Searching for the engine of business-IT alignment in social capital.

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Searching for the engine of Business-IT alignment in Social Capital

Submitted to Swansea University in fulfilment of the requirements for the Degree of

Doctor of Philosophy

by

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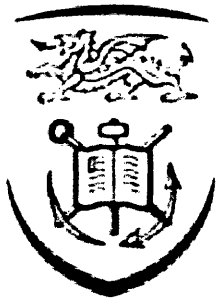

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2014

Abstract

This thesis examines alignment between the business and IS communities through the lens of social capital. Although alignment has been studied in great depth for many years, it is still a concern for IS managers and practitioners. The study developed a tiered and dimensional framework approach to social capital and applied it to four cases in the investment management sector via a series of interviews and a short questionnaire targeting managers within those firms. Taking an interpretative approach to the subject, the study examined both qualitative and quantitative data looking at the impact that network associations, shared norms, trust, reciprocity-expectation and collective efficacy have on alignment within the participant firms.

The study found that although business and IS participants believed that alignment was valuable for their firms to achieve their objectives and recognised the benefits of working collaboratively, they did not tend to share a view on the importance of different types of social capital. Business managers found value in personal relationships which allowed the building of trust and expectations of the fulfilment of mutual obligations. IS managers placed greater emphasis on impersonal aspects such as formal engagement and decision-making. The research concluded that whereas the business perceived alignment to be a social experience, IS viewed it as a process.

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed . ..... (candidate)

Date 15th October 2014

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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DECLARATIONS

Some of the contents presented in this doctoral thesis have been published (or under review) in the following journals and conference proceedings:

Peer Reviewed Journal Publications

Miller, S., Dwivedi, Y.K., and Williams, M.D. (2013). Business / Information Technology Alignment for Financial Services: A Review and Synthesis of Existing Literature. *International Journal of Business Information Systems*, awaiting publication.

Publications in Peer Reviewed Conference Proceedings

Miller, S., Dwivedi, Y.K. and Williams, M.D. (2012). Business / information technology alignment for financial services. British Academy of Management Conference, Cardiff Business School, 11-13 September 2012.

Miller, S., Dwivedi, Y.K. and Williams, M.D. (2013). A social capital dimensional approach to Business-IT alignment. UKAIS, Oxford University, UK, 18-20 March, 2013.

Miller, S., Dwivedi, Y.K. and Williams, M.D. (2013). Searching for the engine of Business-Information Technology alignment in social capital. Nascent Connections, Proceedings of Swansea University Business School Postgraduate Research Conference, 15 May 2013.

Miller, S., Dwivedi, Y.K. and Williams, M.D. (2014). Business-IT alignment: a view from the bridge. UKAIS, Oxford University, UK, 8-9 April, 2014.

ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciation to Professor Yogesh K. Dwivedi. It would not have been possible to complete my project without his guidance, constructive criticism, valuable insights, patience and encouragement.

I would also like to offer my thanks for his guidance and motivation to present and publish my research during the course of my study.

I am grateful to all the staff in the School of Management for their assistance and support.

Finally, I would like to thank my daughter, Katherine and my son, Owen for their support, encouragement and motivation. Their enthusiasm gave me the inspiration to start this project and their love has sustained me throughout.

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Chapter One - Introduction

"It's like walking behind a horse. You can gather up what it leaves in the road and take the bucket away and, after some forensic analysis, you'll be able to work out what it ate. It would be much better if we were at the front seeing what it was eating."

A weary Chief Information Officer ran their hands through their hair and bemoaned the problem of trying to keep up with the strategy of their business. They were aggrieved that they were never quite involved in the most senior dialogues and, by the time they were involved, decisions had been made which would be hard to translate into the most appropriate business solutions. This CIO was clearly deeply troubled by the absence of alignment in their firm.

***

This chapter will cover the background to this study into business - IT alignment in section 1.1, followed by a brief outline of the research problem and why it is still a relevant issue for study in section 1.2. It goes on to discuss the research aims and objectives in section 1.3, the scope of the research in section 1.4 and the approach that was taken to the research in section 1.5. Section 1.6 then discusses potential contributions, both to theory and to practice. There follows an outline of the chapters in this thesis in section 1.7 and it concludes with a summary of this chapter in section 1.8.

For clarity, the term "IS" is used to mean the IT/IS function throughout this thesis. However, the term "IT" is also frequently used in the literature to mean the IT/IS function and the term "IS" is not used by business and IT/IS practitioners in the sector which was studied in the field work.

1.1 Background

Capturing the essence of strategic alignment has challenged researchers for thirty years since McFarlan (1984) identified the strategic impact that could be derived from information technology (IT/IS) as a contributor in the success of the firm. As the debate about competitive advantage moved away from external and environmental explanations, writers increasingly sought the answer to competitive advantage within the firm (Mintzberg and Waters 1985) and through the unique deployment of resources and capabilities (Grant, 1997), distinctive capabilities (Kay 1993) and the alignment of organisational capabilities (Boynton *et al.* 1993). Competitive advantage was held to be found in harnessing core competences (Hamel and Prahalad 1994). Aligning IT/IS resources and capabilities was seen as key to ensuring that the IS function could support both business and operations. Henderson and Venkatraman (1993) described the ideal interaction between the business and the IS function in their Strategic Alignment Model (SAM) and that triggered a discussion on how that alignment might be achieved. Rockart and Short (1993) saw it as a matter of interdependence between the business and the IS function. Earl (1994) viewed it as a continuous and maturing interaction between the IS function and business functions. Other writers developed theories about the sources of alignment and have variously identified those sources as configuration, process, governance, decision-making and reporting lines (Cragg *et al.* 2002; Croteau and Raymond 2004; Sabherwal and Chan 2001; Xue *et al.* 2008). Espino-Rodríguez and Padrón-Robaina (2006, p.66) found that there was a need to build "invisible assets, organisational learning and dynamic capabilities" to create alignment inside and outside of the organisation. Against this background, other writers have challenged the ability of the IS function to make a strategic contribution (Carr 2003). Di Maio (2011) questioned whether, in reality, alignment was a chimera or whether it was even relevant.

Despite a widely-held belief that the existence of alignment is essential to create value, it appears to be difficult to pin down its precise nature and source. Even establishing a definition is difficult. The Oxford English Dictionary defines it as "a position of agreement or alliance". Moving beyond this nebulous definition

immediately takes the reader down different paths. De Lisi and Danielson (2007) found no consistent definition. One attempt to define alignment immediately veers off to talk about the outcome of alignment "The purpose of Business – IT Alignment is to optimise the value that IT contributes to the enterprise" (Info-Tech Research Group 2014) rather than what is alignment. Another suggests that alignment is all about solutions "Creating and managing a business driven IT organisation for which the primary focus is implementing information oriented solutions that are most important to meeting the business goals, objectives, and strategies of the enterprise" (Osborn 2013). A thorough definition is provided by Macehiter and Ward-Dutton (2005, p.2) who define alignment as "the process through which business people and IT delivery organisations collaborate to create an environment in which investment in IT and delivery of IT services reflect business priorities ... and in which business priorities are influenced by understanding of IT capabilities and limitations." This definition will be used as the most comprehensive interpretation of the term in this research.

Practitioners came rather late to the debate. In 2003, for the first time the Gartner Group cited alignment as the most pressing concern for Chief Information Officers (CIOs). In a global study, Luftman and Zadeh (2011) found that the IS function and business alignment remained one of the top five concerns of IS management and even in 2014 practitioners still put the problem of alignment at the top of their list of concerns (Derksen and Luftman 2014). The subject remains a major concern for practitioners as well as for scholarly analysis.

The context for this study is set by the global financial crisis which occurred in 2008. The investment management sector has an in-built reliance on technology to model portfolios, trade and settle instruments and to manage risk and compliance. The complexity of financial services firms was brought into sharp focus by the global financial crisis of 2008. The Turner Review on the global financial crisis (2009) and The Financial Crisis Inquiry Report (2011) revealed that uncontrolled growth, organisational complexity and geographic coverage and an approach to regulation focused on the definition of systems and processes were instrumental in organisational failures during the crisis. Since the crisis, much organisational effort

and expenditure has been allocated to the need to manage more effectively as firms merge, divest and realign. IS senior managers have needed to follow this with start-ups, integrations and consolidation. They have sometimes encountered several waves of change in rapid succession. As firms emerge from the crisis and new structures are created, it is useful to understand the ways that firms have addressed alignment in these turbulent times.

1.2 The Research Problem

It might be expected that after all these years of study, that this is a problem that has already been solved but in recent years studies have shown that academics struggle to identify alignment (Baker *et al.* 2009) and that practitioners still struggle to achieve it. Since the debate continues about whether alignment is a real and practical goal, it remains a research problem worthy of study.

Business and the IS function may not even perceive themselves as part of a common, unified organisation. Avgerou (2000, p.262) argued that the IS function is an institution in its own right with self-sustaining processes, having a complex code of professional expertise, regulations and codes, increased professional organisations and this may create a barrier to alignment. The absence of this commonality has been observed by Khandelwal (2001), van den Hooff and de Winter (2011) and Willcoxson and Chatham (2004) who note that the two communities experience difficulties sharing objectives, deliverables, generating mutual trust and even communicating with each other. Added to this apparent disconnect is the issue that businesses rarely exist in a pacific and stable environment and the definition of alignment within a firm may need constant adjustment if it is to remain relevant (Baker *et al.* 2009).

Where previous studies have looked at process, structure, maturity, planning and reporting lines, there is relatively little analysis of the source of that alignment. The absence of alignment has been observed through mutual misunderstanding (Khandelwal 2001, van den Hooff and de Winter 2011 and Willcoxson and Chatham

2004) and poor performance (Bergeron *et al.* 2004; Neirotti and Paolucci 2007) but there is less focus on where the source of alignment lies within a firm.

According to recent industry research (Sullivan 2012), global investment managers suffer from spare capacity as a result of failings in businesses efficiencies. The study found that there was 38% spare capacity in the industry based on an analysis of how much additional business could be undertaken using their existing platforms and without increasing headcount. Those with cost/income ratios of 55-70% had spare capacity which could be absorbed by growth in assets under management (AuM) or by employing more efficient business models with lower headcount or reduced costs. The research found that only 28% of firms in the study were described as efficient, that is, having a cost/income ratio of less than 55%. Efficient managers with lower cost/income ratios exhibited a close focus on their business model, exercised good cost management and were able to obtain maximum benefit from their platforms.

Other analyses also attribute inefficiency in the investment management industry to a failure to achieve economies of scale as well as a highly competitive environment. CoreData Research (2012) examined performance between 2004 and 2011 analysing 26 managers with operations in the UK. They found that large investment management groups were less efficient than smaller firms, apparently being unable to benefit from economies of scale. Additionally, the CoreData study found that investment managers owned by banks and insurance companies were less efficient than their independent competitors, despite benefiting from a captive market for distribution and marketing and being able to access corporate resources. Their study found that independent firms such as Henderson Global Investors, BlackRock, Ashmore and Aberdeen were most highly rated for cost efficiency and almost all of the most inefficient managers were owned by banks or insurers. The CoreData study found that smaller managers were also more efficient and those with fewer than 1,000 staff were found to be the most efficient in contrast with those with over 3,000 staff who were found to be the least efficient. For example, UBS Global Asset Management had a cost/income ratio of 70.2% in 2013 with a headcount of 3,700 (UBS 2014). The research from CoreData suggests that the beneficial effect of economies of scale are lost as investment managers grow possibly due to the effect

of the additional layers of management and governance needed to manage these larger firms and that greater levels of management drives greater inefficiency. The study found that larger firms had more complex business models involving multiple sales channels, deployment in different geographies with different cultures, languages and regulators and often operating a patchwork of IT systems. They identified that acquisition-led growth was particularly detrimental to efficiency, for example, BlackRock's previously high levels of efficiency fell significantly when it merged with Merrill Lynch's investment management unit in 2006 despite creating a new entity with more than double its previous AuM. CoreData also noted that it appeared harder to identify inefficiencies in institutionally owned business in contrast to the agility enjoyed by the smaller businesses.

In the response to the financial crisis in 2008, a number of firms have merged, divested and realigned and there has been increased focus on risk management, transparency and regulatory scrutiny. For example, Fortis Investment Management had barely digested the incorporation of ABN Amro Asset Management when it was taken over by BNP Paribas Investment Partners (Reuters 2008; BNP Paribas 2009). IS senior executives scarcely kept pace with one change before the next challenge presented itself with little time to reflect on appropriate configurations and processes of governance and alignment. The CoreData study found that acquisition rather than organic growth creates short term extra costs and integration is unlikely to be achieved in the short term leading to increased costs over longer periods than anticipated.

Environmental volatility challenges firms to be more agile in identifying and responding to changing markets. Whether alignment helps or hurts agility is an unresolved issue. Choe (2003) found that perceived environmental uncertainty had an indirect effect on IT strategic applications through the agents that created alignment. In an uncertain environment, a high level of strategic applications coupled with good alignment made a positive contribution to performance. The converse, stable environment with a very low level of strategic applications might negatively impact a firm's performance. Tallon and Pinsonneault (2011) found a positive and significant link between alignment and agility and between agility and firm

performance. In more volatile markets, agility has an even greater impact on performance and, it might be expected, alignment would be even more beneficial and that the IS function can help organizations build strategic advantage to weather this turbulence (El Sawy *et al.* 2010). However, Xue *et al.* (2011) found environmental uncertainty can create a dilemma between managing for cost-efficiency and creating responsive local solutions.

There are many trade publications in financial services with specific focus on IT and IS and so it might be expected that the issue of alignment in financial services might have already been explored in academic studies. However, firms in the financial services industry are notorious for their secrecy (Welby 2013) and have high levels of concern about confidentiality and security so it is often difficult for researchers to obtain access to such firms. A small number of studies exist which are mainly focused on retail banking and there are a few studies looking at the wider banking or insurance sectors (Peffers and Tuunainen 2001; Schmidt and Buxmann 2011; Tallon 2010; Teubner 2007). A few studies include a small number of financial services participants as part of a multi-sector approach (Fink and Neumann 2009; Mohdzain and Ward 2007) but are not interested in any sector specific analysis. This has led to the relative neglect of business - IT alignment in financial services by the academic literature.

Within financial services, investment management is a small economically valuable sector with clearly identified inefficiencies and there has been no study of alignment. It is well-recognised that alignment is a contributor to superior performance and is therefore any investigation which contributes to a greater understanding of how firms may build greater alignment will provide a unique practical and theoretical contribution.

1.3 Research aim and objectives

The aim of this research was to understand the intrinsic sources of alignment within firms through social capital theory. In order to achieve that aim the following objectives were set:

1) to examine gaps in the business-IT alignment literature with a specific focus on any literature pertinent to financial services,

2) to develop a framework approach to study alignment,

3) to develop a methodology, consistent with the research problem and appropriate to the conceptual framework,

4) to design a method to enable the research to apply that framework to four cases in the investment management sector,

5) to analyse and report on the data from both approaches,

6) to synthesise those findings to establish an understanding of the role played by social capital in alignment and

7) to draw conclusions, understand limitations and suggest possible future research directions.

1.4 Research Scope

This study looks at alignment in the context of a small sector, that is, investment management within the financial services industry. In a time of great environmental turbulence created by the global financial crisis, firms have been subject to mergers, acquisitions, divestitures, integrations and realignments. At the same time there has been an increased focus on risk management and governance. As firms have absorbed these changes, they have needed to find models of business and IT alignment that have supported and sustained them over the period of the global financial crisis or to find new models to support the newly formed businesses.

The empirical study examines alignment in four case studies within the investment management sector. Each firm differs in size and each one experienced different internal organisational pressures. However, they are all subject to the same competitive environment and regulatory pressures and thus this study will look at internal matters only examining the perceptions of senior managers in both business and IS roles. Financial performance and internal data, for example, human resource data such as compensation information was not collected since it was not considered relevant to the study and firms would have been unlikely to divulge such data.

In other studies on business - IT alignment, researchers have looked at data such as process, governance models, maturity and financial outcomes. These have all illuminated the subject of alignment but this study will focus on the operation of social capital to offer a different perspective and insights.

1.5 Research approach

This study examines the fundamental role that social capital plays in organisations in order to create alignment between the the IS function and business communities. Where business and the IS function seem to have little in common with each other, the heart of the problem often lies in the fact that the business and the IS function frequently do not perceive themselves as part of a common, unified social organisation. Beginning with the premise that the absence of social capital is destroyer of alignment, the study argues that where social capital is built across the boundaries of the business and the IS function, this leads to alignment seen in collective efficacy. This is elaborated in a dimensional framework comprising the dimensions and attributes of social capital : network relationships, shared norms, trust, reciprocity expectation and collective efficacy.

The study uses a mixed method approach. A conceptual framework was developed in order to understand the contribution that social capital plays in alignment and this was used as the theoretical underpinning to the study. It was intended that much of the data collected would be qualitative since the researcher was examining the

perceptions of participants. The interview data was supplemented by a questionnaire targeting both business and the IS respondents in the in-scope firms.

1.6 Potential Contribution

This study takes a new approach to the analysis of alignment. In addition to using social capital as a lens for analysis, it also constructs a tool to enable analysis of that alignment. It will contribute to the understanding of the strategic alignment debate and illuminate the areas of difficulty in creating the conditions for alignment.

The framework formed the basis for an instrument to support the gathering of qualitative data and to explore quantitative data. It provides an innovative way of gathering this information to examine alignment and could be used or adapted by other researchers who are examining alignment in other industries. The study looked at the way that social capital was built between business and the IS function rather than having a focusing solely on the interaction of the CIO with their peers. Thus this study extends the body of knowledge on alignment by looking inside the firm at the resources that social capital creates in order to look for a resource-based view of alignment as a dynamic capability.

This study also offers insight and direction to practitioners who are seeking to improve business - IT alignment in their organisations by offering them insights into the impact of of social capital.

1.7 Thesis Outline

Chapter Two of this thesis continues with a literature review of the current academic discourse on business and IT alignment. It examines the development of thought on the subject of alignment and how writers have sought to explain success and failure of alignment through different perspectives. Chapter Three discusses the conceptual framework and establishes a theoretical basis for this study in the use of social capital theory and proposes a framework based upon a dimensional approach to

social capital. It suggests that there exist five dimensions : network relationships, shared norms, trust, reciprocity expectation and collective efficacy and links these dimensions in three tiers. In Chapter Four, the thesis elaborates the methodological choices which guided the selection of a case study approach and the use of mixed methods. Chapter Five is concerned with methods and provides a detailed breakdown of the qualitative and quantitative methods used for the empirical study explaining the data collection and analysis approaches. Chapter Six describes the qualitative data findings and Chapter Seven describes the quantitative data findings. Chapter Eight discusses those findings in the context of both the literature and conceptual framework linking the findings to the background, literature and theory. Practical and theoretical implications are explored. The study concludes with Chapter Nine giving an analysis of the main findings, a discussion of the limitations of the study and potential further research opportunities.

1.8 Summary

This chapter has laid out the direction and structure of this study. It has discussed that a research gap remains in achieving a better understanding of business and IT alignment which this study will addresses through an analysis of alignment via the lens of social capital looking inside the firm at the fundamentals of network relationships, shared norms, trust, reciprocity expectation and collective efficacy. The chapter has set the choice of the investment management sector in the context of its competitive landscape, rapid organisational change, regulatory pressure and the growth of new financial services technologies which have all contributed to create an environment where agility and alignment are seen as preconditions for success.

In this study, the subject of alignment between business and the IS function is examined through the vehicle of social capital and argues that the positive effects of social capital generate the positive effects sought by alignment. Social capital is a multi-stranded concept encompassing the building and renewing of network connections, establishing shared norms with shared values, language and processes, earning and giving trust, setting and delivering expectations of mutual obligations

and creating collective efficacy.

Alignment can be seen as many things : value creating, solutions management and as process. All of these are the outcomes of alignment and may, via a feedback loop, improve alignment but they are not alignment itself. This study argues that alignment is a dynamic state. An organisation that is in alignment may expect all of these outcomes but alignment comes from a much deeper source within the organisation : social capital.

