering; Production	Reduce supplier cost & SI price reduction
Dyad C: Initiative 2	Database to monitor tools/equipment on loan to supplier	Purchasing; Engineering; Production	Provide visibility of the current equipment status to prevent delays
Dyad D: Initiative 1	Reducing lead-time for	Purchasing;	Reduce internal &

	delivery of tools	Production; Problem-setting	inter-company lead-time
Dyad D: Initiative 2	Monitor the order cycle to increase visibility of the process	Purchasing; Production; Problem-setting	Reduce variance on the delivery orders to improve their punctuality

Source: CO-IMPROVE Documentation

Appendix 2: Description of Improvement Initiatives in CO-IMPROVE

Initiatives in Dyad A

(i) Lead-Time Reduction for Equipment Delivery

The objective of the first improvement initiative was to reduce lead-time for equipment delivery. The SI required a supplier who could guarantee delivery time for a new programme. Delivery time was a critical factor for the success of a future programme so the SI was concerned with testing a lead-time reduction initiative. Lead-time was defined as the time between the first informal negotiation regarding the supply, and the delivery of the tested product. In this way, the delivery date should not be affected by the date raw materials arrive as is presently the case. One objective of the initiative was therefore to reduce lead-time for the delivery of equipment and to improve the reliability and punctuality of delivery times. A further objective was to reduce the variance of the delivery orders, in order to improve their punctuality. The *agreed execution plan* was to gather data on past orders and assess the lead-time of each order phase using the following stages:

- Classifying current orders: the different type of orders should be classified based on cost, urgency, order number, and the relevant categories of equipment it related to
- Process mapping: the lead time of each phase of the process should be identified
- Possible causes of delay, for each phase of the process should be identified, and an appropriate expert selected to solve the problem
- Possible alternative solutions for each delay should be identified
- Improvement targets, and the indicators for mapping and monitoring the process, should be identified

SU A was requested to ensure they received all maw materials, documents, drawings, and everything necessary to deliver the product on time. The supplier was requested by the SI to develop a more proactive approach with more frequent communication between the firms. As the result of this activity, the inter-company lead-time was reduced by 5%, while the internal lead-time by 57% overall lead-time improved by 54%.

(ii) Lead-Time Reduction for Parts Delivery

The objective of the second initiative was to reduce lead-time for the delivery of parts. In particular this involved extending the equipment order table, which was developed in the first initiative, to include part numbers. The *agreed execution plan* was to replicate the steps used in the analysis of the first initiative and as outlined above. As a result of this activity, an overall reduction in lead-time of six months was achieved. Document sharing between the teams was also considered more transparent and traceable a process by both teams.

Initiatives in Dyad B

(i) Reduction of Delivery Delays

The objective of the first initiative was to eliminate delivery delays and to reduce overall delivery time for materials, drawings and documents between the firms. Supplier B was responsible for ensuring all documents and parts are received on time. The SI felt that the supplier needed to be more proactive in this regard and recommended more frequent and more direct lines of communication. The *agreed execution plan* was to develop a proposal to improve the order management system and to increase the visibility of shared processes. This process involved both sides selecting specific parts, mapping the overall order process and monitoring the dispatch dates of documents, materials, and drawings for these parts, over a two-month period in order to identify possible causes for delay. The parts to be monitored were selected based upon the availability of the data needed to monitor their delivery, as identified above. It was agreed that the system integrator would map the overall order process. It was also agreed to check the receipt date of materials, documents and drawings sent by the system integrator to the supplier. Both companies gathered data on part delays and checked the time between order-placement and order-delivery dates for the agreed period. Both companies analysed the causes of the delays separately and then met to discuss these. As the result of this activity delays were reduced by 75% on the delivery of parts selected for the pilot initiative. The system integrator commissioned a database system to perform automatic checking of orders and notification of delivery dates at different stages. Late orders would be accompanied by posting an explanation of the cause of delay on the system, helping to increase shared visibility and understanding of the order process between the firms.

(ii) Management of Personnel Qualifications

For certain programs, the individual personnel involved needed specific qualifications and certification. The objective of the second improvement initiative was to manage personnel qualifications to facilitate regular updating and reissuing of certification. It was intended that this process would facilitate easy access to current data, provide greater visibility of employee status and enable problem-setting with greater visibility of employee status in mind. The *agreed execution plan* was to create a database on the CO-IMPROVE portal detailing the existing and required qualifications of SI and supplier personnel involved in welding, surface treatment and chemical treatment tasks. The companies engaged in defining the data needed and created a list of the people involved, medical checks necessary, nature and duration of qualifications, validity and expiration of qualifications and a list of applicable programmes for this database. The database was then created and data uploaded.