Chapter Two – Literature Review

2.1 Introduction

In the literature with specific focus on financial services, there is no direct discussion on the issue of strategic alignment. Conversely, in the literature on strategic alignment, there does not exist a cohesive review of the available literature with a focus on financial services. This chapter addresses that gap.

This chapter examines literature in the field of strategic alignment between IS organisations and the businesses which they support with specific focus on governance in non-retail financial services.

Section 2.2 which follows covers the review framework describing the approach to the literature. The context for the strategic alignment debate is set in section 2.3 and section 2.4 is concerned with the search for the essential characteristics of strategic alignment. In section 2.5, there is a review of the literature on the how alignment may be derived from configuration and structure and reporting lines and section 2.7 examines the impact of process. The push and pull of strategic planning is explored in section 2.8 and section 2.9 reviews the literature looking at the performance outcomes of strategic alignment. The nature of the business - IS boundaries is considered in section 2.10. The chapter proceeds with an examination of external considerations in section 2.11 to set the wider market context for financial services. Section 2.12 surveys those studies on alignment which are specific to the financial services sector. A discussion of themes and gaps follows in section 2.13 and the chapter concludes with a summary in section 2.14.

2.2 Review Framework

The literature was reviewed in a five stage process which refined the choice of literature from an initial broad range of hits through filters to cluster the references by logical themes, draw in additional references and finally eliminate references which did not address the scope of the study. This is illustrated in Appendix A.

The initial analysis of literature brought in a range of sources including books, journal searches and conference proceedings. The selection was further filtered for general relevance, that is, relating to the broad theme of strategic alignment and then scanned to further eliminate documents which related to IT and IS but did not impinge on the main topic, for example, project management practices. The main themes arising at this stage were clustered around configuration, process and maturity. This more specific list was grouped for ease of management and referencing according to themes. These included hot topics, that is, recent work in the field and suggestions for study. Further clustering grouped the literature according to organisational design, configurations and structures. power, politics and culture and models and processes. Literature pertaining to financial services was examined to narrow the focus on any potentially relevant work in the sector. The literature was grouped into the strategic alignment debate and defining strategic alignment. Further clusters brought studies on strategic planning, process, configuration and the performance outcomes of strategic alignment. The apparent division between the business and theIS function gave rise to a literature grouping known as "Them and Us". Finally, literature relating to external considerations and financial Services were were grouped together. Initially, maturity seemed to be a theme in its own right but, on further examination, it was clearly formative in the early debate about alignment but no longer held any significant research interest. These themes are discussed in subsequent sections.

2.3 Analysis of references

The main bias is towards journal articles in order to obtain the most recent findings.

It is notable that the number of books on the subject area peaked in the mid 1990s coincidentally with the debate on the resources and competences view of strategy. A resurgence of interest is seen towards the late 2000s. The publication of books tends to lag publication in journals and other sources such as conference papers. No books published after 2009 came into the scope of this literature review although there continued to be wide interest in journals.

2.4 The strategic alignment debate

Capturing the essence of strategic alignment has challenged researchers for many years. The early discourse on strategic alignment was informed by the development of the resource-based view of the firm and the understanding of the enabling quality of the IS function for organisational strategy.

As the scholarly debate moved away from the competitive environment as the explanation for a firm's success, the answer to competitive advantage was seen to lie within the firm. Strategy was crafted and emerged from inside the firm (Mintzberg and Waters 1985). Kay (1993) reflected that the management of customers, innovation, and infrastructure combined to achieve a capability that distinguished a company it from its competitors. He argued that in a successful organisation these are interwoven to create a unique and distinctive capability underpinning its competitive advantage. The key to competitive advantage was in identifying and understanding the nature of its core competences and harnessing them for success (Hamel and Prahalad 1994).

Debate continues about whether alignment is even a real and practical goal. Gartner's Di Maio (2011) questioned whether, in reality, alignment was an illusion and or even relevant. Nonetheless, it remains a major organisational concern. In a broad study in 2010, Luftman and Zadeh (2011) looked at geographic similarities and differences in the USA, Europe, Asia, and Latin America. In their study they found that business - IT alignment was in the the top five IS management concerns along with business productivity and cost reduction, business agility and time to market, business process

re-engineering and IT reliability and efficiency. The other major concerns of reliability, productivity, business agility and business process re-engineering all depend on a high level of alignment for success. These trends were still in evidence in 2013 (Derksen and Luftman 2014). Even if left-field thinkers such as Carr (2003) and Di Maio (2011) challenge the very concept of alignment, it remains on the top of the agenda for IS senior management and, therefore, remains a subject area for study.

With the resources and capabilities debate locating the source of competitive advantage inside the company (Hamel and Prahalad 1994), came a discussion on how to ensure that different parts of the organisation were in alignment (Johnson 1988). Earl (1993) saw alignment as a continuous interaction between the IS and business functions. Propinquity would drive the transition from a technology and systems mindset to one of business and organisation. Henderson and Venkatraman (1993) developed the seminal model which proposed the ideal interaction between the business and IS function.

Although by the late 1990s strategic alignment was seen as a fundamental prerequisite for organisational success, it was far from being implemented in the real world (Ciborra 1997). Strategy descended into "tinkering" and the IT infrastructure in a state of "drift". In 1997 the Gartner Group published research indicating that IS management recognised that it was failing to address business needs since it was too narrowly focused on the technology and had an insufficient grasp of the business. IS managers surveyed by Gartner invested 65% of their training budget on wholly technical training, 25% on developing planning and leadership competencies and only 10% on business related training. The IS function was not normally represented at the most senior level on the boards of companies and business line managers expressed little confidence in the ability of their IS departments to deliver business change. IS managers aware of those shortcomings, sought to address this lack of business understanding by changing the balance of their training expenditure and planning to spend 35% of their training budget on business related training by 2001.

Some saw alignment an issue of maturity (Earl 1994; Galliers and Sutherland 1991; Karimi *et al.* 2000). As an IS organisation matures, then the natural consequence will be a maturation of the relationship with the business. Earl describes this as a three-stage growth model evolving from the simple single-direction approach where investment in IT leads to a direct business benefit, to an intermediate stage where the IT investment is a trigger to business change and onward to business benefit, to one where business change leads to firm-wide investments, including IT, as part of the normal business cycle. This leads to maturity across the organisation in all aspects from conceptualising strategy through implementation, embedding and learning as shown in table 2.1 below.

Table 2.1 Organisational Maturity (adapted from Earl 1994)

Management Issue	From IT/IS	Business impact
Vision	Technology future	Rethinking business
Planning	IT Strategies	Business themes
Justifying	Financial appraisal	Business case
Implementing	Project management	Managing benefits
Controlling	IT expenditure	Cost of business
Organising	IT Business	Business IT
Learning	IT Literacy	Organisational development

Galliers and Sutherland (1991) take this further with their revised stages of growth model. In this six stage model, all aspects of the the IS function from strategy, structure, systems, staff, style, skills and shared values travel along a path from unconscious immaturity to a conscious, interconnected mature engagement.

Not all scholars agree with the evolutionary-maturity approach. Knights *et al.* (1997) refute the idea once the IS function and the organisation it services reach a mature equilibrium, strategic alignment will follow. Indeed, the concept of maturity is based upon the idea of a level of homogeneity in the firm since there is little point in the the IS function organisation arriving at the nirvana of maturity if the business does not travel along the same path at the same time. In their study of the use of IS steering committees in banking as a proxy for maturity, Karimi *et al.* (2000) found that the presence and nature of the roles of IS steering committees were related to the level

and nature of IS management sophistication within firms but did not link this to the overall process maturity of the firm.

Nonetheless, the quest for strategic alignment gathered pace and in 2003, for the first time, Gartner reported it as the highest priority for Chief Information Officers (CIOs). While the subject was high on the agenda for practitioners, other writers questioned whether IT could indeed drive genuine competitive advantage. Carr (2003) argued for IS to retreat to cost management and risk avoidance. In those circumstances, strategic alignment might be very difficult to identify.

By the mid 2000s, writers found greater complexity in the debate. Rejecting simple approaches of process or configuration, they began to look into how internal capabilities might promote alignment and, picking up on the argument advanced by Carr (2003), Baker *et al.* (2009) suggest that while "technology itself may not be a source of competitive advantage, the dynamic capability to sustain alignment between IT strategy and business strategy is a source of competitive advantage".

2.5 Strategic alignment – the search for essential characteristics

Despite much scholarly effort being expended in attempting to identify the attributes of alignment and how it might be achieved, there is no clear, commonly-held view of the true nature of alignment itself. Murray and Wilmott (1997, p.167) saw its existence as a happy accident "accomplished despite the decision making of managers rather than as a consequence of their seemingly omniscient, rational calculations". Writers have sought the dimensions that can be traced across firms, sectors and geographies while others have sought indicators, signs and symbols of alignment.

In the late twentieth century the perception of IS moved beyond the simple automation of tasks and began to be seen as as a source of differentiation and opportunity. This hinged on having the potential within the competitive field coupled with, and supported by, capable resources (Cash *et al.* 1985). Not all organisations are the same and will have arrived at their current state because they have travelled a

particular route at a given time. Recognising that time path dependency impacts the starting point for organisations, McFarlan (1984) saw the enabling quality of IT as a combination of applications and systems, current and future.

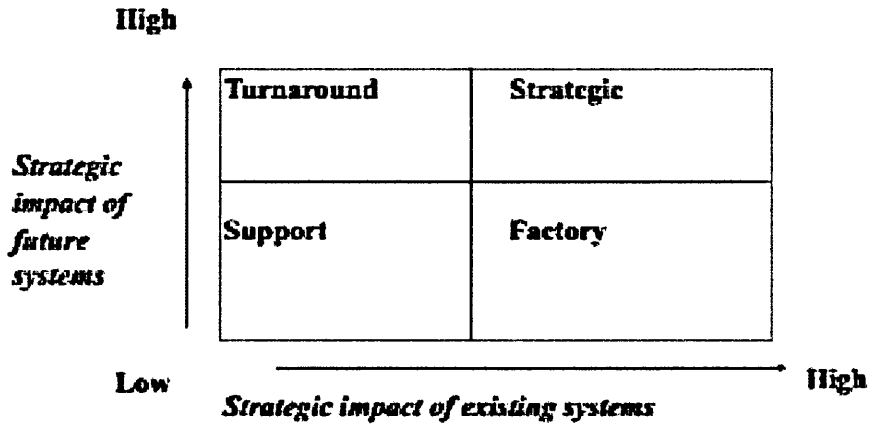

Figure 2.1 Strategic impact of IT (source : adopted from McFarlan 1984)

Although valuable to assess where a firm starts, this model offers no guidance on how business and IS can share the same view of the strategic impact of current and future systems. Without this common vision, the dialogue between the two parties would be unlikely to create a long-term beneficial impact and could descend into confusion and mistrust.

The connection between business direction and the potential value of the IT landscape continues to interest writers. Seeking an objective framework to measure strategic alignment, the fit between the strategic direction of business is matched with that of the existing portfolio of applications (Johnson and Lederer 2010) to map the possible benefit of the current IT architecture to the business strategy.

If systems and applications were vital components, then resources whether artifacts, processes or people were seen as key to creating distinctive capabilities. In a sector such as banking, with "an aggressive competitive strategy with IT at its heart is only likely to yield benefits when the firm's IT resources (human as well as infological and technological) are sound" Galliers (1997, p.240). Creation of new hybridised roles spanning the IS-business boundary linking components of the business model were seen as a way of aligning resources (Pasternack and Viscio 1998).

Sharing a common view created through a convergence of experience and a mutual understanding of the direction of each other's territory has emerged as characteristics of strategic alignment. It has variously been seen as an outcome of shared domain knowledge (Reich and Benbasat 2000), the fusion of resources, unique to that firm blending into a specific combination (Van Grembergen 2004) and a convergence between the interests of senior business and IS management (Johnson and Lederer 2005). Communication creates convergence (Johnson and Lederer 2005). They found that frequent communication through a rich variety of channels informal as well as formal including meetings, memos and presentations leads to convergence between the Chief Executive Officer (CEO) and CIO.

Shared understanding between the CIO and Top Management Team (TMT) about the role of IS in the organisation moved an organisation further along strategic alignment continuum (Chen *et al.* 2010; Preston and Karahanna 2009). The components of such a shared understanding were shared language, shared domain knowledge (the CIO's knowledge of the business and the TMT's understanding of the strategic value of IT), systems that promote that knowledge and understanding (structural and social), and the growth of CIO-TMT shared experiences leading to a shared perspective.

Looking inside the IS organisation, Tiwana (2010) saw a positive linkage between IT architecture and the IS governance structure in shaping alignment. A push effect was observed where a modular IT architecture promotes agility thus allowing the IS organisation to keep up with the evolving business strategy. A devolved and decentralised IS governance strengthened the relationship between the business and IS functions and, consequently, maintained and improved alignment.

IT infrastructure (ITI) can be defined as both physical and managerial capabilities. Examining the perceived strategic benefit of flexibility enabled by an agile infrastructure, Fink and Neumann (2009) showed that strategic alignment and competitive advantage are contingent on the range of managerial capabilities but not necessarily physical capabilities suggesting that physical capabilities are either more commoditised or can be more readily acquired, especially in smaller organisations.

Managerial capabilities were more subtle and complex and not necessarily seen as meaning the same thing to all participants. Interestingly, where the most senior IS executive reported to the CEO the effect was not perceived to be as having such a positive effect. In these cases, competitive advantage was attributed to the range and flexibility of the physical infrastructure capabilities. Where the most senior IS executive reported elsewhere, the benefit was attributed to managerial capabilities. This may be a sector effect since nearly 30% of their respondents were employed in technology or communications. There may also be a geographic effect since they do not describe the geographic spread of their respondents.

If the characteristics of alignment are seen in the relationship at the most senior level between business and IS top management, then writers have largely ignored whether this trickles down the organisation to more junior management and into sub-units. Exploring alignment below CIO and the TMT (Onita and Dhaliwal 2011; Ravishankar *et al.* 2011) examined more granular levels of alignment involving the interdependent subunits within the corporate IS unit. They found alignment between subunits within a corporate IS unit to be dynamic and shifting and not necessarily reflective of head office or board level interactions. Often alignment was context (business and market) based and built on local and social relationships.

The essential nature of alignment may be less about ingredients but more about the recipe. Espino-Rodríguez and Padrón-Robaina (2006, p.66) reviewed the evidence in literature for the impact of outsourcing on strategic alignment through the lens of the resource-based view of the firm and found that the body of literature confirmed the need to build "invisible assets, organisational learning and dynamic capabilities" to create alignment both inside and outside of the organisation. Bhatt and Grover (2005), King (2003) and Schwarz and Hirschheim (2003) looked at the combination of technical capabilities and the human capabilities and found that the mix of technical skills, business knowledge and managerial competencies were all necessary parts of the mixture. IS governance is redefined as relationships rather than structural.

Thus the essence of strategic alignment may be different for each organisation, both situational and even transient. Appropriate convergence appears to bring benefits and the converse is true. It is not simply a case of maturity. Indeed, the IS department may have a wholly different maturity profile to the business.

2.6 Configuration

Turning to how organisations configure themselves to create alignment, Chandler (1962) claimed that structure follows strategy and the corollary to that is that structure is an enabler of strategy. Seeking evidence for, and sources of alignment, Griffiths and Finlay (2004) supported the resource-based view of the firm and concluded that sustainable IT-enabled competitive advantage is elusive but where discerned it was overwhelmingly within the internal architecture of the organisation. The configuration grail is described by Boynton *et al.* (1993) as the alignment of all elements with the firm: process capabilities, control systems, information systems, culture and personnel.

Xue *et al.* (2008) identified governance patterns for IT investment decisions in a hospital context. Although not engaged in the same fields as this study, it is nonetheless an interesting construct of IS governance models built across four dimensions: IT investment level, external influence, the level of centralisation in the organisation, and the relative power of the IS function. They found seven configurations of IS governance models which located decision making power between IS and top management, administration or the professional teams. In each case decision making power could reside with the IS function or the business function or with both in a duopoly. This was particularly relevant to their field of study since power could reside with either the board of management, the administration function or the professional function, that is, with the doctors. In the context of this study, IT investment decision making could reside in three similar functions with the fund management teams taking the role of the professionals.

In their study, Xue *et al.* (2008) concluded that IS governance in reality had a number of additional subtle, informal components that mediated or even by-passed formal structures. These comprised pre-decision stages which included other participants as well as the formal decision maker. Consultation with and engagement of the IS department may not even play a key role in the process determining IT investments and may be circumvented even in cases of major investment decisions which require top management approval. Pre-decision stages involved informal discussions and prefaced formal initiation but may set the scene for the way that decision rights are allocated in a formal process.

They found that decision rights are both contextual and contingent and are unlikely to be mapped to an organisation chart. Decision rights are also impacted by the the knowledge of specialised IS and client departments (Tiwana 2009). Project governance configurations exhibited two types of decisions rights: decision control rights, that is controlling who makes the decision and decision management rights, that is, who is responsible for the execution of those decisions. Specific and specialist knowledge played a great part in determining how these two types of decision rights are allocated and thereby influence information systems development.

The existence of specific forums and reporting lines are often seen as proxies for strategic alignment. "Visioning networks" are described by Agarwal and Sambamurthy (2009, p.194) as IS centric executive councils made up of the CEO, CIO, COO and other key decision-makers and are core elements in the configuration to underpin alignment and engage in planning. Fink and Neumann (2009) found that reporting to the CEO reduced the positive effects of managerial IS capabilities. Banker *et al.* (2011) noted that when success is contingent on innovation and the CEO leads this strategy, the CIO will report to the CEO. If strategy is contingent on tight cost management, then the CIO should align to the CFO. The larger the organisation, the less likely the CIO is to report to the CEO (Valorinta 2011). However where an IT-enabled strategic change is proposed, there may be short-term direct reporting by IS management to the CEO.

Seeking evidence for the utility of the Enterprise Architecture Management (EAM) function Schmidt and Buxmann (2011, p.169) found evidence that the implementation of the EAM function supports IT efficiency and IT flexibility enabling management of the tension between cost-efficiency and driving the business strategy. For larger firms in an information intense environment, EAM was seen to be beneficial. However, frequent business strategy updates were needed to keep it current. If there is value in an enterprise view on the technical architecture of the firm Versteeg and Bouwman (2006) found benefit in business architectures built on "business domains" or "areas of accountability". These were found to increase understanding of the linkage between the business and IS. Malta (2012) sees a meshing together of a model describing organisational competences with an enterprise architecture implementation in order to promote alignment.

There appears to be no correct configuration. Larger organisations have complexities that are outside the experience of smaller firms. Similarly, different points in a firm's development will define their need for more or less formal structures. Reporting lines, formal consultation forums and structures appear to be contingent on the competitive environment and business strategies which will be evolving and shifting at the same time.

2.7 Strategic alignment through process

If strategic alignment does not just happen through organisational maturity or configuration, then perhaps it can be engineered through process-led engagement. Gregory (1995, p.9) argues for a process framework with "closer integration of technological considerations into the strategic and operational management of companies." This is challenged by other writers such as Pare and Jutras (2004) who find that that the use of process to drive alignment is contingent and situational.

Notwithstanding, various process approaches have been postulated to both achieve and demonstrate strategic alignment. Proposing process approach to valuing technology, Reneniyi *et al.* (1997) claim that valuing technology needs to be

undertaken through understanding and managing technological risk, each party bringing their specific and specialist knowledge of risk to the engagement. In the context of banking, they state that bankers know about banking and expect to manage financial risk and do not expect to manage technological risk.

In sectors with a high dependency on IT where it is recognised that the IS and business managers have different perspectives, Burn and Szeto (2000) offered a process approach to achieving strategic alignment. They argued that a process approach would bring a fundamental change in management's understanding of the potential for strategic change enabled and driven by the effective use of IT. Formal, structural processes can create convergence between the IS and business functions. In developing a framework to build a shared vision and understanding Preston and Karahanna (2009) emphasised the need for the formal, structural and informal interactions to build knowledge about business and organisational strategies, organizational direction business processes coupled with a deep understanding of IT capabilities.

Process is not without problems. Swan *et al.* (1999) found that Ebank's attempts to promote strategic knowledge sharing misfired catastrophically with an increase in mistrust, misinformation, and turf wars. In complex, fast-changing business processes, Cameron *et al.* (2000) found that the consensual approach to strategy making constrains, compromises or even subverts the planned intent. Process gets in the way. Although senior management sponsorship is valuable, Kearns and Lederer (2003) raise concerns about the effect of direct CEO participation in formal planning of IT-based competitive advantage.

Looking at whether the planning process itself could engender improved alignment, Grover and Segars (2005) saw it evolving as a learning system. Seeing this in a three-stage maturity model they concluded that planning evolves as organizations reconcile contradictory "rational" and "adaptive" dimensions of planning and thereby improve mutual understanding. This balanced approach to planning was shown to be effective in both achieving successful planning and building alignment.

The very act of engaging in specific processes designed to improve the effectiveness of planning can bring IS and business units together (Peak *et al.* 2005). Kearns and Sabherwal (2006) found improved participation in the SISP process where organisations had engaged senior business managers in specific activities to improve their understanding and knowledge of IT. This was further enhanced by IS managers' participation in business planning. Both of these activities improved the shared perception of business-IT strategic alignment. This was further explored by Ouakouak and Mbengue (2013) who examined the impact of the alignment of employees on rational strategic planning or SISP and firm performance finding that "without employee strategic alignment as a mediator ... the relationship between rational strategic planning and company performance is unlikely to be demonstrated" Ouakouak and Mbengue (2013, p.28). In their study, they found that simply engaging in the process of planning was insufficient.

2. 8 Strategic Planning – Push and Pull

Alignment is very often seen as a pull effort from the IS organisation to understand the business strategy and, to a lesser extent, a push effort from the IS organisation to enlighten the business of the potential value of a strategic engagement with IS. In their "alignment dichotomy" Kearns and Lederer (2000) found that business-to-IT planning demonstrated top management's understanding of the value of IT. From the other direction, their examination of IT-to-business planning showed a clear understanding by IS management of business strategy but this did not necessarily percolate through into embedding an organisational level knowledge of the potential value of its own IT into the business plan. Hence it did not it ensure senior management commitment to IT.

Strategic planning requires an engagement across all functions to achieve the strategic intent of the organisation. Information systems (IS) strategy is distinct from IT strategy in that IS strategy is wholly driven by the business Galliers (2009, p.13). The direction of travel is a business push and completely demand-driven. In this view, the IS strategy is regarded as the business of the business not the IT

organisation whereas IT strategy is the exclusive concern of the IT department. IT/IS planning requires joint engagement between the IS organisation and the business. Peppard and Breu (2003) studied the evolution of business and IT strategies finding that this was built from the interdependency of business and IS; the relationship was perceived as symbiotic.

Formal strategic information systems planning (SISP) has been identified as a rigorous and assured way of achieving alignment of outcomes. However, Kearns and Lederer (2000) failed to find strong evidence of the effectiveness SISP processes. They coupled this with an examination of investment in mission-critical systems where the firm encountered both environmental uncertainty and information intensity Their study found no evidence of improved performance. However, environments with both high information content in central activities and which were subject to market pressures from a wide range of products, for example, market data and dealing services, tended to need IT to support normal business activities. When this occurred, the IS function tended to adopt formal SISP processes in order to achieve prioritisation and agreement on the use of limited resources.

The value of SISP might be predicted in the success of projects where it is necessary to coordinate resources utilisation versus the allocation of priorities. Byrd *et al.* (2006) found a strong positive relationship between the use of SISP and certain types of project notably technical integration, enhanced application functionality, and data integration projects. Furthermore, engagement of senior IS management in the process might promote sponsorship of SISP leading to even greater success. The study found a moderate relationship between the relative organisational importance and leadership of the CIO within SISP.

Continuing analysis of the links between environmental uncertainty and information intensity, Kearns and Lederer (2004) found a clear connection between the dependence on IT for core business functions, participation of the IS function in business planning, alignment of the IT plan with the business plan with the use of IT for competitive advantage. They found that a pragmatic rational adaptive approach with a combination of formal and informal planning methods are successful in

uncertain, turbulent environments for information intense businesses. More extensive planning in an uncertain environment produces greater success (Newkirk and Lederer 2006). This is highly pertinent finding for financial services with its dependence on IT for core business functions such as trade processing and settlements.

Projects are the tangible expression of an organisation's execution of its business strategy. Enabling successful projects through reliable and replicable process would be a path to successful execution of strategy. Jenkin and Chan (2010) proposed that a process to align project deliverables with strategy would serve as a mechanism to ensure strategy execution. They define project alignment as the degree to which an project deliverables are consistent with the project's objectives, which are, in turn, a reflection of the IT strategy of the organisation. However, during the lifetime of a project, objectives may change, reflecting environmental changes that reveal both opportunities and limitations. It is the alignment of the final deliverables rather than rigid adherence to process that delivers the strategic intent of the organisation. Their results demonstrate the value of executing processes, change, learning, adaptation and positive team interactions.

If strategic planning essentially flows from the business to IS, then IS governance needs to reflect that. The measurement of the success of SISP was seen by Seagars and Grover (1998) as built into the normal operationalisation of procedures through the use of benchmarking techniques and other measurement tools. The Information Technology Alignment and Governance (ITAG) group has scanned and synthesised the current literature on the so-called IT productivity paradox where no positive link can be found between IT spend and productivity. With a starting position that the IT strategy is driven out of the business strategy, they go on to focus how to engage the business through relational mechanisms, processes which allow translation of the business intent and tools to support and communicate both to the business and IS. These all appear to have a positive impact on IT value management (Maes *et al.* 2011). De Haes and Van Grembergen (2010) propose a governance model that allows a cascade of business goals to IS goals which they postulate will have a positive impact on alignment through the use of the Control Objectives for Information and

Related Technology (COBIT) framework and other IT centric tools. They do not examine the need for the process to flow the other way. Further analysis by the group looks at the implementation of IS governance with a distinct focus on process and the measurement of the value of IS (Van Grembergen *et al.* 2010 ; Van Grembergen and De Haes 2010).

Investment in major IT projects is risky and needs to be securely anchored in the business plans. Cumps *et al.* (2009) looked at the practical way that IS managers could improve the alignment of these significant investments with the corresponding business requirements. Examining 641 organisations in 7 European countries they developed the a set of rules to enhance the likelihood of achieving alignment. They state that business and IS planning and management processes should be integrated and connected. IS performance management should be built into the budget allocation. Head office or central business and IS alignment processes should be duplicated at regional and sub-unit level. IT investment spend should be prioritised against the contribution of that spend to the business strategy and that the two parties should partner in every major IT project with joint delivery responsibility but clear business ownership and sponsorship for all IT projects. Cumps *et al.* (2009) found that, when these were applied in concert, there was a marked improvement in alignment demonstrated by shared responsibility for outcomes and a decline in disaffection and balkanisation.

Studies of alignment tend to focus at senior management and central or headquarters level. Examining SISP in multinationals from the perspective of the subsidiaries, Mohdzain and Ward (2007) found that the main focus of planning was control cost and economies of scale. Where process was less centralised, local business and the IS function were mutually engaged and business managers were satisfied with the outcomes. With developing centralisation, the planning process came more under the control of IS which, in turn, drove the process to become more tactical and infrastructure focused. This left local business managers less satisfied with the outcomes of the planning process, in contrast with their local IS colleagues. The study covered a large range of home countries, for example, The Netherlands and the UK but subsidiary units were chiefly Malaysian and so generalisation may be

inappropriate. However, it presages the findings of the Cumps *et al.* (2009) study discussed above.

In conclusion, establishing organisational structures and supporting processes may not bring the anticipated value. Indeed, in uncertain environments, for information intense businesses such as financial services the use of wholly formal planning methods with strict adherence to process seems to be less valuable than a rational adaptive approach (Kearns and Lederer 2000) which is pragmatic engaging both formal and informal IS planning methods.

2.9 Performance outcomes of strategic alignment

Writers have looked at the measurement of alignment of business strategy and IT strategy and thence between alignment and performance across a number of sectors, sizes of firm and geographies (Cragg *et al.* 2002; Croteau and Raymond 2004; Pennings 1998; Sabherwal and Chan 2001). They found that those with a high level of alignment (according to the definitions of the study) had achieved superior performance (according to the definitions of the study) than those with low alignment. However, there are limitations to these studies in that they may be too small, too sector or too geographically specific to be useful for generalisation.

Strong executive leadership is a driver for perceived value and positive market reactions occur when there is an announcement of newly created CIO positions and their appointments (Chatterjee *et al.* 2001). This was chiefly seen in industries with high levels of IT-driven transformation. However, they do not consider the long term value and so there is no indication that it is sustainable and is likely to be more significant in pure play IT firms rather than in firms using IT to enable competitive advantage.

However, the impact of alignment on perceived business performance appears not to be a simple linear relationship. A number of studies used the classification of business strategies as Defender, Analyzer, Reactor and Prospector devised by Miles and Snow (1978). Sabherwal and Chan (2001) examined the impact of alignment on

perceived business performance and found that alignment influenced overall business success for Prospectors and Analyzers but not for Defenders. Profiles of technological deployment allied to the Defender, Analyzer, Reactor and Prospector business strategies showed a positive link between strategic activities and performance for Prospectors (Croteau and Bergeron 2001) and the converse negative link was found for Reactors.

Prospector organizations experience a changeable and dynamic environment where they need to seek out and exploit new products and markets. They achieve this by prospecting widely across markets to locate new opportunities coupled with a wide range of services or products. This environmental turbulence means that Prospector organizations must be consequently re-appraising their priorities to meet shifting demands. Technological innovation can lead to improved performance especially for Prospectors giving access to new markets and development of new products. It can also promote reconfiguration of the boundaries of the firm, for example, between banks and each other, between banks and their customers and suppliers and within the banks themselves. Pennings (1998) found a positive link between superior financial performance in American banks and the decision to pursue strategic technological innovation.

Defender organisations struggle with retaining market share and long term stable environments. Faced with the needs for cost efficiency, they focus on long-term planning with formal administration and procedures. Analyzer organizations are a mixture of prospector and defender organizations facing the twin problems of maintaining market share coupled with the need to exploit new markets and products. They need to maintain operational efficiency, driving down costs while simultaneously pursing new business opportunities. Rosenfeld and Servo (1990, p. 28) examined the tension between managing for stability and creating opportunities for change. "Large organisations face a dilemma. They must allow for change while still maintaining a high degree of organisational integrity." Reactor organisations appear not to have long term sustainable strategy or vision and, as such, the discourse on alignment is not relevant to them.

Sabherwal and Chan (2001) examined the impact of alignment on perceived business performance and found that alignment influenced overall business success for Prospectors and Analyzers but not for Defenders. Examining profiles of technological deployment allied to the Defender, Analyzer, Reactor and Prospector business strategies showed a positive link between strategic activities and performance for Prospectors (Croteau and Bergeron 2001) and the converse negative link was found for Reactors.

For Analysers, requiring a balance of flexibility for new opportunities and cost efficiency for stability, creates a tension that echoes the work of Rockart and Short (1994) who keenly understood the real connections in an organisation with their interdependence model of the development of technology strategy within an organisation. They saw a vitality and tension in organisations that IS management needed to manage in order to create systems that both supported and enhanced the business strategy.

Organisations combine and recombine resources to gain competitive advantage and economic growth. Hutzschenreuter and Israel (2009) found a significant body of literature supporting the creation of this dynamic strategy. Navarra (2005) argues that if gradual developments are planned incrementally, then it would be possible to create an ideal type of organisation where the interchangeability and recombination of resources would create an engine of growth.

Looking at poor performance Bergeron *et al.* (2004) found that poorly performing firms exhibited a misalignment of business strategy, business structure, IT strategy, and IS structure compared with their more successful competitors. Neirotti and Paolucci (2007) found similar evidence in their examination of failure, ambiguity of IS management capabilities and governance. Indeed, firms increased productivity through IT *irrespective* of IS management capabilities.

If aligning the IS goals and strategy to the business was difficult and ambiguous, perhaps this could be laid at the door of the business strategy and focus. Tallon *et al.* (2000) surveyed 304 business executives to locate the impact of IT on critical and strategic business processes. Perhaps unsurprisingly, IT investments were found to

have created the greatest benefits where goals were most clearly focused. Where there was a clearly articulated strategy combined with specific activities to promote both strategic alignment there was a higher perceived level of IT business value. Even greater benefit was seen where the investments were subsequently evaluated for their strategic benefit.

Turning to the subject of the performance impact of specific IT investments, Byrd *et al.* (2006) examined the influence of alignment between IT strategy and business strategy on the return on IT investment (ROI). The results of their study are similar to the findings of Cumps *et al.* (2009) and demonstrated a positive and beneficial link between strategic alignment and IT investment with firm performance. They found that alignment could be viewed as a two-way dialogue between the IS organisation and the business and that this dialogue was driven by the business strategy. They found that there were positive outcomes when IS planners understood the objectives, strategies and long-term plans of the business, IS planning was informed and directed by the business plans, IS managers were active participants in the strategic business planning process and where IS planning was achieved through co-operation and interaction between IS and business planners.

Karahanna and Preston (2013) examined the relationship between the CIO and the Top Management Team (TMT) on firm performance in the health care industry. Looking at relational, structural and cognitive social capital, they found that the existence of a high level of social capital between the CIO and other members of the TMT promoted alignment between the business and IT strategies which, in turn, promoted greater performance by the firm. However, Vessey and Ward (2013) point out that most studies look ing at performance can only examine a snapshot of that performance, not whether there is any sustainability in that performance. They suggest that there needs to be more complex and adaptive mechanisms if superior performance can be sustained over time.

Wiengarten *et al.* (2013) explore ideas of IT business value (ITBV) connecting it with a resource-based view of the firm to develop a framework which they believe will provide insight into how the internal competences of the firm may promote

alignment and thus superior performance. They point to the need to align IS resources with organizational and management to create capabilities which will lead to long-term performance improvement. In order to develop these capabilities, firms may need to redesign their processes and re-configure the resources that underpin them.

Deconstructing alignment at the level of the value chain, Tallon (2007) found a positive link between alignment and perceived IS business value in the main processes within the value chain. This highlighted the alignment of the IT and business strategy by looking at how IT supports individual processes rather than at how IT supports and enables the whole strategy. In this way alignment is an iterative, two-way process of limitations and deficiencies in both technology strategy and these shortfalls are repaired through this dynamic process.

Huang *et al.* (2010) focused on specific the performance impact of IS steering committees and governance-related communication policies. They were found to explain differences in the effectiveness of firms' use of IT and deemed to be a direct result of both the process to arrive at a decision and where decision rights are located in that process.

IT does not directly improve financial performance but increased IT spending was found to improve net profit (Shin 2001) but not performance ratios such as return on equity (ROE) where firms were more diversified and had less vertical integration. This would have great consequence for large financial institutions, especially those with ambitions to be global universal banks following the Citibank model where they found that performance declined with expansion.

Value is difficult to identify. Establishing organisational structures and supporting processes may not bring the anticipated value. Notwithstanding, it may be very difficult to glean much beyond *perceived* value and writers have found it almost impossible to track the value of alignment and associated process over time. Indeed, in uncertain environments, for information intense businesses the use of formal planning methods and process fails to bring value in comparison with the rational

adaptive approach (Kearns and Lederer 2000) with its emphasis on creating a pragmatic mix of formal and informal IS planning methods.

2.10 Them and Us

The entire debate on strategic alignment is predicated on the concept that there exists a boundary between an IS organisation and the business it services. This boundary can only exist if there is a lack of commonality between the two groups and this lack of commonality lies in the heterogeneity of functions and professional groups within organisations. Alignment is about building bridges across that boundary, finding chinks in the wall and pulling or pushing vital clues about the others' agenda, knowledge or beliefs through those clefts.

Ciborra (1997) challenged the idea that technology aligns to the business and suggests the converse might be true. Rather, the embedded nature of the IT infrastructure may bend the business towards technology. An historic investment may reduce choices and therefore enforce sub-optimal decisions.

Those inside an organisation may more readily identify with people belonging to the same group in another firm than in their home organisation. In their social capital view on alignment, van den Hooff and de Winter (2011) found that the IS and businesses teams view themselves and each other as separate institutions or occupational communities. Each community has a clear appreciation of their own function and role in the company and with a profound sense of the otherness of those outside. They examined the process of IT development rather than the entire IS function, arguing that development is where there is the most obvious link with business strategies. Mutual understanding needs to be achieved since its absence will have a negative impact on is the perceived performance of the IS organisation. They identify this mutual understanding as social capital made which is up of a number of separate elements. Structural social capital is defined as the connections between employees and their awareness of what other people know, cognitive social capital being a shared perspective or frame of reference and relational social capital where

there is mutual trust underpinned by shared norms. Van den Hooff and de Winter (2011) found that where this is dysfunctional or asymmetrical, the relationship between the IS and business communities begins to break down with failures in communications and trust.

To initiate change and make it real involves management commitment and a supportive context. Scarborough (1998) pointed out that overcoming the inertia of existing interests and routines is not a frictionless, automatic adjustment. The supportive context comes from a culture and structure that promotes change and learning while protecting the interests of the organisation. The IS community emphasises the importance of the transfer of strictly factual information between itself and the business community. Business lays stress on the value of mutual relationships and is much less interested in the underlying technology. van den Hooff and de Winter (2011, p.255) found that "where the IT department is often seen by the Business as having a focus on technology rather than the interests of the organisation as a whole, IT professionals often regard Business employees as technologically inept and insufficiently aware of the importance and complexity of IT." Ravishankar *et al.* (2011) found that sub-culture played an important part in the development of alignment and that supported the concept of tinkering and bricolage in creating "fit" as espoused by Ciborra (1997).

This disconnect is seen in many studies. In an Australian study carried out to determine the main gaps in IS management competences from the perspective of the CEOs, Khandelwal (2001) compared perceptions of critical success factors between the CEOs with those of the senior IS managers. The IS managers lacked business perspective and this led to serious misalignment and dissatisfaction by the CEOs. This is not true in all cases in all firms. Stemberger *et al.* (2011) found that it is possible for IS staff to acquire the support of top management in their firm if they have a role that supports that acquisition, appropriate business knowledge and skills, thus it is a combination of structure and capabilities that is needed.

In a study of the implementation of Enterprise Resource Planning (ERP) systems in high-tech firms, Chang (2006) compared perceptions of the success of integration

from both the IS and general management perspectives. The study found hostility between IS and the general management teams but at the same time their perceptions of the success of the overall implementation were closely correlated. However, IS management tended to rate the benefit of the implementation and its success measured as reliability more highly than the business.

Investigating perceptions of the IS and business relationship across 653 IS personnel and 503 business counterparts, Willcoxson and Chatham (2004) found significant differences between the two parties, especially on matters of perception of IT system utility and communication efficacy. The business side recognized the importance of IT to the future direction of the company but did not necessarily see the current IS organisation, systems and people as driving it forward. In contrast, the IS organisation recognized the value of both to the future of the company.

Business - IT alignment does not necessarily emerge as a high priority when organisations are focused on survival. Mehta and Hirschheim (2007) examined IT integration decisions made during mergers and acquisitions in three oil and gas mergers. The study ran from the pre-merger until the integration was thoroughly embedded. They examined integration decisions in the light of business-IT alignment. There tended to be misalignment in the early post-merger period as the new organisation structure settled and was fine-tuned with alignment only occurs two to three years after the merger. Alignment is less important than concerns about power struggles, relevant experience prior to the merger, and the need to generate synergies. Business - IT alignment did not emerge as a concern until the post-merger period.

In a study examining how outsourcing and the management of external and internal boundaries of the IS function impact IT alignment, Valorinta (2011, p.49) describes organisational boundaries and how alignment can be managed across these boundaries using decisions, people and artefacts. Boundary decisions are important to define where the boundary lies between IS, the business and the outsourced function. This prevents ambiguity and the creation of shadow organisations. Boundary spanners are people who coordinate the work between interdependent

units and functions. They create a common vision, transmit knowledge inside the organisation and liaise across boundaries, reducing confusion and conflict through their dual roles of "transferring" and "translation". Boundary objects are artefacts such as models, drawings, presentations and communications documents that make the shared knowledge real. In the outsourcing of routine operations, creation of well understood boundaries with clear roles and responsibilities allows the internal IS staff to solely focus on the needs and interests of the business without diversion.