Both companies saw the explicit value of this table. The SI needed assistance in monitoring qualification status due to strict compliance requirements demanded by the industry. The supplier felt it would enable faster response to SI needs if these basic requirements were monitored and managed. If successful it was hoped that this could be rolled-out to larger suppliers. Both companies shared the responsibility for defining the data, identifying the data fields, creating the database and uploading the data. These were completed in one month. Next guidelines were defined for use of this database and responsibilities were assigned for keeping the data current. The database was extended to include information about process, process steps, and the types of certification and qualification needed for different programmes. Both companies continued to use and maintain the table extending the information the table contained and also reviewing appropriate ways to roll-out the table for use with other suppliers.

Initiatives in Dyad C

(i) Cost Reduction

The first improvement initiative related to cost reduction. The objective of this first initiative was to reduce the cost of a part used in a particular production programme. The *agreed execution plan* was for the supplier to generate a list of cost reduction proposals. Each of these was discussed during an internal meeting. The final solution agreed was a joint investment in a new production technology and equipment that changed the

production cycle. The investment was divided between the supplier (15%) and the SI (85%). The activity results were a cost reduction of 14% for the supplier and a price reduction of 8% for the SI. Although the percentages were low this cost reduction was considered a significant improvement as the specific part number had a very low price and a very high cost of production.

(ii) Equipment Monitoring

The objective of the second improvement initiative was to create a system that would allow the SI to have access to the current status of equipment on loan to *SU C.* This system would allow both companies to have greater visibility and a shared understanding of the current status of the equipment and to possibly prevent delays that arise with regard to the quality status of equipment in use. The *agreed execution plan* was to firstly generate a list of equipment and with it detail all documentation pertaining to the status of equipment on loan including checks and tests needed. Secondly, this list and associated documentation were checked to prepare and align them with the actual status of equipment in use. An Excel table was created to test equipment and defects. This table also held information relating to:

- Equipment location
- Equipment status: in use, not in use or in changing.
- Equipment criticality: classified in Normal, Critical or Supercritical
- Control period: time/parts between two consecutive controls

The table was intended to assist teams in maintaining equipment and highlighting problems in transforming equipment from a critical to a supercritical state.

Initiatives in Dyad D

(i) Eliminate Cosmetic Defects

The objective of the first improvement initiative was to eliminate cosmetic defects on parts delivered to the SI leading to removal of duplicate quality checks and to improvement in communication between the companies. The *agreed execution plan* was to identify common inspection methods using a fish-bone diagram, identify corrective executions steps and to prepare a check list agreement for taking shared corrective execution. Next, responsibilities for undertaking corrective action were assigned. At the end of the initiative

period only 3 out of the 5 cosmetic defects first identified were corrected. The teams agreed to continue addressing the remaining problems during the second initiative period.

(ii) Improve the Vendor Materials Review Request (VMRR) Process

The objective of the second initiative was to improve the Vendor Materials Review Request (VMRR) process, addressing related corrective activities within this process. When the supplier finds a defect a VMRR is prepared to report the defect, describe the root cause and plan corrective action. This report includes a discrepancy record, a sketch with the position of the defect, a repair proposal and a corrective execution sheet. Prior to forwarding the VMRR report to the customer it is reviewed by the SI whereby the SI considers the problem, assesses if it is recurrent and evaluates the follow-up plan of corrective execution. VMRR reports are then sent to the final customer as accompanying documentation to the parts delivered. The final customer checks the parts and the VMRR report making the decision to accept or reject the part.

To increase the visibility of the VMRR process the SI sought to understand the quality procedures undertaken by supplier personnel. In addition the SI sought to identify the people undertaking these quality procedures including those identifying, checking, and selecting corrective execution for defects. These personnel could then be accessed by the SI enabling ongoing consultation on the problems and corrective action between SI and supplier personnel.

The agreed execution plan was to:

- Define the management process of VMRR and identify responsibilities
- Increase SI visibility on periodical statistical analysis done by the supplier
- Define the management process of corrective execution using CI tools where possible
- Monitor the corrective execution and give evidence of quality improvements made by the suppliers.

At the end of second initiative the cosmetic defects on parts from the first initiative were reduced to zero and the formalisation of a system to highlight and manage cosmetic defects was developed with the objective to maintain this zero level.

Appendix 3: Operational Outcomes of Improvement Initiatives in CO-IMPROVE

The operational outcomes of each initiative are summarised in Table 2 and Table 3 respectively.

Table 2: Initiative 1 – Operational Outcomes

	Dyad A	Dyad B	Dyad C	Dyad D
Lead-Time	Inter-firm lead-time reduction of 54%			
Delivery Time		Delays reduced by 80%		
Cost			Cost reduction in one part of 14% & price reduction of 8%	
Quality				Part defects fixed in 3 selected products

Source: CO-IMPROVE Documentation

Table 2: Initiative 2 – Operational Outcomes

	Dyad A	Dyad B	Dyad C	Dyad D
Lead-Time	Inter-firm lead-time reduction of 6 months			
Quality		Data management system developed	Formalisation of system to highlight and mange defects	Part defects fixed in 5 selected products Formalisation of system to highlight and mange defects

Source: CO-IMPROVE Documentation

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