Study of the available literature indicates that limited work has been undertaken to understand the true nature of the boundary between IS departments and their businesses. The existence of this boundary is a given in the extensive literature that exists to advise organisations on how to cross that divide. There is little discussion about why there is such a division between the IS department and the business and why the two parties do not share a sense of common purpose despite being inside the same organisation whether it is a public or private organisations. The social capital view espoused by van den Hooff and de Winter (2011) sees this as a problem as of social identity, that is, both the IS organisation and business teams see themselves as part of wider communities sharing experience, education, practices and expectations. Indeed, social identity may be key to the issue of this mutual mistrust, confusion and conflict.

2.11 External considerations

Since the 1990s, global financial markets have experienced the introduction of electronic communications networks (ECNs), increasing regulatory pressures, declining barriers to entry, commoditisation of technology and global mergers and acquisitions. Added to this has been the need to reduce costs and improve agility. The business horizon is driven by the relatively short cycle of commitments to markets and the need to generate short-term performance.

In European financial services, the impact of European Monetary Union and subsequent Eurozone extension, deregulation and privatisation, global

communications, electronic communication networks, pan-European rationalisation have removed the traditional barriers between the various players in the financial services industry (Boot *et al.* 1998; Nellis 2000). The ability to deliver creative and cost effective technological solutions beyond the basic technology was fundamental to achieving a sustainable and renewable competitive advantage. Evans and Wuster (1997, p.82) predicted "The big won't eat the small, but the swift will eat the slow." Channon (1996) examined technological innovation in the insurance industry and saw it as an enabler of strategy by building capability to develop systems that not only supported the existing processes but enabled managers and strategists to respond quickly, by-pass or eliminate historic procedures and disintermediate institutional structures.

The global financial crisis has further increased focus on risk management, transparency and regulatory scrutiny. Firms have merged, divested and realigned as direct consequence of the crisis. IS senior executives scarcely kept pace with one change before the next challenge presented itself without the luxury of reflecting on appropriate configurations and processes of governance.

The recent rise in environmental volatility challenges firms to be more agile in identifying and responding to changing markets. Whether alignment helps or hurts agility is an unresolved issue. Choe (2003) found that perceived environmental uncertainty had an indirect effect on IT strategic applications through the agents that created alignment. In an uncertain environment, a high level of strategic applications coupled with good alignment made a positive contribution to performance. The converse, stable environment with a very low level of strategic applications might negatively impact a firm's performance. Tallon and Pinsonneault (2011) found a positive and significant link between alignment and agility and between agility and firm performance. In more volatile markets, agility has an even greater impact on performance and, it might be expected, alignment would be even more beneficial.

El Sawy *et al.* (2010, p.835) found that the increase in environmental turbulence, the speed of organisational change, and proliferation of technologies have created an ecosystem that is "messy, complex, and chaotic". They believe that through

appropriate configurations, the IS function can help organisations build a strategic advantage to weather this turbulence. Xue *et al.* (2011) found that when environmental uncertainty increases, firms tend to respond by decentralizing IT infrastructure decisions to business units to enable responsiveness. As uncertainty further increases, they centralize those decisions to headquarters to coordinate a commonality of purpose. In these cases, IS governance is achieved by a trade-off between cost-efficiency of centralization and responsiveness of local solutions.

Reporting on the aftermath of the financial crisis, the Turner Review (2009, p.89) saw problems in organisational complexity and geographic coverage as well as the creation of complex, ill-understood products and a shadow (unregulated) sector as sources of institutional failure. The regulatory approach focused on "ensuring that systems and processes were correctly defined, rather than on challenging business models and strategies". The Financial Crisis Inquiry Report (2011) found that the sector had grown in the years leading up to the financial crisis and had become overwhelmingly powerful allowing it to ignore supervision and market regulation. Deregulation made the financial system especially vulnerable to the financial crisis and magnified its effects. Neither report pointed directly to any failures of internal governance as a source of problems.

Turbulence in the competitive landscape, rapid organisational change, regulatory pressure and the growth of new financial services technologies have all contributed to create an environment where agility and alignment are seen as preconditions for success.

2.12 Financial Services – alignment literature

Relatively few studies have looked at business - IT alignment in financial services. There exist a small number of case studies but the sector most frequently appears as an element in cross-sector studies. There is no literature in the investment management sector. Many studies focus on retail banking and insurance which do not share similarities with investment management. Wholesale or investment

banking firms may share more in common with investment management firms, especially where those investment managers are owned by banks.

In an investigation of the relationship between the use of geographic and IT scope in international banking, Peffers and Tuunainen (2001) found consistent either high or low levels of IT married with geographic scope resulted in better firm performance than inconsistent use, that is, where high levels of one are matched with low levels of the other. This set the scene for IS departments to deliver technology that supported new business models while enabling rationalisation and integration. Consolidation has reduced the number of banks with a distinct difference being seen between large and small firms. In a review of US banks, Tallon (2010) found small banks enjoyed higher profit margins than large banks and were seen to focus a service-oriented business strategy through customer intimacy. By contrast, large banks focused on productivity and throughput with IT remaining wholly operations focused.

Leading up to the global financial crisis, IS departments were expected to deliver more under the twin pressures of cost management and flexibility. In increasingly complex corporate IT environments some larger institutions have sought the implementation of a dedicated Enterprise Architecture Management (EAM) function as a way of maintaining control while at the same time aligning with the business strategy Schmidt and Buxmann (2011, p.169) found in many cases "multi-polar and incremental evolution ... is not necessarily aligned with global and long-term corporate objectives". In their study of 14 Swiss and German banks as they implemented specific EAM functions, they found that despite the best intentions at the corporate level, distributed, local short-term solutions abounded. Indeed, the architecture was so messy that the companies were frequently unable to implement changes and upgrades in a timely and efficient manner. In some cases, so much organisational energy was expended on the management of the architectural mess that there was no room left for the proposed synergies and organisational benefit.

Avison *et al.* (2004) analysed the use of Henderson and Venkatraman's Strategic Alignment Model (SAM) in a single financial services firm. The study concluded

that it was a valuable tool for organisations to understand the level of alignment and how it could be managed and extended for future benefit.

Finding a gap between academic theory and industry practice Teubner (2007, p.123) undertook an in-depth review of a German financial services company. Although the practitioners in the firm liked the idea of the academic literature they did not really use it. Further he observed a contrast between the theoretical view of the role of the CIO as a contributor to the overall firm strategy and the practical reality of that of a service provider and believed that there are "misleading academic assumptions about the role of IT management in practice" which may also impact on the alignment literature.

These studies do not examine alignment as a special interest but rather as part of a wider view on a specific subject such as EAM examined by Schmidt and Buxmann (2011). Cross-sector studies such as Fink and Neumann, (2009) and Mohdzain and Ward (2007) have no explicit interest in the market and regulatory pressures encountered in the sector and how they may impact the pressure for alignment. It appears that despite the existence of a wide range of financial services practitioner journals with specific IT focus, this is an area overlooked by academic writers.

2.13 Research gaps

Analysis of the literature suggesting research gaps is shown in table 2.2 below and shows the gaps as they appear in the preceding sections of this chapter. The table indicates areas which may be of interest to scholars with examples of where there may be prior or current research. These gaps are discussed in more detail in section 2.13.1 to 2.13.4 below. This is not an exhaustive study of all studies and papers but it suggests gaps which provided opportunities for the research direction for this study and may be of interest for other scholars.

Table 2.2 Research gaps

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Avison *et al.* (2004)	Financial services	Similar research in other organisations	Exploring alignment below CIO and the TMT (Onita and Dhaliwal 2011)	Yes : to use the model as a predictor of alignment / performance	Completely
Chang (2006)	Them and Us	Same study but with wider range of respondents to include companies with a less positive view on IT	Long-term relationships and inter-organizational systems performance (Chang *et al.* 2010)	Yes : to understand importance of relational management on perceptions	Not available
Chen *et al.* (2010)	Definition	Further study on organisations which do not have an explicit IS strategy Examination of organisations where there appears to be an overlapping strategy types, rather than mutually exclusive.	Empirical investigation of the relationship of IS strategy and firm performance. (Leidner *et al.* 2011) Conceptualizing the dynamic strategic alignment competency (Baker *et al.* 2009)	No : this is a well-researched subject area	Not available

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Cumps *et al.* (2009)	Strategic planning	Different alignment practices Greater sector and geographic spread	Conceptualizing the Dynamic Strategic Alignment Competency (Baker *et al.* 2009)	Yes : to explore if these rules are generalisable.	Small part
Fink and Neumann (2009)	Definition	Long-term analysis not supported by this study	The role of IT infrastructure flexibility as enabler of organizational responsiveness and competitive advantage (Bhatt *et al.* 2010)	Yes: although this is a well-researched subject area it would be valuable as a specific study in financial services.	Small part
Grover and Segars (2005)	Configuration	Further process dimensions not covered in this study	Implementation of the EAM function (Schmidt and Buxmann 2011)	No : this is a well-researched subject area	Not available
Kearns and Lederer (2004)	Strategic planning	Deeper exploration of environmental uncertainty	Information Systems Planning in an Uncertain Environment (Mirchandani *et al.* 2012)	Yes: although this is a well-researched subject area it would be valuable as a specific study in financial services.	Small part

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Kearns and Lederer (2000)	Strategic planning	Deeper study to investigate fully why the impact of alignment of the business plan with the IS plan does not always presage competitive advantage from the perspective of other senior executives	Paradoxical effects of institutionalisation on the strategic awareness of technology in organisations Baptista *et al.* (2010)	Yes: valuable as a qualitative study comparing perceptions in financial services.	Small part
Neirotti and Paolucci (2007)	Performance outcomes	Comparison of IT management variables impact on operating profit	Assessing the importance of industry in the adoption and assimilation of IT: Evidence from Italian enterprises (Neirotti and Paolucci 2011)	Yes: to compare perceptions of value against financial performance.	Completely
Preston and Karahanna (2009)	Definition	HR practices to promote CIO business knowledge	Unlocking the performance of the Chief Information Officer (Peppard 2010)	Yes: to compare practices in financial services.	Not available

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Reich and Benbasat (2000)	Definition	Investigations of shared domain knowledge, trust and commitment	Social capital and knowledge management (van De Hooff and De Winter 2011)	Yes: a deeper quantitative study comparing perceptions across firms in financial services.	Completely
Tallon *et al.* (2000)	Performance outcomes	Correlation of perceptions with value based approach	Value chain linkages and the spillover effects of strategic alignment (Tallon 2010)	No : this is a subject area which is the subject of current study	Not available
Tallon and Pinsonneault (2011)	External considerations	Effect of lag on evidence of success of investment in IT	No information available	Possibly : but this is a subject area which is not in the scope of current study	Not available

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Tiwana (2009)	Definition	Comparison across different stages of project lifecycle Comparison between internal and outsourced projects Exploration of different models of governance for IT service management.	Knowledge Sharing in Information Systems Development: A Social Interdependence Perspective (Tiwana *et al.* 2010) Tiwana and Konsynski (2010)	Yes: deeper studies examining different models of specialist knowledge.	Not available
Valorinta (2011)	Configuration Them and Us	Wider studies across sectors and geographies.	None	Yes: a sector-specific study of firms in financial services.	Not available
Van den Hooff and de Winter (2011)	Them and Us	Wider studies across sectors and geographies.	None	Yes: a sector-specific study of firms in financial services.	Not available

Reference	Section	Potential further study	Has already been followed up	Appropriate for further research	Financial Services engagement
Willcoxson and Chatham (2004)	Them and Us	Wider perspectives on the IT / business relationship	van den Hooff and de Winter (2011)	Yes: sector-specific study of firms in financial services developing work of van den Hooff and de Winter (2011).	Not available
Xue *et al.* (2011)	External considerations	Wider perspectives on the IT / business relationship to enable generalisation.	None	Yes: a sector-specific study of firms in financial services.	Not available

2.13.1 Rational-adaptive approach to governance

In uncertain environments, for information intense businesses such as financial services the use of wholly formal planning methods with strict adherence to process seems to be less valuable than a rational adaptive approach (Kearns and Lederer 2000) which is pragmatic engaging both formal and informal IS planning methods. Strategic alignment and the governance models that flow from that alignment may be situational and even transient. Appropriate convergence appears to bring benefits and the converse is true. It is not simply a case of maturity. Indeed, the IS department may have a wholly different maturity profile to the business. Reporting lines and structures appear to be contingent on business strategies which will be evolving and shifting at the same time. Establishing organisational structures and supporting processes may not bring the anticipated value.

The rational adaptive approach appears to offer greater success and would benefit from further study within the context of financial services and other similarly turbulent environments.

2.13.2 Flexible IS organisations

Navarra, (2005, p.243) argues that incrementally planned, gradual developments allow organisations to become adaptive and "chameleon-like", especially in turbulent environments. However, where organisations are unable to plan gradual developments, such as the overnight failure of a major financial institution, then the environment may be catastrophically turbulent.

Further study of chameleon IS organisations which are both flexible and robust and have withstood major changes as a consequence of the financial crisis would be valuable not only to the financial services sector but also to other sectors which are subject to major structural or regulatory challenges combined with a high level of information intensity.

2.13.3 IS organisations in financial services

Relatively little study has been focused on IS organisations in financial services. A number of cross-sector studies (Fink and Neumann 2009; Mohdzain and Ward

2007) have included financial services firms but with no specific interest in the sector. The small number of financial services specific studies (Peffers and Tuunainen 2001; Schmidt and Buxmann 2011; Teubner 2007) have looked at alignment as one aspect or symptom rather than being of interest in its own right. Avison *et al.* (2004) looked at the use of the SAM model Henderson and Venkatraman (1993) as an assessment tool for evidence of alignment but not the robustness of that alignment.

It seems unlikely that this gaps exists because alignment does not hold any interest for the sector since there is a thriving consultancy business, for example, CapCo, Oliver Wyman and AlphaFMC providing support for firms seeking to achieve alignment as they undergo change.

A gap appears to exist between academic study and consultancy practice and knowledge that could be filled by rigorous academic study providing benefit to both.

2.13.4 Understanding the boundary between business and IS

Study of the available literature, both at a broad level and specifically relating to financial services, indicates that limited work has been undertaken to understand the true nature of the boundaries between IS organisations and their businesses. The existence of the wall is assumed and there is a well established corpus describing how organisations can build bridges across the divide through proximity, knowledge sharing and process. There is little discussion about why there is such a division between the IS department and the business. This theme is common across sectors and occurs in both public and private organisations. In their social capital view on alignment, van den Hooff and de Winter (2011) allude to this problem as being one of social identity, that is, the IS organisation sees itself as part of a wider IS community with which it shares experience, education, practices and expectations. In fact, they may have more in common with those outside their firm than their internal peer group.

Business and IS organisations may see themselves as part of subtly separate organisations. They may experience differences of expectations and understanding

which are exacerbated by the failure to share norms, practices and trust. They may believe that they have more in common with others in their professional field who share more persuasive norms and expectations. This thesis pursues this research gap and will to seek to understand alignment within investment management firms using a framework of social capital theory which is developed in Chapter Three.

2.15 Summary

Strategic alignment continues to be debated. Its very existence continues to be problematical with there being no simple definition of alignment. Many writers agree that there are significant performances benefits where alignment can be identified and studies have searched for evidence of alignment, such as shared planning processes or supportive structures in combination with performance outcomes. However, alignment may be ephemeral and may only represent a brief encounter rather than a long term, sustainable relationship.

In the literature, there exists an assumption that the boundary between the IS function and its business will always exist and that alignment is always work-in-progress to build conduits across that boundary. This difference between IS and the business, "Them and Us", has attracted some small interest in the field of social identity but has mainly been noted as part of the reality of an essentially alien dialogue.

Strategic planning and process has attracted a great deal of attention in the literature, especially in the IT journals. The direction of the planning process and whether it is always pushed from the business, or part of an iterative mutual cycle or whether there can be any useful push from the IS function has been the subject of several empirical studies. Sector, importance of IT to the business strategy and the level of turbulence experienced by the firm all play a part in determining the engagement in planning and the level of uniformly applied process.

Studies into configuration of the IS and business organisations have looked at simple issues such as reporting lines and for signs that a well-aligned configuration supports the performance of the firm. This internal architecture is seen as key to success and is a natural corollary to the resource-based view of the firm. To some extent,

configuration superseded the early debate about maturity. The entire view of maturity as key to alignment was based on the premise that the business and IS departments marched at the same pace and with the same goals and desires. Heterogeneity of functions coupled with the acknowledged divides between IS and business, have left the maturity discourse behind.

In reviewing studies examining external considerations in financial services, it is noted that the environment is turbulent with a high level of information intensity. Market and technology changes from the early 2000s required IS organisations to be flexible, agile and cost-sensitive. When combined with the outcomes of the global financial crisis, organisations are required to absorb and integrate or divest and these activities have placed an even greater burden on those IS organisations.

This chapter has described the review framework and the approach taken to the identifying relevant literature. It continued by setting the context for the strategic alignment debate and the characteristics of strategic alignment. The chapter then examined literature the how the existence of alignment may be seen in and driven by configuration, structure and reporting lines, process and the use of strategic planning. It then explored the literature focused on performance outcomes of strategic alignment and how business - IS boundaries occur. The chapter viewed external considerations in order to set the market context for financial services and investigated studies specific to financial services. The chapter concluded with a discussion of the themes which have been uncovered and research gaps.

Chapter Three - Conceptual Framework

3.1 Introduction

This chapter examines the role that social capital plays in organisations and proposes a framework linking social capital to business - IT alignment. In creating alignment between the IS and business communities, it is necessary to generate a shared perspective and it is proposed that social capital is central to the development of such a common platform. As was seen in Chapter Two, the failure of alignment is seen in many organisations and in others its existence may only be transitory.

Firms which overcome the natural barriers between business and IS functions build bridges and links between them and create alignment. These bridges may be built consciously and purposefully or may be the result of happenstance. Social capital built between these heterogeneous groups, as opposed that built within a group, is a prerequisite for the creation of alignment. Different organisations in the same field which experience the same competitive environment may have different levels of alignment and it may be possible to understand and explain these levels of alignment as an outcome of social capital.

This chapter continues with section 3.1 which reviews of the background to social capital in the context of alignment. Section 3.3 looks at the underlying concepts which inform social capital including social identity theory and social network theory. Section 3.4 examines the components of social capital itself and the chapter continues with a dimensional breakdown of social capital in section 3.5. It then goes on to explore how writers have seen a dimensional quality to social capital in section 3.6. The different types of social capital are explored in section 3.7 and its positive and negative impacts are reviewed in section 3.8. Section 3.9 goes on to look at the performance impacts of social capital and the way that it is created is investigated in section 3.10. Section 3.11 introduces a new framework to support the understanding of social capital and section 3.12 looks for signs of alignment. There follows a discussion in section 3.13 and the chapter concludes with a summary in section 3.14.

3.2 Background

Some organisations seem to manage to overcome the problem of misalignment more than others. A great deal of effort has been undertaken by by academic writers, practitioners and consultants to identify how this can be overcome. In Chapter Two, structures, relational approaches, knowledge management and tools are discussed and all of these approaches achieve some benefit some of the time. Some approaches clearly create value in some circumstances for example, Byrd *et al.* (2006) found a positive and beneficial link between strategic alignment and IT investment with firm performance and the return on IT investment (ROI). Other approaches appear to work in organisations operating in certain types of competitive environments and several writers have found the Miles and Snow (1978) categorisations of Prospectors, Analysers, Defenders and Reactors valuable in understanding the competitive landscape which organisations experience. However, there is no matrix where an approach to alignment complete with appropriate tooling can be read off by selecting the correct cell in the matrix to fit a given organisation. Furthermore, an approach that may bring successful alignment will not necessarily be durable and continue to create alignment as either the internal or external environment changes.

Writers such as van den Hooff and de Winter (2011) note that the business and IS communities often seem to have little in common with each other and therefore experience difficulties sharing objectives, deliverables and even communicating with each other. Indeed, the fact that they are two communities is central to the problem. The heart of the problem lies in the fact that the business and IS organisations do not perceive themselves as part of a common, unified organisation. Indeed, they frequently see themselves as sharing little (Khandelwal 2001; van den Hooff and de Winter 2011). Where a shared experience is observed this may be through factors such as education, training and background and is context specific eroding over time as the individual actors on each side move on. Clearly, if the internal and external environments remain relatively stable and there is a high level of alignment, it may be possible to sustain this alignment over a long period. If change occurs slowly, then

as one relationship declines or drops off, it may be replaced with another one which is equally fruitful. However, if the environment is turbulent or even fractured, such as when a takeover occurs, then alignment may disappear very quickly.

In van den Hooff and de Winter's 2011 study of the possible impact of social capital on alignment, they identify the absence of social capital as providing insight into the failure of IS and business organisations to align effectively. Their findings uncovered a lack of social capital on all dimensions when looked at from the point of view of the business. It was less clear cut when seen from the perspectives of the IS department or from that of the Application Specialists but even so, it was not a reassuringly positive picture. Karahanna and Preston (2013) found that the existence of social capital between the CIO and the TMT enhanced organisational performance. This chapter starts with the premise that the presence of social capital promotes alignment and its absence is a destroyer of alignment.

3.3 Social capital – underlying concepts

The three concepts of social identity, social capital and social networks need to be understood together as three overlapping and interdependent concepts. Social identity is that which gives individuals identity within a group and, indeed, they will belong to a number of groups which may be separate or related groups, and within that they may belong to a number of sub-groups. Social capital is that which gives the groups meaning: trust, commonality of purpose and engagement to achieve that purpose. Social networks are the transport mechanisms that allows social capital to flow across and inside groups.

Many of the formative studies on social identity, social capital and social networks were focused on not-for-profit organisations such as local government, hospitals and universities and even family and village life (Collier 1998; Welsh and Pringle 2001). In more recent years, authors have sought to extend the theories to commercial organisations such as Burt's study (2000), Houghton *et al.* (2009) and Karahanna and Preston (2013). The concepts appear to be as valid in the social environments found

in for-profit organisations as in other contexts.

3.3.1 Social Identity theory

The theory of Social Identity was developed by Tajfel and Turner (1979) to understand the intergroup discrimination through a psychological lens. In an earlier work, Tajfel (1974) had attempted to identify conditions that would lead group members to exercise discriminatory behaviour in favour of their group and against members of another group, that is, in-group selection versus out-group discrimination.

Identification describes the process where individual actors perceive themselves as belonging to a group in common with another person or group. This may result from their membership in that group or through the group's existence as a reference group whereby , "the individual takes the values or standards of other individuals or groups as a comparative frame of reference" (Merton 1968, p288). Kramer *et al.* (1996) found where an individual actor identifies with a group, they develop a concern for the success of shared processes and outcomes, which, in turn, enhances the likelihood that the opportunity for exchange or reciprocation will be recognized by members of the group. Therefore, identification is a powerful influencer of the expectation of benefit and reciprocation.

Social identity theory proposes that a person has not one, social self, but rather several selves corresponding to widening circles of membership different groups. However, it is likely that some groups may form sub-groups in a larger group. Additionally, there may be overlapping groups with coincidental interests, that is, membership is purely accidental and not based on complex inter-connections. However, the reality is likely to be much more complex, with interrelationships based on many different common interests. Moreover, there can be many more informal and loosely affiliated groups, such as followers of certain trends, teams or interest groups which do not lend themselves easily to this kind of illustrative mapping.

3.3.2 In-group and out-group behaviours and bias

Different social contexts may engender different behaviours. Each will be constructed according to the currently dominant group experienced by an individual and will indicate the "level of self" (Turner 1987). Additionally, an individual has many "social identities" drawn from that person's perceived membership of multiple social groups (Hogg and Vaughan 2002). Therefore, an individual-based perception of what defines the nature of "us" in group membership is key to understanding the operation of that group.

Importantly, social identity theory focused on self-categorisation by members of the in-group. The individual identifies the attributes of the out-group as being unlike those of the in-group as well as the in-group having its own unique set of the attributes. Positive distinctiveness lies in people's sense of who they are through a collective understanding of what makes the group. This is defined in terms of 'we' rather than 'I'. Turner and Tajfel (1986) showed that individuals categorizing *themselves* as belonging to a group was sufficient to trigger bias towards that group. Having a group membership leads individuals to make positive differentiation towards the in-group by drawing a less-favourable comparison with an out-group, thus creating a sense of self-esteem in that individual.

A group may identify itself as different from another group through a selection of differentiators which act as proxies for the group to seek its own identifying characteristics because they are different to the characteristics of other groups. Actors seek to establish a positive social identity for themselves by favourably comparing their in-group versus an out-group (Operario and Fiske 1999). Tajfel and Turner (1979) describe variables to the identification of in-group bias:

Table 3.1 : Variables to the identification of in-group bias (Source: adapted from Tajfel and Turner 1979)

Variable	Identifier
the extent to which individuals identify with the in-group to support their internal view of themselves	" I am part of ***this*** group because I have the same attributes as the group"
the extent to which comparison can be made between groups	"Our group is like ***this*** because we are not like ***that***"
the validity of the out-group group for comparison	"We share some of the same constraints as the out-group but we are different in our attributes"

In-group bias is an important contributor to the understanding of failures of alignment since, implicitly, there must be some difference identified by the in-group vis-a-vis the out-group. In-group identification and bias may not be seen by the participants as a source of an underlying misalignment. If the in-group continue happily with their clear in-group bias and out-group differentiation, then they may not see the need to reach out to the out-group and, therefore, behaviours may reinforce a lack of alignment. It is therefore necessary to start with an appreciation of the nature of the in and out-group biases.

3.3.3 IS and the Institution – how IS identifies itself

Several writers (Avgerou 2000; Baptista *et al.* 2010; Ciborra 1997; Ciborra and Andreu 1998) have striven to understand the value of IT to its organisation, seeking an institutional context for the position of IT relating to how strategy is built and implemented, how organisational models are derived and whether those models enable the strategic direction of the business. Importantly for the purposes of this study, it can be argued that IS has become an institution in its own right with self-sustaining processes to support and promote change and innovation. Avgerou (2000, p.262) claimed that the institutional elements of IS can be discerned as "an elaborate

set of professional expertise for the development and use of IT applications" and identifies institutional elements of IT arising from the development of a network of industries which encompass hardware manufacturers, telecommunication services providers, software development firms, consultants and units which lie inside the ``user" organizations which themselves create internal processes and adapt tools and services provided by external sources. Avgerou (2000) describes these institutional elements as a complex code belonging to professional expertise which is employed in the development and use of IT applications and products, sets of regulations for IT usage such as codes of practice and regulatory requirements and professional societies promoting professional identification across industries, for example, the British Computer Society or sector specific fora for example, The Technology Council with its specific relevance to investment management technologists.

There is strong evidence of the perception of IS as a separate entity even within an organisation. Several writers have noted the internal-focus of IS departments (Chang 2006; Khandelwal 2001; Willcoxson and Chatham 2004) and the failure of business management to understand and appreciate the potential impact of IT for the delivery of business transformation and day-to-day stable running of the business. If a professionalised IS organisation fails to convince its business of its value, it may well be seen as internally focused. In the last 40 years, there has been a growth of university IT education supported by continuing professional education combined with standards and tooling and project management and process design tools. This has led to increased levels of professionalisation and the consequent creation of a professional identity. Where the business also has powerful professional norms then this can create the possibility of misunderstanding and misalignment. This will come into sharper focus later in this chapter when we look at the power of norms within social capital. Where professionalising norms have a powerful influence on at least one side of the relationship and there is no clear endeavour to create linkages, the group with a clear identity may find closer relationships outside the organisation than inside. In a sector with a high level of mobility such as financial services where there is also a high use of temporary staff, the churn of professional staff will serve to reinforce external networks, rather than build an internal identity across the firm.

Where there is a lesser identification with the internal team than with a wider, professionalised cluster, that is, there is not a particularly strong bond between the IS and business communities and the IS team has strong external relations through such means as mobility, path dependency, education and professional networks, then the IS department may choose mechanisms of alignment that reflect their perception of other organisations.

DiMaggio and Powell (1983, p.154) noted that "organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful. The ubiquity of certain kinds of structural arrangements can more likely be credited to the universality of mimetic processes than to any concrete evidence that the adopted models enhance efficiency." Regarding the question of alignment, it might be supposed that IS organisations with poorly defined understanding or even knowledge of the business strategy might model their alignment approach on peers who are seen to be successful. In these cases, they may not fully understand the competitive landscape for the group which is being copied and may find themselves imitating the form without generating the desired outcome.

Further they found evidence of the development of organizational norms for professional or technical managers and their teams. "Two aspects of professionalisation are important sources of isomorphism. One is the resting of formal education and of legitimation in a cognitive base produced by ... specialists; the second is the growth and elaboration of professional networks that span organizations and across which new models diffuse rapidly." (DiMaggio and Powell 1983, p.152). Professional and trade bodies were seen as the instruments of the definition and promotion of standards of professional behaviour, codes of practice and standardised methodology. Where these standardised norms exist, they create a pool of professional workers wholly can move across their employment market with great ease and who will introduce and reinforce the norms in new organisations.

DiMaggio and Powell (1983) codify the reasons why organisations are similar and identify the types of pressure that lead to this isomorphism. Mimetic isomorphism leads organisations to model themselves on the same lines as other organisations.

Normative isomorphism is most frequently driven by the professional and accepted standards of a sector and coercive isomorphism is forces a model upon an organisation which is either prescribed by the government or regulator or which is enforced by participants in the sector. Turning to the explicit and subtle pressures that might force particular choices on an organisation, DiMaggio and Powell noted that "coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion. In some circumstances, organizational change is a direct response to government mandate" (DiMaggio and Powell (1983, p.150). It is important to note that they do not define a narrow meaning that coercive pressure only encompasses explicit and rule or law based pressure such as that expressed by a regulatory body. Rather, they also see subtle and informal pressures which may be derived from industry-wide practice and which may tend to bend organisations in a particular direction.

Tolbert and Zucker (1996) contributed to the theory of maturity of organisations as they develop habits and forms of behaviour, finding a bias toward the stability of structure. In a later analysis (Tolbert and Zucker 1996) they developed a three step process of institutionalisation : habitualisation, objectification and sedimentation. Initially, when organisations are in the habitualisation phase they will tend to demonstrate imitative behaviour seeking to model themselves on other successful organisations in their sector. As they move to the objectification phase, they will demonstrate both imitative and normative behaviour. In the final mature, sedimentation phase, it will move through to wholly normative behaviour. Tolbert and Zucker do not discuss coercive pressure. From this it can be anticipated that where organisations are in a state of churn, they will tend towards imitative behaviour, that is, they do not experience stability and in the absence of an equilibrium, they will attempt to model structures and behaviours of others in the sector. IS organisations could be expected to find structures and behaviours from IS teams in other firms, especially where there is a compact and mobile consultancy movement. Nevo *et al.* (2007) found that where IT activities were outsourced the

external parties do not share the generalised norms of the organisation and this leads to a dilution of those norms.

There is much focus on the positive impact of institutionalisation of IS into business routines but there can also be a negative side. Baptista *et al.* (2010) explored how once a technology is institutionalised, that is, it has reached the "sedimentation" phase in Tolbert and Zucker's terms, it can become invisible to management so that its strategic potential is under-exploited and at the same time business risks associated with that technology are ignored. In a case study of the development of an intranet in a retail bank in the UK over 5 years, they described a paradox how as new technology becomes more deeply embedded in business processes and routines, it also tends to become invisible or even irrelevant to senior management.

Bringing together his previous work on strategic alignment, Ciborra (1997, p.68) reflected that, while strategic alignment may be held to be a conceptual truism enabling universal benefit, in everyday business it is rarely implemented with the decline of strategy making into declining into tinkering leading to drift in the IT infrastructure. He noted that the embeddedness of the IT infrastructure and application landscape in the company may, in fact, incline the business towards alignment with IS rather than IS aligning with the business.

3.3.4 Social Network theory

Social Network theory views social relationships as nodes and ties, nodes being the individual actors within the networks, and ties being relationships between actors. The network can also be used to determine the social capital of individual actors. The power of social network theory is useful to explain many real interactions but not the behaviour of individuals, rather it can be used to elucidate the network itself. Social networks can describe informal connections that link actors together, as well as associations and connections between individual employees both within and across companies. These networks provide ways for companies to gather information, deter competition, and even collude in setting prices or policies.

Much of social capital is embedded within networks of mutual acquaintance and

recognition (Bourdieu 1986). These networks of relationships bring access to further resources and assets. Thus it can be argued that social capital comprises the network and the assets that be made available via that network (Bourdieu 1986; Burt 1992).

Networks are characterised by three elements : size, density and diversity. The greater the number of nodes in the network, the greater the probability that access to a particular resource will be available. Networks may be sparse or dense. The most dense network will be completely closed on itself. Wellman (1998) found that in dense networks with higher levels of interconnectedness will be better coordinated but the resource is more likely to be uniform. Sparse networks are less well coordinated with structural holes. Exchanges take place less easily but are more varied.

Characteristics of the members of the network is termed Network Diversity and relates to the characteristics of the members within a social network. Lin and Dumin (1986) found that there was a link between the social position of individual network members and and the nature of the resources to which they may have access. Homogeneity of group members may contribute to building relationships between actors.

Closure describes the extent to which a network is closed in on itself, that is, all the members have relationships with each other. The more this occurs the denser the network is said to be. Closure can lead to the development of high levels of social capital. Strong communities typically have dense relationships (Bourdieu 1986). Norms, group identity, and trust are promoted by network closure (Coleman 1990; Ibarra 1992). Where formal organizations exist there will be a degree of closure created by the formal organisational boundaries such as legal and financial constraints (Kogut and Zander 1996).

3.4 Social Capital theory

Social Capital theory has been the subject of criticism in that its nature has not been well-understood nor the concept sufficiently elaborated. The multiple strands making

up social capital need to be seen as contributing to the whole, rather than picking out single aspects (Hean *et al.* 2003). Social capital suffers from a problem of definition and has been described as meaning "many things to many people" (Narayan and Pritchett 1997). In a review of contemporary literature and research trends, Adam and Roncevic (2003) similarly identify a range of views and disparate approaches which come together to contribute to a more complete understanding of the core ideas underpinning social capital. After grappling with the conceptual issues surrounding social capital, they identify problems in both its operationalisation and measurement.

In one of the seminal texts on the subject, social capital has been defined as the "resources embedded in social networks accessed and used by actors for actions" (Lin 2001, p 25). Coleman (1988) found that social capital is a feature of disparate social structures and "is not a single entity, but a variety of different entities having two characteristics in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors - whether persons or corporate actors - within the structure. " (Coleman 1988, S98). Coleman (1990) and Bourdieu (1989) examine the impact at the level of the individual and therefore, will not be examined in further depth in this chapter since its focus is on group level interactions. However, it should be noted that social capital exists between individuals and, consequently, can be accumulated by individuals to purposefully generate relationships to create benefits both for themselves as individuals or for their social group. Benefits may be social and economic, tangible or intangible, of short or long duration (Lin 2001).

Adler and Kwon (2002) see goodwill as fundamental to understanding social capital and that goodwill exhibited by people towards each other is a valuable resource. They define goodwill as "the sympathy, trust, and forgiveness offered us by friends and acquaintances ... If goodwill is the *substance* of social capital, its *effects* flow from the information, influence, and solidarity such goodwill makes available." (Adler and Kwon 2002, p.18).

The complexities of the definitions above suggest that social capital is paradoxically

both widely understood and difficult to give a precise definition. Social capital is context dependent but may be short lived or enduring and may manifest different forms. Effective forms of social capital are exhibited in relationships between individuals and are meaningful and, to be most effective, durable (Bourdieu 1986, p. 249). Where they exist, they can be mapped as networks of interactions and communications (Fukuyama 1995; Lin 2001; Putnam 1993; White 2002).

3.5 Bonding, bridging and linking social capital

Not all social capital has the same meaning or value to the participants in a group or relationship. The social capital that brings a group together and bonds it, may not be available to those outside the group. Social capital that bridges different groups, may not be available to everyone in either group. Similarly, that social capital that links groups of different status may be accessible only to selected members in each group. Social capital can be seen as promoting cohesion. Bonding relations create links of attachment between relatively homogeneous individuals and finding and reinforcing similarities, bridging relations create links between relatively more socially distant individuals or groups and spanning these horizontal dissimilarities and linking relations create links between individuals or groups of different social strata.

Ghosh and Scott (2009) saw bonding activities as promoting improved generalised trust, linking activities as encouraging identification and bridging activities as key to building knowledge. Weak ties supply bridging social capital spanning sparse networks and linking disparate clusters in a social network. By contrast, strong ties provide bonding social capital that tend to be dense and concentrated. Both can be contributors to superior organisational performance (Adler and Kwon 2002).

Bonding social capital is "a force that binds and lubricates, facilitating efficient internal use of such resources by promoting collective action and co-operation" (Shipilov and Danis 2005). Bonding social capital looks inward into the group and focuses on shared norms, trust and co-operation. It is enabled by strong ties that are in regular use, multi-channel and under constant renewal (Coleman

1988; Fukuyama 1995; Granovetter 1973). A high level of homogeneity leads to bonding relations giving in-group members access to resources, for example, funding to progress an initiative that generally provides access to important resources. When considering groups, bonding social capital generated by homogeneity can engender a high level of trust. As discussed above, trust is a valuable attribute leading to greater cohesion in potentially risky situation.

Bridging social capital enables lateral links to external actors who can facilitate mobilisation of resources which are not available within the span of the immediate group, that is, it reaches outside the immediate group and even across formal organizational boundaries. A weak level homogeneity requires bridging relations to create social capital. Bridging relations are lateral, offering access to resources that are not available within the immediate in-group. However, this weak level of social homogeneity opens new opportunities for linkages to be created and this diversity can add value to initiatives. Bridging social capital is engaged through brokerage creating access to resources, information, and other benefits such as influence. It is based upon weak ties that are in less frequent use, are not subject to constant renewal but are nonetheless, extant, and exist between otherwise disconnected groups (Burt 1992, 1997; Granovetter 1973; Knoke 1999).

Linking social capital enables vertical links to actors who can facilitate mobilisation of resources which are not available within the span of the immediate group, that is, it reaches upwards from the immediate group and may even span boundaries in a multi-unit organisation. As with bridging social capital, brokerage opens doors to resources, information, and other benefits. In the same way it is based upon weak ties in less frequent use, which are not in regular use where they are constantly being renewed but can be made live in the right circumstances. Where of homogeneity of status does not appear to exist in status, heterogeneity can promote linking relations. Linking relations offer access to resources across vertical boundaries. Moving upwards, this makes resources available to actors with power or authority and downwards, some power may be devolved to lower level actors.

3.6 Positive and negative impacts of social capital

Social capital creates a number of benefits : information flow, influence and in-group cohesion. Information is the chief benefit created through social capital enabling access to a wide range of sources of information, enriching the quality, relevance and timeliness of that information. Where there exists a strong level of social embeddedness, mechanisms are created for swift and reliable exchanges of information that can be tuned to the necessary level of granularity (Uzzi 1997).

Secondly, influence arises from social capital engendering a level of power and control and thence driving the achievement of goals. Examining bridging capital, Burt (1992) found that where disconnected groups are joined, actors creating that bridge are able to exert influence and control over outcomes and subsequently exert greater power. Furthermore, managers who are able to span gaps accrue more power because they are able to exercise control over projects connecting other groups. The effect of this brokering ripples outwards to the wider group and does not just apply to the managers who create the initial bridge (Burt 1997).

Finally, social capital creates in-group solidarity. The existence of powerful shared norms and beliefs, linked to closure of the social network, promote compliance with group and local rules and maintenance of customs mitigating the need for formal controls or sanctions. Morris *et al.* (2009) found that where a shared vision or a common understanding of the important goals of an organisation were absent, critical information was not passed between employees and, indeed, they were not able to identify what was critical information to be shared and processed.

Where social capital is developed in one context, generated from sources such as norms or trust, it may can be transferred across social settings leading to new exchanges. Coleman (1990) suggests the example of the mutation of personal relationships into business exchanges, similarly, where technical experts belong to an expert community or professional organisation, this may transfer into a distinct business relationship. This is termed the appropriable social organisation (Nohria 1992; Putnam 1993 1995) and proposes that organizations created for one purpose may provide a pool of resources for different ends giving a network of access to

people and the resources within their reach both tangible and knowledge based.

Social capital may also have negative consequences. Sometimes good bonding social capital blinds the in-group members to other possibilities and they are only able to reflect the views inside the group. The norms prevalent within a group may create resistance to co-operation, exchange, and change. Where the stock of social capital is high in organisations, the members if the group may not see that they have selected to restricted their access to new ideas and sources of information. If strong ties provide solidarity and glue and enable benefits that flow from common goals, they may also lead to groupthink (Janis 1982), over-embeddedness (Granovetter 1985; Uzzi 1997), and low creativity, or contribute to the balkanisation of organizations descending into internecine battles. (Foley and Edwards 1996 p.39). Conversely, actors who successfully span the organisation can utilise weak ties to accrue benefits to themselves, for example, improving their individual professional network, but the benefits may not flow into the organisation (Burt 1997). Indeed, Burt notes that actors may accumulate benefits solely for their own use and may even use their positions to their own individual benefit and to the detriment of their organizations. There may also be a negative effect for successful accumulators of social capital. Looking at star employees in an organisation, Oldroyd and Morris (2012) found that these stars were often foci of information within their organisation and able to accumulate superior resources than their less stellar peers but they may suffer from information overload leading to an eventual inability to process information and operate effectively. (Gargiulo and Benassi (1999) refer to these negative implications as the "dark side" of social capital seeing social capital as a limiter of creativity and adaptability often preventing managers from adapting behaviours and networks to changing environments.

Maintaining staff with the relationships and knowledge may be very costly and it may not be possible to see the benefit of these relational and cognitive dimensions. If the given social structure is large and complex, then costs will escalate with size and complexity. Indeed some writers have speculated that there may be an upper limit on the size of the network beyond which the value of the social capital begins to erode (Gautam 2000).

A further problem with social capital is that is is not fungible and cannot be traded readily. Workplace friendships and the reciprocity expectation that they create do not pass from one person holding a role to a new incumbent. This may have profound implications in turbulent times.

Social capital cannot be created without some effort, requiring an investment of time and possibly education. Once those ties are established, they need to be nurtured and husbanded. Without careful management, these ties may cease to be "live" and will wither away (Burt 2002). Bonding ties are easier to maintain since, as described above, they are constantly in use and being re-energised. Bridging and linking ties require greater effort to maintain and may require maintenance for no obvious immediate benefit.

3.7 Social capital and performance

The Miles and Snow (1978) framework postulates four organizational types in terms of their strategies : defenders, prospectors, analysers and reactors. Defenders strive to carve out pockets of environmental stability within their industries. They pursue narrow product-based markets, they are slow to make adjustments in their technology, structure, or operations, and concentrate on improving efficiency. Prospectors engage in a search for market opportunities, possess flexible technologies, and create market change and uncertainty. Analysers operate in two types of domains, one stable and the other changing, and their behaviour shifts between that of the defender in more stable times and to that of the prospector when they encounter turbulent environments. Their organizational structures and processes are a combination of those found among prospectors and defenders. Reactors tend to respond to their environment without having a distinct strategic direction.

Shipilov and Danis (2005) combine the social capital perspective with three of the strategic archetypes described by Miles and Snow (1978) and conclude that superior performance is seen when social capital is employed effectively. They do not discuss the Miles and Snow "reactor" type. Qin and Wang (2008) note that the performance

of a firm may be positively impacted where the strategy type is complemented by appropriate relational social capital employed within the firm. Qin and Wang (2008) describe social capital as vertical, horizontal and social which correspond to linking, bridging and bonding respectively. They found that certain types of strategy prospered when conditions produced apposite social capital rather than examining it from the direction of a strategy needing a certain type or mix of social capital. Table 3.2 combines the findings of those studies.

Table 3.2 : Social capital versus strategic archetypes (source: adapted from Shipilov and Danis 2005)

Strategy	Environment	Social capital needed for top management	Outcomes needed
Defender	high level of environmental stability	group-level bonding social capital to create top management cohesion and high linking to generate vertical cohesion	effective use of resources to promote co-operation, deployment of routines and systems, good communication, trust and collective efficacy

Strategy	Environment	Social capital needed for top management	Outcomes needed
Prospector	low stability, outcomes are uncertain and information is partial and fluid	High bonding and high bridging social capital to create internal cohesion and support external scanning.	seek out and exploit new opportunities which may be outside the current boundaries or scope of operation
Analyser	swings between relatively stable environments, and more turbulent environments	equal amounts of moderate top management team bonding and external bridging social capital	need to be efficient and looking of new opportunities

Shaw *et al.* (2005) examined the impact of staff turnover on social capital and the onward impact to performance. This relatively small study of only 38 organisations found that the loss of social capital explained the variation in performance between the organisations and that a key input variable into this was the turnover of staff. This study supported the view of Dess and Shaw (2001) which had argued that social capital was more significant in knowledge-intense industries where greater stress is placed on information and intellectual input.

Starting from the premise that deep social capital would have a powerful influence on the complexity of strategic choice, Houghton *et al.* (2009) found that greater

strategic complexity was positively associated with three types of network association : extensive trade network association, CEOs with large external personal networks and CEOs with extensive internal personal networks. Although this study focused on the power of networks held at firm and CEO level, it would be useful to unpack this to examine the implications for the level of social capital further down the firm.

3.8 How social capital is created

Social capital resides in relationships which are created through social exchange and is constantly reinvigorated by the linkages built by these relationships over time (Bourdieu 1986; Granovetter 1992). It is engendered by resources within organisational structures and through their processes of social exchange. Time is critical in the development of social capital, since it is fostered by stability and continuity within the social structure influencing the shared understanding of mutual obligations (Misztal 1996). A fundamental trait of relationships is trust since trust will promote co-operation leading to increasing levels of trust thus generating even further trust (Fukuyama 1995; Putnam 1993; Tyler and Kramer 1996). Social capital is the product of access plus resources and is not simply created by the presence of access through network connections (Foley and Edwards 1999).

Moving to how social capital is created, Shipilov and Danis (2005) examine strategic and environmental contingencies that influence the value of social capital within organizations. They argue that social capital is key to understanding how the attributes of the top management groups (TMG) contribute towards strategic choices for an organisation and thence into its performance. They claim that an examination the deliberate application of social capital within the senior management team can will reveal the subtle and complex social dimensions of top management activities. In developing a framework they link the characteristics of senior managers to the development of both bridging and bonding social capital within in TMGs (Shipilov and Danis 2005). These dimensions relate at individual member level to the level of education, socio-economic standing, career paths, the status of a manager within

their organisation, manager's age, the direction and orientation of the referent group. They also note that at an organisational level , it may be derived from the status of an organisation within its sector and the cultural and institutional context in which a firm operates. These combine to create the distinctive social capital that lies within that top management group. These are complex and exist in a unique combination for the individual member and affect the stock of social capital, its availability and how it may be used.

Cross and Prusak (2002) looked at how four key roles contribute to the development of social capital via informal networks. They describe these as "central connectors" who link most employees informally with each other with the critical information or expertise needed by the whole network to achieve its ends. "Boundary spanners" build connections though an informal network to other more remote parts of the company or to other organizations. "Information brokers" link disparate sub-groups bringing cohesion to an informal network. "Peripheral specialists" are people with singular expertise who can be called upon across the network.

Consideration of bridging and bonding social capital leads Shipilov and Danis (2005) to reflect on the complexities inherent in group-level social capital and how the attributes of individual managers' impact their relative position within social networks, up and down the organisation and inside and outside the TMGs.

Kogut and Zander (1996) perceive a firm to be understood as a "social community specialising in the speed and efficiency in the creation and transfer of knowledge" (1996, p.503). It is necessary to understand that sources of social capital are contingent on the social structure in which an actor operates and the position of that actor's in the social network. Indeed, it is a direct consequence of their location in the structure of their social relations and so it is necessary to unravel the meaning of "social relations". Adler and Kwon (2002), draw a distinction between three dimensions of social structure, each emanating from different types of relations. Market relations, exist for the exchange of goods and services for money or its equivalent. Hierarchical relations facilitate the exchange of security for adherence to authority. Social relations promote the mutual exchange of favours or gifts. The

latter relationship is of interest here since it characterises social networks and bring to life the social structure underlying social capital. This relationship may be in regular or intermittent use.

Adler and Kwon (2002) believed that three pre-conditions must be satisfied : opportunity, motivation and ability.

3.8.1 Opportunity

The network of social relations gives opportunity for social capital transactions to take place, in other words, it is the transport mechanism enabling these opportunities. Where external ties to others exist, this allows individual actors the opportunity to build out into further resources available as external contacts. Looking inwards, collective actors use internal relationships to generate opportunities to act in concert.

Coleman (1990) found that social capital erodes where people are less dependent upon each other. Therefore the opportunity to develop social capital is enhanced where there are high levels of mutual interdependence. This interdependence provides the opportunity for the development of organisationally embedded forms of social capital.

Moran (2005) looked at two aspects of social capital: structural embeddedness as evidences by the configuration of the the organisation giving rise to a manager's network of work relations and relational embeddedness described as the quality of those relations. The study found evidence that both structural and relational elements of social capital influence the performance of performance. However, these were different, structural embeddedness playing a stronger role in the success of routine, execution-oriented tasks whereas relational embeddedness was a stronger influence on new and innovative tasks and therefore could be a useful predictor of successful alignment in turbulent times.

Some parts of organisations appear to create linkages with other divisions and departments more readily. Tsai (2000) examined how some parts were able to create new network linkages quickly while other units required more time to build a relationship. The study showed that prior network centrality, trustworthiness, and

strategic relatedness were key determinants of the rate of creation of new linkages. Where organisations build in structural mechanisms to create social capital, there is significant linkage between the use of relational co-ordination and the existence of cross-functional, flexible liaison roles (Gittel 2000).

3.8.2 Motivation

Motivation is a complex area. There are ready explanations of the desirability of of a transaction for the receivers of the outcome from a transaction but it is harder to uncover a rational explanation for the motives of the donors. Purely rational behaviour would dictate that actors are solely driven by instrumental motives: cultivating social capital to enable career advancement (De Graaf and Flap 1988), to survive and outwit competitive rivalry (Pennings *et al.* 1998), or simply to reduce transaction costs (Baker 1990). While all of these have a place in understanding motivation, there are other more subtle motivational forces at play. Nahapiet and Ghoshal (1998) identify shared beliefs as a contributory factor in motivation. The motivation of donors is not necessarily obvious in terms of immediate, visible, guaranteed or tangible returns. Portes (1998) explores the "microfoundations" of social capital going beyond the simple instrumental explanations. He explains that simply because a network link exists does not guarantee that it will be used or even that social capital effects will be realised. Motivation can be seen not simply as a desire for certain future reciprocity but also as a cost of "associability" or part of the generalised norms that apply to the group (Leana and Van Buren 1999; Putnam 1993). Putnam argues that social capital arises from those generalised norms and and the underlying trust in an association. Actors demonstrate a "willingness and ability ... to define collective goals that are then enacted collectively" (Leana and Van Buren 1999, p.542). Chow and Chan (2008) identified the presences of a social network combined with shared goals made a significant and positive contribution towards attitudes favouring knowledge sharing and thus to the creation of social capital.

In his study of how relationships are maintained, Burt (2000) looked at predictors of social decay on relationships in a study of a population of bankers and their

colleagues within a large financial organization. Finding homophily to be important in the creation of social ties, Burt found that relationships tended to decay less when between homophilous groups, for example, senior banker to senior banker than to non-homophilous groups, for example, senior banker to junior legal member. The key elements of homophily were gender and age. Status was also significant so, when ties existed between people of similar status, those ties tended to be more durable. The study also found that path dependence played a part in that decay was slower in relations between colleagues with a strong previously existing relationship. Finally, embeddedness, through age and stability, tended to lessen decay rates.

3.8.3 Ability

Ability is defined as "the competencies and resources at the nodes of the network" (Adler and Kwon 2002, p.26). Opportunity and motivation need to be combined with ability to complete the triangle to create the beneficial effects of social capital (Leana and Van Buren 1999). The impact of social capital is dependent on resources available to an actor for use at various nodes on their network and this impact is varied by ability (Gabbay and Leenders 1999; Lin 2001).

Knowledge transfer and trust was examined by Levin and Cross (2004) finding that trust that is competence-based and benevolence-based (that is, with trust based on the belief that the knowledge provider is acting from well-meaning motives) was significant. Competence-based trust was particularly important when tacit knowledge was received.

3.9 Dimensions of social capital

Social capital is made up of the 'norms and networks facilitating collective actions for mutual benefits' (Woolcock 1998, p.155) and is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition- or in other words, to membership in a group - which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to

credit" (Bourdieu 1986 p.248). It applies to the reciprocal interaction between people in social groups (Granovetter 1982) and the positive impact in communities and describes "features of social organisation, such as trust, norms, and networks, that can improve the efficiency of society by facilitating co-ordinated actions" (Putnam 1993: p.167).

Other authors have identified different clusters of dimensions, for example Liu and Besser (2003) identified four dimensions of social capital: informal social ties, formal social ties, trust, and norms of collective action. However, this analysis puts together the "what" with the "how", that is , the dimensions which they identify are networks, trust and norms with the distinction between formal and informal being examples of the execution of the network dimension. In another approach to finding clusters of characteristics, Narayan and Cassidy (2001) identify 7 dimensions : group characteristics, generalised norms, togetherness, trust, volunteerism, everyday sociability and neighbourhood connections. Their study was specific to a social project and therefore the language does not necessarily map directly onto other areas or the requirements of this study. Nonetheless, their generalised norms, trust and neighbourhood connections correspond directly to shared norms, trust and networks discussed above. Again everyday sociability (which they do not further break down) and togetherness are examples of how personal and collective efficacy are achieved. Volunteerism can deliver both personal and collective efficacy and reciprocity. However, the general characteristics of the group cannot truly be seen as dimensions unless social capital can only be created if these characteristics are present. Rather, the general characteristics are valuable for comparisons within the in-group and understanding relationships with out-groups. A smaller set of dimensions was conceptualised by Ghosh and Scott (2009) in their review of IT outsourcing and its impact on relational alignment. They found three dimensions: generalised trust, identification and knowledge-sharing norms.

Nahapiet and Ghoshal (1998) define three dimensions of social capital : structural, relational and cognitive. Structural social capital is that described by the nature and level of network interactions, and may also include structural position and informal interaction (Karahanna and Preston 2013). Relational social capital is concerned with

the attributes of the relationship and may include trust, norms and obligations. Finally, cognitive social capital represents a shared knowing and understanding of meaning. However, this compression of social capital into three dimension discards some of the subtlety and difference which is seen in other studies. Since social capital already deals in abstract terms, the loss of these subtle distinction risks blurring the underlying attributes.

The various combinations of these attributes and dimensions lead to interaction across the members of a group and lead to the accrual of benefits to that group. These benefits may be economic or non-economic benefits to the individuals concerned and may mean different things to those individuals (White 2002). Arguing that social capital is essentially a point-to-point good specific to pairs of individuals, Coleman (1988) views social capital as vesting in the relationships themselves and having no value to the individuals and that any economic or non-economic benefits are not aspects of social capital but outcomes of its existence (Coleman 1988, p.98). The implication of this is that social capital outcomes will cease once one side of the relationship moves on and that individuals can receive none of that benefit. However, other studies indicate that people use social capital to build both links and bridges to enable professional mobility (De Graaf and Flap 1988; Burt 1997; Gargiulo and Benassi 1999).

Bringing together the definitions from these writers, there appears to be a broad consensus that it can be seen in terms of five dimensions :

Table 3.3 : Social capital dimensions

Dimension	Characteristics	Literature
networks	lateral associations varying in size, density and duration	• Coleman 1988 • Putnam 1993 • Snijders 1999 • Woolcock 1998

Dimension	Characteristics	Literature
shared norms	tacit, informal and unwritten shared values governing behaviour	• Coleman 1988 • Collier 1998 • Fukuyama 2001 • Portes and Sensenbrenner 1993 • Putnam 1995
trust	willingness to take initiatives or risk founded on the belief that others will respond as expected	• Coleman 1988 • Collier 1998 • Fukuyama 1995 • Kawachi *et al.* 1999 • Leana and Van Buren 1999 • Lemmel 2001 • Putnam 1993 • Snijders 1999 • Welsh and Pringle 2001
reciprocity-expectation	a mutual exchange of benefit and services	• Bourdieu 1986 • Burt 1992 • Coleman 1990 • Granovetter 1982 • Lin 2001
collective efficacy	the participation of group embers to create active, social engagement and commitment	• Collier 1998 • Snijders 1999

Social capital needs to be seen as a single, albeit loosely articulated, concept which is achieved through network connections, establishing shared norms, building trust, setting expectations of mutual obligations leading to the achievement of collective goals. In focusing on a single aspect such as trust, then the writer will overlook the

richness of the concept.

3.10 A dimensional framework for social capital

Shown below is the dimensional framework developed by Narayan and Cassidy (2001) describing their view on the dimensions of social capital with the key components making up those dimensions. They set out to develop a dimensional approach to the measurement of social capital and looked at a range of literature which has also been discussed here (Bourdieu 1986; Burt 1997; Coleman 1988; Paxton 1999; Putnam 1993). They combined this with the outcomes of four empirical studies such as the World Values Study (Narayan and Cassidy 2001, p.61) and their own work, the pilots for Global Social Capital Survey to build the general characteristics of their framework. All these studies looked at the interaction between the individual and their local communities, either in a government, quasi-government or voluntary context rather than in the business context. Nonetheless, their dimensional approach was valuable as a starting point to formalise thinking about a structured and dimensional approach and is shown in figure 3.1 below:

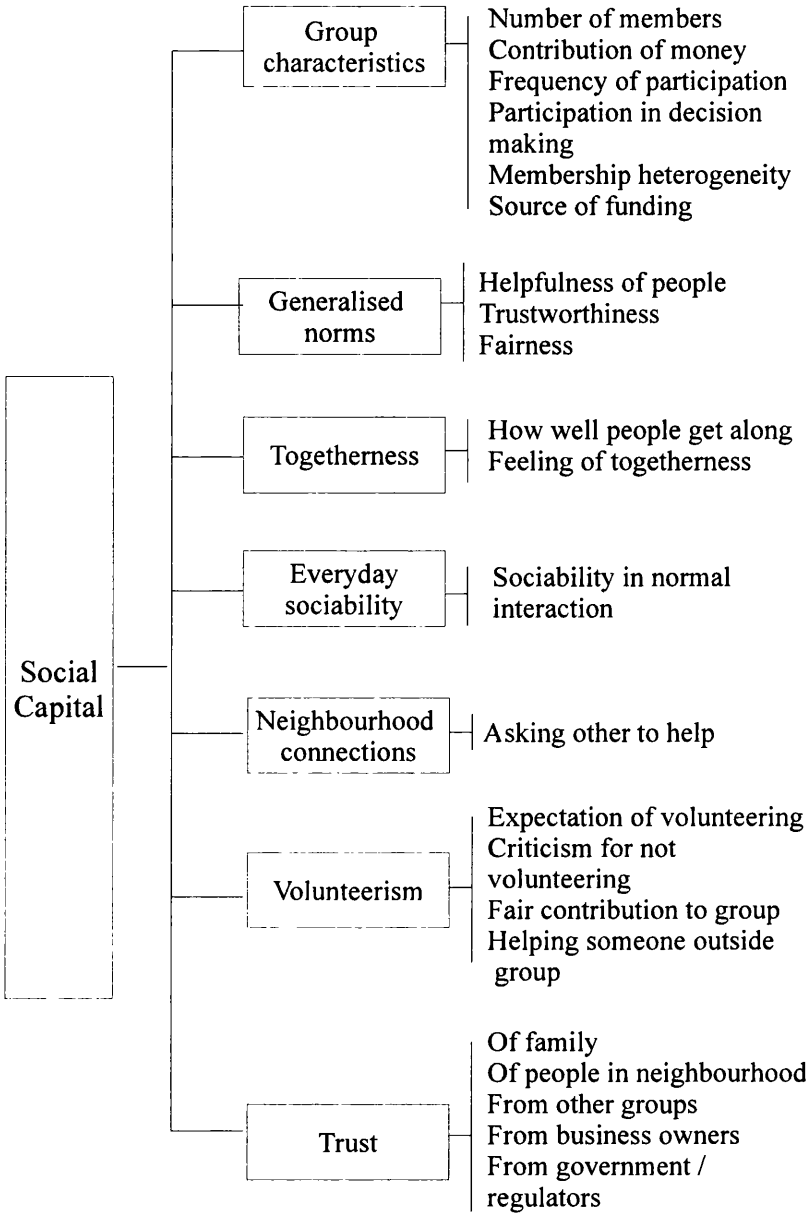

Figure 3.1 – Social capital dimensions : source adopted from Narayan and Cassidy (2001)

Their framework shown above in figure 3.1 breaks down most of their dimensions into examples of how these dimensions are manifested, such as "togetherness" being shown as "how people get along". While the Narayan and Cassidy (2001) framework was a valuable tool in refining thoughts on social capital in business, it tended to be less useful where there was overlap between describing the nature or attributes of

dimensions and their measurement. Some aspects are clearly measures, for example, "number of memberships" and "frequency of participation" rather than examples of the dimension or a subset thereof. "Trust" is described on a number of vectors such as trust within the team, of other teams and of the control functions but is also found in "generalised norms". Other dimensions, such as "everyday sociability" lack depth and might be seen as part of wider definitions. However, there is some blurring of the boundaries within their framework in that "everyday sociability" could also be seen as a way of creating togetherness, especially since they do not break it down into further components. Similarly, they cite "helpfulness of people" as a "generalised norm" where it could be used as another aspect of "togetherness" or even a contributor towards trust building. Nonetheless, these dimensions were found to be more useful than those described by Nahapiet and Ghoshal (1998) when looking inside relationships since their definitions of structural, relational and cognitive social capital overlooks the creation of mutual expectations and collective efficacy.

3.11 Building a new framework approach to understanding social capital

Building on the Narayan and Cassidy (2001) framework (see Figure 3.1 above), a revised framework was built to define the components underpinning social capital in a business context rather than in that of local government or a governmental agency or a not-for-profit organisation. The framework was adapted to improve consistency in the light of the critique above. Additionally, it shifts the sub-dimensions or the descriptions of examples of social capital to reflect social capital in a business setting with comprehensible attributes in a business context rather than that of the government or non-profit contexts. Returning to the dimensions of social capital, viz., networks, shared norms, trust, reciprocity-expectation and personal and collective efficacy and incorporating the attributes described by Narayan and Cassidy (2001), the following high level dimensional framework has been developed to describe the conceptual underpinning where each dimension is fulfilled by the associated attributes:

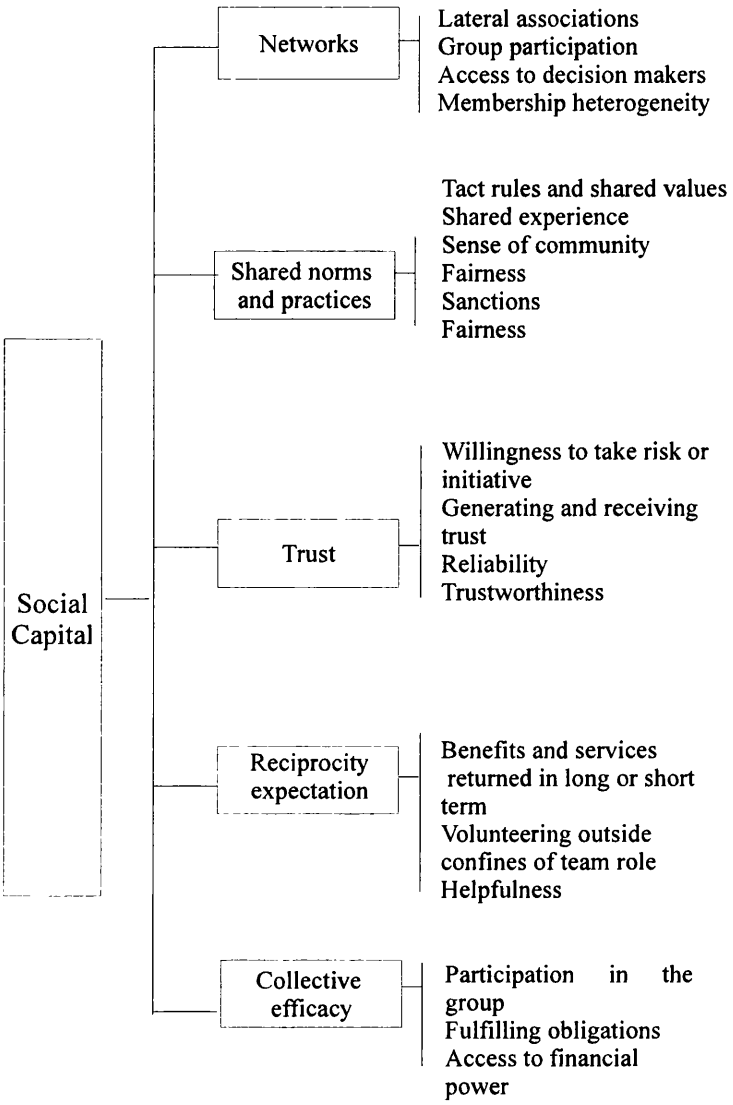

Figure 3.2 Revised social capital dimensions (source : adapted from Narayan and Cassidy 2001)

These dimensions are elaborated below:

3.11.1 Networks

Networks are lateral associations which create social interaction, social networks, social support and may be held by both individuals and groups. Network relations provide access to resources and power. These associations can be short or long in

duration and may be more or less dense (Burt 1992; Coleman 1988; Putnam 1993; Snijders 1999; Woolcock 1998). Networks may be more closed and dense, the most dense of all being wholly closed, that is, everyone has a relationship with everyone else. Less dense networks have gaps or "structural holes" (Burt 1992). Social capital is a valuable source of information and the benefits that may accrue from access to that information but, in itself, it may be costly to gather and maintain (Coleman 1988). However, network relations may serve multiple purposes and can reduce the amount of time and investment required to gather information. Burt (1992) suggests that information benefits occur in three forms: access, timing, and referrals. "Access" describes the brokerage necessary in receiving a package of information and then passing it on to the most pertinent person. Burt notes that networks can screen and filter information. "Timing" of information flows refers to the ability of actors in the network to provide information sooner than it would be available to people outside that network. "Referrals" describe the flow around the network as the information becomes dispersed. Network configuration may aid or impede information flow through a network. Loose ties in sparse networks (Granovetter 1973) may impact the diffusion of information but can also fuse knowledge from varying sources. Social relationships tend to strengthened through interaction and need that inter-action to be maintained. Thus to develop dense social capital there needs to be regular interaction (Bourdieu 1986). In organizational life this is achieved by regular conversations occurring in meetings, corridor exchanges, conferences, and social activities (Mintzberg 1973; Prescott and Visscher 1980; Roy 1960). These can be planned leading to the purposeful creation and maintenance of dense networks of social relationships providing access to resources available through these networks of relationships. Just as likely are the unplanned and unstructured opportunities for sharing information which can lead to the unprompted development of further social capital. Weak ties offer a potential connection with the world outside the network, possibly even in other organisations (Erickson 2004). These weak ties may be numerous and diverse creating, in turn, the possibility of access to a wide variety of resources.

Gautam (2000) reviews the effects of network relations within a firm on its ability to

innovate and finds that both direct and indirect ties tend to have a positive impact on its capability to generate innovation. However, the impact of indirect ties is diluted by the number of a firm's direct ties. Structural holes can have both positive and negative impact on innovation. The study further suggests that increasing structural holes has a negative effect on innovation in collaboration between firms and concludes that there is an optimal structure of inter-firm networks which is in itself contingent on the objectives of the members of that network.

Relational embeddedness refers to the way that, over time, the interactions of personal relationships develops a history that creates an enduring bond which will then be available to the actors in that relationship (Granovetter 1992). It is likely that it will exist over a long period. It should be noted that this concept focuses on the development of relationships between individual actors and their personal relationships rather than on the relationships between organisations. These relationships are used to generate valuable attributes of social capital such as approval and prestige.

3.11.2 Shared norms

Shared or social norms arise from a set of shared values that govern in-group behaviour by individuals and their interaction, with control mechanisms, sanctions or even withdrawal of the group's mandate or approval. The perception of community is demonstrated through its norms and core values (Coleman 1988; Collier 1998; Fukuyama 2001; Portes and Sensenbrenner 1993; Putnam 1995). The source of shared norms lies in the existence of shared language and vocabulary and the sharing of collective narratives. Where people share a common language, this allows them to access to people and the information and knowledge that they possess. Conversely, where their language and codes differ, this may keep them apart consequently limiting their access to resources and information. Language influences and filters perception (Berger and Luckman 1966; Pondy and Mitroff 1979). Codes, technical terms and habits of speech provide an interpretive frame of reference to understand the environment. However, it also filters out of those activities and their descriptions outside that frame of reference. Shared language enhances the likelihood of exchange

and combination but for the parties to gain the benefit there must be a level of overlap in knowledge and the ability to share perspectives (Boland and Tenkasi 1995). Coupled with shared language and codes, shared narratives in myths, stories, and metaphors provide rich tools to create, exchange and preserve meanings (Clark 1972; Johnson and Scholes 1997; Nisbet 1969).

Norms of co-operation can establish "expectations that bind" (Kramer and Goldman 1995), and as such they may have an impact on the dimension of reciprocity – expectation. Other norms concerning interaction may encompass attitudes to valuing diversity, willingness to accept criticism, and a tolerance of failure (Leonard-Barton 1995).

3.11.3 Trust

Moving on from shared obligations and the expectation of fulfilment of those obligations, trust plays a key part in building and maintaining social capital. Again, trust is not the outcome of a simple exchange but the willingness to take initiatives or risk in the belief that others will respond in the knowledge that trust has been earned by the initiative- or risk-taker, and rewarded by the acceptor / approver of that initiative or risk. Trustworthiness, social reciprocity and cohesion are seen in the confidence of the fulfilment of obligations of others (Coleman 1988; Collier 1998; Cox 1997; Fukuyama 1995; Kawachi *et al.* 1999; Leana and Van Buren 1999; Lemmel 2001; Putnam 1993; Snijders 1999; Welsh and Pringle 2001). Misztal defines trust as the belief that the "results of somebody's intended action will be appropriate from our point of view" (1996 p.9-10). Trust opens a connection between parties and creates a vulnerability on both sides Mishira (1996). If the trust-seeker fails to deliver or demonstrate reliability, then trust can be eroded (Giddens 1990; Ouchi 1981). The trust-giver willingly believes in the competence and capability of the trust-seeker (Sako 1992; Szulanski 1996) and in their openness (Ouchi 1981). Trust engenders further social exchange and, where a high level of trust exists across relationships, people are more likely to co-operate (Gambetta 1988; Ring and Van de Ven 1992 1994; Tyler and Kramer 1996). There is a two-way link between trust and co-operation where trust engenders co-operative behaviour

and this co-operation increases the level of trust in the relationship.

Trust in an environment where there is information uncertainty and ambiguity may require different trust-based responses given different contexts leading to the application of different techniques and tools within specific networks and therefore the response may be contingent on other factors determining the organisation's environment (Saint-Charles and Mongeau 2009). Over time, collective trust may become a powerful "expectational asset" (Knez and Camerer 1994) where group members widen out the trust to help solve problems of co-operation and co-ordination beyond the original scope of the relationship. Powell (1996) argues that co-operation is sustained by constant contact, dialogue and monitoring. He further claims that trust cannot be maintained with the support of institutions and is purely a personal asset.

3.11.4 Reciprocity-expectation

When an expectation is created that benefit and services will be returned in either the short or long term, mutual obligations are created. Obligations are a commitment or duty to undertake some future activity. The mutuality of this reciprocal exchange is key to understanding how there may be no immediate or even short-term benefit to the giver but there is implied an expectation of some benefit in the future, even though the value of that benefit it may not even be defined by the parties (Bourdieu 1986; Burt 1992; Coleman 1990; Granovetter 1982; Lin 2001). Shared language may provide a short-hand common tool to evaluate potential benefits of exchange and combination. Looking at the way that best practice is transferred across organisations, Szulanski (1996) found a critical obstacle in the relationship between the parties where, if there is not a level of general sociability between the giver and receiver, there will be resistance to the knowledge transfer. The parties therefore not only need access channels, they also need to anticipate future value and to be motivated to exchange and combine knowledge and information. Coleman (1990) identifies obligations as expectations emerging from specific actor-to-actor relationships. This reciprocation can be seen in advice giving and seeking; advice seeking creates obligations for the advice seeker (Agneessens and Wittek 2012).

3.11.5 Collective efficacy

The purpose of generating social capital is to permit access to resources to achieve either individual or group ends, that is, either personal or collective efficacy. It is achieved by the participation of the members in a relationship to create active, social engagement, commitment to goals and the achievement of group obligations and fulfilment of duties through the varying types of social interaction (Collier 1998; Snijders 1999). In an enduring relationship this can lead to the development of generalised norms of co-operation, which themselves may further increase the willingness of the participants to engage in social exchange (Putnam 1993). Oh *et al.* (2006) argued for the existence of group social capital, that is, social capital which is owned collectively. They found that greater group social capital resources led to greater group effectiveness and that the flow of those group social capital resources may occur through many different channels.

Power is a determining factor in efficacy, that is, access to and exercise of power influences the ability to achieve either individual or group aims. Moltoch and Boden (1985, p. 273) examined three separate ways that the use power may be exercised. Power may be seen as the capacity to prevail in explicit contests, for example, board-level debates. Alternatively, it may be revealed as the ability to set agendas and determine the issues over which there will be any contests, that, is, deciding the board level agenda and its background. Finally it may be shown in the ability to determine the interactions through which agendas are set and outcomes determined. These are the subtle conversations in the corridor carrying out pre-board level lobbying and creating informal coalitions which pre-dispose decisions about the content of the agenda, briefings and direction.

3.12 Finding alignment in social capital

The building blocks of social capital (network associations, shared norms, trust, reciprocity expectation and collective efficacy) can all be seen in terms of alignment. Network associations have a clear relational link between the IS and business

organisation whether in boundary spanners (Valorinta 2011) or reporting lines (Banker *et al.* 2011). The existence of shared norms are demonstrated through a shared perspective seen in the use of shared language, domain knowledge and experiences (Chen *et al.* 2010; Preston and Karahanna 2009). Trust emerges as an outcome of shared domain knowledge (Reich and Benbasat 2000), the fusion of networks and resources unique within any one organisation (Van Grembergen 2004) and as convergence between the interests of the two parties reinforced by frequent communication (Johnson and Lederer 2005). Reciprocity-expectation is built when there is participation and engagement by both IS and business managers in specific activities to improve their understanding and knowledge of IT and its business value and shared participation in business planning (Kearns and Sabherwal 2006). Collective efficacy leads to superior performance where processes are integrated, business-IS partnering exists for major investments, network associations are mirrored functionally and geographically, there is an understanding of both the cost and value of IT (Cumps *et al.* 2009).

Table 3.4 below links the literature on alignment discussed in Chapter Two to the concepts of social capital in table 3.2 above and expands the framework in figure 3.2 above. In table 3.4, the three leftmost columns (Social capital dimensions, social capital literature and social capital themes) are mapped to related information for alignment literature in the three rightmost columns (alignment capital themes, alignment literature and alignment dimensions). This linkage demonstrates a clear connection between social capital and alignment and was used to inform and develop the conceptual framework.

Table 3.4 Social Capital and Alignment Themes

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
Networks	• Coleman 1988 • Putnam 1993 • Snijders 1999 • Woolcock 1998	• Lateral associations and contacts / short or long duration	• Network connections • Regular formal and informal communication • Visioning networks	• Johnson and Lederer 2005; • Banker *et al.* 2011 • Van Grembergen 2004 • Agarwal and Sambamurthy 2009	Networks and communication
	• Bourdieu 1986 • Mintzberg 1973 • Prescott and Visscher 1980 • Roy 1960	• Social interaction	• Network connections • Regular formal and informal communication	• Johnson and Lederer 2005; • Banker *et al.* 2011 • Van Grembergen 2004	
	• Burt 1992 • Granovetter 1973 • Knoke 1999	• Sparse or dense networks • Access to resource and decision-makers (in and out group) • Homogeneity	• Access to decision-makers and decision-making process • Boundary spanners • Homogeneity	• Tiwana 2009 • Xue *et al.* 2008 • Valorinta 2011 • Pasternack and Viscio 1998 • Knights *et al.* 1997	

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
Shared norms	• Coleman 1988 • Collier 1998 • Fukuyama 2001 • Portes and Sensenbrenner 1993 • Putnam 1995	• Tacit rules and shared values • Sense of community	• alignment of employees on rational strategic planning or SISP • Shared perspective, language, experience	• Chen *et al.* 2010; • Preston and Karahanna 2009 • Ouakouak and Mbengue (2013)	Norms and processes
	• Kramer and Goldman 1995	• Cooperation • Fairness • Sanctions	• Shared, mutual respect • Reporting lines / configuration	• van den Hooff and de Winter 2011 • Fink and Neumann 2009 • Cumps *et al.* 2009	
	• Berger and Luckman 1966 • Pondy and Mitroff 1979 • Boland and Tenkasi 1995	• Language and codes • frames of reference	• Shared domain knowledge • Common processes	• Reich and Benbasat 2000 • Versteeg and Bouwman 2006	

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
Trust	• Coleman 1988 • Collier 1998 • Fukuyama 1995 • Kawachi *et al.* 1999 • Leana and Van Buren 1999 • Lemmel 2001 • Snijders 1999 • Welsh and Pringle 2001	• Trustworthiness • Willingness to take risk or initiative • Reliability	• Belief in the other party's value and integrity • Engagement of the other party in planning processes	• Khandelwal 2001 • Van den Hooff and de Winter 2011 • Willcoxson and Chatham 2004	Trust and integrity
	• Mishira 1996 • Giddens 1990 • Knez and Camerer 1994	• Generating and receiving trust • Expectations of trust	• Creating mutual understanding • Expectations of collaboration	• Khandelwal 2001 • Van den Hooff and de Winter 2011 • Willcoxson and Chatham 2004 • Scarborough 1998 • Teubner 2007	

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
	• Ouchi 1981	• Openness	understanding and managing technological risk with mutual appreciation.	Reneniyi *et al.* 1997 Chang 2006	
Reciprocity-expectation	• Bourdieu 1986 • Burt 1992 • Coleman 1990 • Granovetter,1982 • Lin 2001	• Benefits and services returned in long or short term • Future obligations	• Business / IT mutual understanding of each party's value to the organisation • Shared participation in business-IT planning	• Xue *et al.* 2008; • Cragg *et al.* 2002; • Croteau and Raymond 2004; • Pennings 1998; • Sabherwal and Chan 2001 • Kearns and Sabherwal 2006 • Johnson and Lederer 2005 • Wiengarten *et al.* 2013 • Tallon 2007 • Huang *et al.* 2010	Mutual obligations and convergent interests

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
	• Szulanski 1996 • Narayan and Cassidy 2001	• Volunteering outside confines of team role • Helpfulness • Sociability	• Business / IT mutual understanding of each party's value to the organisation • Convergent interests	• Xue *et al.* 2008; • Cragg *et al.* 2002; • Croteau and Raymond 2004; • Pennings 1998; • Sabherwal and Chan 2001 • Kearns and Sabherwal 2006 • Tallon *et al.* (2000	
	• Agneessens and Wittek 2012	• Advice giving and seeking	• Shared participation in business-IT planning	Schmidt and Buxmann (2011 Tallon *et al.* (2000	
Collective efficacy	Putnam 1993	• Participation in and contribution to the group	• Integrated processes • Business-IT partnering for major investment decisions • Access to governance and financial decision-making	• Cragg *et al.* 2002 • Croteau and Raymond 2004 • Pennings 1998 • Sabherwal and Chan 2001 • Ciborra 1997	Superior performance

Social capital dimension	Social Capital Literature	Social capital theme	Alignment theme	Alignment Literature	Alignment dimension
	• Collier 1998 • Snijders 1999 • Oh *et al.* 2006	• Achievement of group obligations	• Common understanding of both cost and value of IT • Superior performance	• Cumps *et al.* 2009; • Kearns and Sabherwal 2006; • Sabherwal and Chan 2001; • Boynton *et al.* 1993 • Schmidt and Buxmann 2011 • Neirotti and Paolucci 2007 • Bergeron *et al.* 2004	
	Moltoch and Boden 1985	• Development of generalised norms of cooperation • Fulfilling obligations • Access to power	• IT management sophistication • Common understanding of both cost and value of IT • Access to governance and financial decision-making	• Cumps *et al.* 2009; • Karimi *et al.* 2000 • Cameron *et al.* 2000	

3.12.1 Network relationships and communications

Social capital begins life in the networks of lateral associations which lead to the creation of social interaction and support. Some associations are fleeting whereas others are long-lasting. Dense, closed networks provide access to people within a group whereas sparse networks cross boundaries and are characterised by "structural holes" (Burt 1992). Groups and individuals are motivated to make connections within and across boundaries because they have an expectation of reciprocity.

Bridging social capital is the result of boundary spanning, enabling links to out-group actors (Burt 1992, 1997; Granovetter 1973; Knoke 1999). Lateral bridging relations are achieved through brokerage mechanisms and open access to resources that do not appear to be available within the immediate in-group. In addition to access to resources, bridging social capital opens avenues of information, influence and power. The weak ties that are the source of bridging capital are not the product of daily, structural interaction but are in less frequent use and, although not subject to frequent renewal, nonetheless, generate trust, the expectation of mutual obligation and thus collective efficacy between otherwise disconnected groups.

3.12.2 Shared norms and processes

Shared norms emerge from shared language, shared collective narratives, routines and processes. A shared code allows ready access to people and their resources and information and are seen in norms of co-operation. Individual or group purposes are achieved through personal or collective efficacy.

Norms which are valuable contributors to social capital within the group may reinforce the otherness of those outside the group. Indeed, these norms may drive groups further apart if they are sufficiently dissimilar. In some organisations, the IS department may be at a relative disadvantage in its conversations with the business in that it is seen as ranking lower in the social hierarchy within the organisation and to overcome this, there needs to be evidence of linking social capital across groups with

different relative status

If the IS department perceives itself as part of a separate institution with connections to the wider world through professional norms, methods and processes, it may not share norms, behaviours and beliefs with its business. Indeed, the forces of institutional isomorphism may push the IS function in a different direction to the business as Ciborra (1997) found.

Even where there is a sharing of generalised norms across the internal but separate teams, there may be issues of boundaries where the IS department is accountable for a service for which it is not responsible on a day-to-day delivery basis (Nevo *et al.* 2007). External delivery organisations are unlikely to have norms which are convergent with the host organisation and there is a need for roles which have the explicit function of boundary spanning in order to moderate the failures of trust and lack of shared norms and mimic the relations which would arise in proximate relationships (Valorinta 2011).

3.12.3 Trust and integrity

With the development of trust and the shared belief in the satisfaction of mutual obligations, comes the preparedness of the trust-giver to award further trust to the trust-receiver and to accept greater risk on the basis of minimal information. Trust can be widened out to further members of each of the groups and to other situations.

3.12.4 Reciprocity expectation and mutual obligations

Where mutual obligations are established and there will be an exchange of benefit over time. This may have an obvious and tangible value but may also be intangible such as the granting of approval. As reciprocation develops and the parties see the benefit of mutual exchange, trust will grow.

3.12.5 Collective efficacy and superior performance

To create collective efficacy and achieve superior performance, bridges need to be built across these boundaries..

In looking at the issue of alignment between the IS and business functions, collective

efficacy is precisely the goal that is sought from alignment since alignment will permit both IS and business to further the ends of the firm in an efficient way. Effective alignment creates a shorthand for both communities allowing them to engage in both operational problem-solving and large scale, long-term strategic initiatives with mutual trust, accepting shared processes and valuing the skills and norms of the other teams.

3.13 Tiers of social capital

Writers have given much thought to identifying what is social capital, how it arises and how is it manifested (Adam and Roncevic 2003; Onyx and Bullen 2001; Sobels *et al.* 2001). Collier (2002) noted that since social capital is made up of abstractions such as trust, the measurement of social capital would need to look for proxies or indirect evidence of its existence (Grootaert *et al.* 2002; Narayan and Cassidy 2001). Karahanna and Preston (2013) deconstruct social capital according to the three dimensions identified by Nahapiet and Ghoshal (1998) : structural, relational and cognitive and leave any concept of collective efficacy outside social capital. Alignment sits outside their model and only exists as a mediator to improve firm performance. Indeed, there is often ambiguity about whether social capital is made up of its dimensions, whether those dimensions give rise to social capital or whether they are interchangeable with social capital. Looking at trust as an example of this ambiguity, there is discussion about whether it can be seen as interchangeable with social capital (Fukuyama 1995), whether social capital arises from trust (Putnam 1993), whether it can be seen as a form of social capital in its own right (Coleman 1988) or whether it is an asset or product derived from social capital (Lin 1999).

This thesis proposes that there exist three tiers of social capital. The first tier contains the fundamental building blocks of network and shared norms without which social capital will not exist. This concept is partly derived from the dimensional approach and associated literature described in table 3.2 and the dimensional framework shown in figure 3.2. It also derives from the literature on performance and social capital (Knez and Camerer 1994; Kramer and Goldman 1995; Qin and Wang 2008;

Shipilov and Danis 2005). Once these underlying components are in place, the next tier of trust and mutual expectations of delivery will develop. With the growth of trust and the fulfilment of expectations, the organisation will achieve at a collective level giving rise to the third tier, not simply at the level of the individual department.

This three tier representation has been chosen to reflect the need to see social capital as a composite whole, that is, for the true benefit of social capital to be realised, all three tiers need to be present. However, it would not be helpful to suggest that if only the elements of the lowest tier existed, then there is no evidence of social capital. Rather, the presence of network associations and the sharing of some shared norms will tend to enable trust and the expectation of mutual benefits even if this second tier is not evident all the time. Further, if the first and second tiers are present, then the third tier of collective efficacy may not always be manifested but the pre-conditions for its manifestation are established and it may be present some of the time.

The first tier comprising networks and shared norms is shown at the bottom so that the reader is able to see it as a precondition for the development of trust and reciprocity-expectation which, in turn, gives rise to the third tier of collective efficacy. The framework is shown in this way so that it is not seen as a decomposition of the construct.

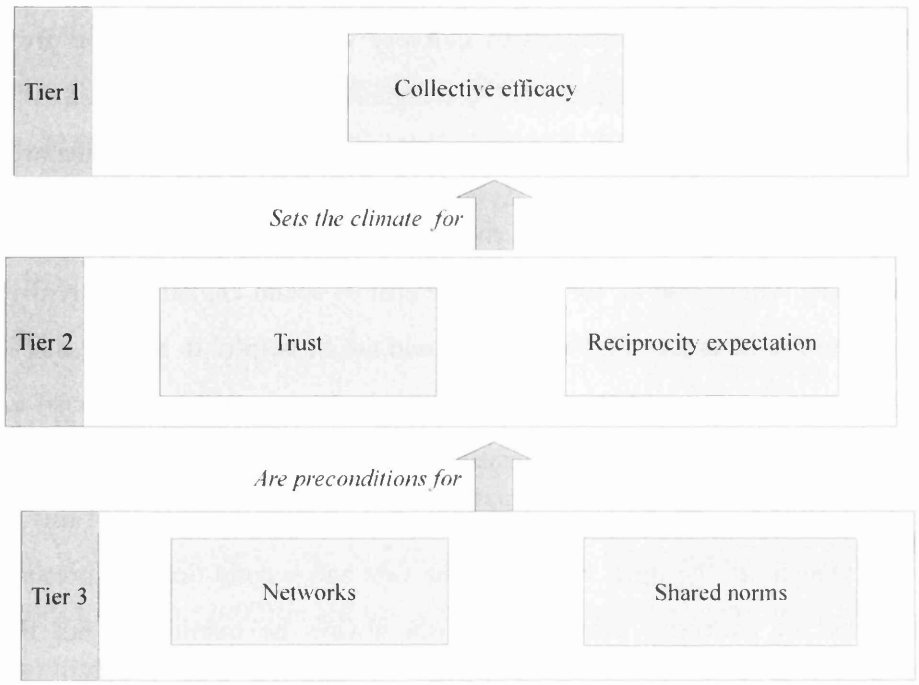

Figure 3.3 Three tiers of social capital

Where social capital is built between the IS department and the business which it services, it is proposed that this will translate into alignment between the two departments. In order for this to take place, there needs to be evidence of network relations, some of which may be structural and boundary spanning, others of which may be less formal or even weak ties across heterogeneous actors and group. Trust needs to be present and there needs to be reciprocal expectations of mutual benefit. Although in-group norms may be different, there needs to be sufficient shared norms which are demonstrated through processes, beliefs and narratives. Finally, the evidence of the existence of social capital is seen in the ability to work together to achieve the aims of the organisation, to achieve collective efficacy though alignment.

Returning to the strategic alignment debate, as discussed in Chapter Two, the very existence of alignment continues to be problematical with no simple definition. However, most writers agree that significant performances benefits accrue when alignment can be observed with studies finding evidence of alignment in shared planning processes, common narratives, mutual histories, frequent formal and

informal communications and supportive structures (Cragg *et al.* 2002; Croteau and Raymond 2004; Pennings 1998; Sabherwal and Chan 2001). The performance impact of the strategic planning process, its direction, either as a push from the business or IS, or part of an iterative mutual cycle, has been the subject of several empirical studies (Kearns and Lederer 2000; Newkirk and Lederer 2006; Peppard and Breu 2003). Nonetheless, such alignment may be transient and not observable at all times or even for the long term.

The literature points to the existence of a very real boundary between IS and business functions and any alignment is always work-in-progress building connections across that boundary. Van den Hooff and de Winter (2011) identified trust as a key element in generating mutual understanding. Network connections were all very well but need to be linked to a shared perspective and mutual trust arising from the existence of shared norms. Failures of communications and trust led to the break down of the relationship between the IS and business community. The absence of a business perspective by IS managers led to dissatisfaction by CEOs (Khandelwal 2001). A severe mismatch of perceived mutual benefit drove a wedge between IS and the business functions (Willcoxson and Chatham 2004).

Configuration-based studies have looked at simple issues such as reporting lines and for signs that a well-aligned configuration will support the performance of the firm. However, they found that this is contingent on the business strategy which, in turn, drives their mutual expectations. IS governance in practice often bypasses the formal configurations and has subtle, informal components involving network associations (Xue *et al.* 2008).

Expanding on the three tiers of social capital shown in figure 3.3 above, it is now possible to show this in terms of alignment in figure 3.4 below:

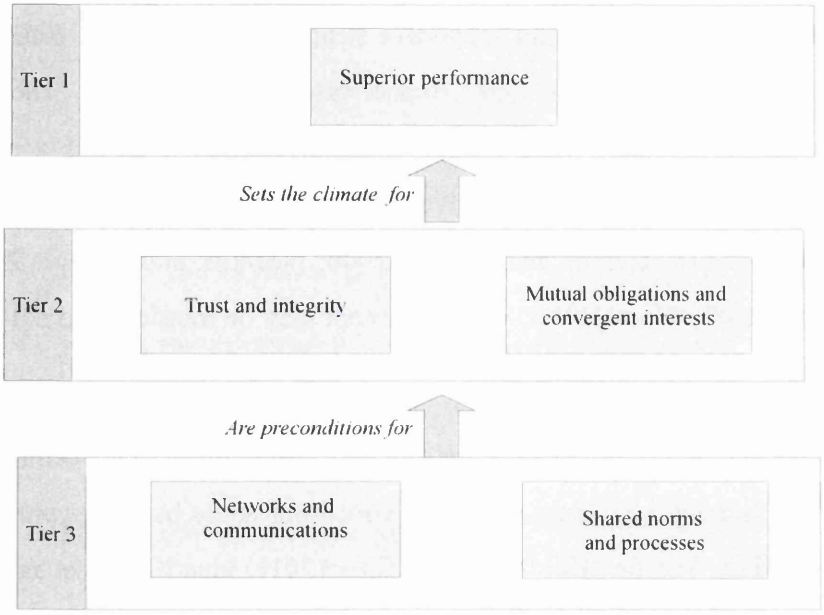

Figure 3.4 Three tiers of alignment in a social capital framework

Examining alignment between the business and IS, collective efficacy is the goal sought from alignment allowing the two communities to engage in both operational problem-solving and large, long-term strategic initiatives with mutual trust, accepting shared processes and valuing the skills and norms of the other. If the IS department perceives itself as separate with different professional norms, methods and processes, it may not share behaviours and beliefs with its business. Norms which are valuable in-group may reinforce the otherness of those outside the group even driving them apart. External delivery organisations may have norms which are not convergent with the host organisation leading to failures of trust across the boundaries (Valorinta 2011). The IS department may be disadvantaged in its conversations with the business where it ranks lower in the organisation's social hierarchy.

Where social capital is built between the IS department and the business, it is proposed that this will translate into alignment between the two departments. This needs to be seen through the input tier as structural and boundary spanning network relations and sufficient shared norms demonstrated through processes, beliefs and narratives. The transformational tier builds trust and shared expectation of mutual benefit. Finally, the output tier will be evidenced by the ability to work together

achieving the aims of the organisation.

A further expansion on the three tiers of social capital shown in figure 3.3 and table 3.4, shows the tiers and the attributes of the dimensions in terms of alignment:

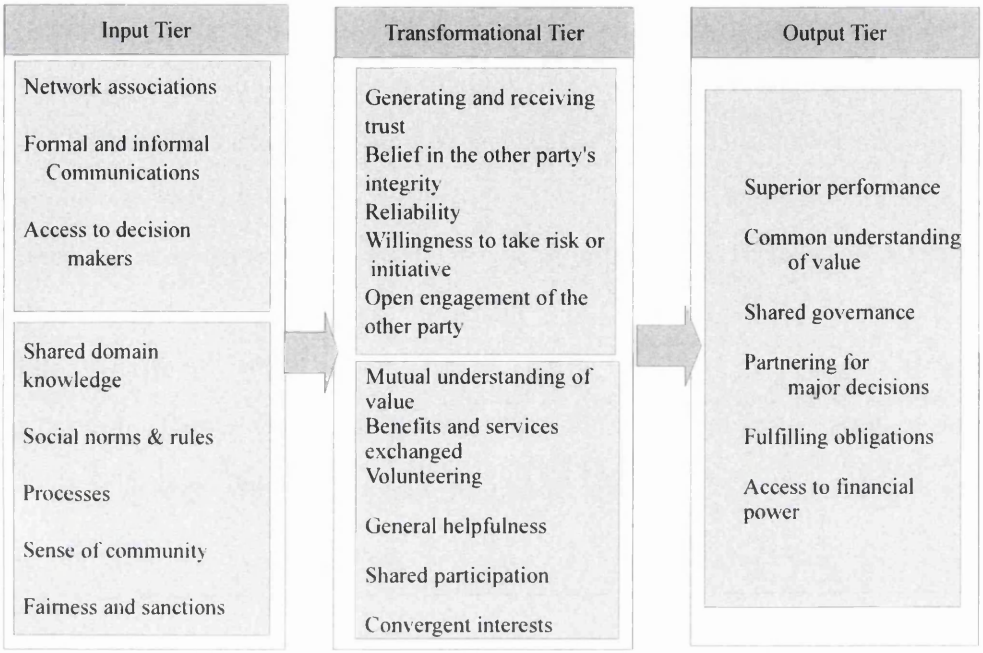

Figure 3.5 Social capital as a transformational engine

3.14 Summary

This chapter has linked the literature on business - IT alignment with the concepts of social capital and developed a conceptual framework which proposes that social capital is product in its own right which creates value for the organisation. Social capital is made up of five dimensions : networks, shared norms, trust, reciprocity-expectation and collective efficacy. These dimensions are not interchangeable with social capital. While it may be possible to discern evidence of any one of the dimensions, in order to extract organisational value from social capital, all dimensions need to be present. There may be feedback between the dimensions, for

example, where trust is present, this may lead to enhanced reciprocity-expectation which, if fulfilled through collective efficacy, may improve trust and develop further nodes in a network.

This chapter argues that collective efficacy is seen when the IS and business organisations are in alignment. In the same way as social capital has proved an elusive concept, strategic alignment is a concept which has evaded exact description. The studies examined in Chapter Two found that those with a high level of alignment (according to the measures selected by each study) achieved superior performance to those with low alignment (Cragg *et al.* 2002; Croteau and Raymond 2004; Pennings 1998; Sabherwal and Chan 2001). Although how alignment is achieved varies from process (Kearns 2005), shared and well-understood business goals (Tallon *et al.* 2000), governance, Huang *et al.* (2010) to visioning networks (Agarwal and Sambamurthy 2009, p.194) all contribute towards alignment which in turn improves collective efficacy. No study found a link between good alignment and poor performance but misalignment was seen in poorly performing firms (Bergeron *et al.* 2004; Neirotti and Paolucci 2007).

Social capital creates value when it reaches collective efficacy otherwise it is only a way of creating a level of organisational comfort through trust, networks and shared values and mutual obligations. Similarly, alignment between an IS department and business only creates value when it is an enabler of superior performance. It is therefore argued that if the highest tier of social capital is the creation of collective efficacy, this will be seen in superior performance. Alignment and social capital may be seen as closely related and that alignment is the product of the two lower tiers of social capital with performance being delivered as a consequence of the highest tier.

"[T]he existence of connections ... is the product of an endless effort at institution" (Bourdieu 1986, p. 249). Social capital in organisations is achieved through Bourdieu's endless effort. Building and renewing network connections, establishing shared norms with shared values, language and processes, earning and giving trust, setting and delivering expectations of mutual obligations leads to collective efficacy, the achievement of the organisation's goals.

This chapter set social capital firmly within the concepts of social identity, social network theory and institutional theory to create a backdrop for the discussion of social capital in a business environment where there are acknowledged disconnects and misunderstandings. It developed five dimensions of social capital : network relationships, shared norms, trust, reciprocity expectation and collective efficacy. Further, it has created a theoretical framework which proposes that these dimensions can be clustered into three tiers and that will provide insight into alignment.

This chapter commenced with an introduction in section 3.1. Section 3.2 of this chapter examined the background to social capital as seen in the context of alignment. Section 3.3 went on to explore the concepts which underpin and inform social capital and section 3.4 investigate the components of social capital : network relationships, shared norms, trust, reciprocity expectation and collective efficacy. The chapter continued with a dimensional breakdown of social capital in section 3.5 and examined dimensional approached to understanding social capital in section 3.6. Different types of social capital were explored in section 3.7 with a review of its positive and negative impacts in section 3.8. The performance impact of social capital was examined in section 3.9 and section 3.10 inquired into the way that it is created. Section 3.11 introduced a framework to support the understanding of social capital and the linkage between social capital and alignment was reviewed in section 3.12. Section 3.13 offered a tiered approach to social capital and alignment and section 3.14 discussed the relationship between social capital and alignment.

Chapter Four - Methodology

4.1 Introduction

Chapter Three introduced the conceptual framework for this research and provides the background to decisions about the selection of the appropriate methodology. This chapter addresses the reasons for the choice of a mixed methods approach and the nature of that mixed methods approach.

This chapter continues with an explanation of the segregation of methodology and method in section 4.2 and proceeds with the rationale driving the selection of a methodology in section 4.3. Section 4.4 examines the methodological issues which previous studies of alignment have encountered and section 4.5 goes on to explore the subject in the context of IT / IS research. In section 4.6 the decision to adopt the interpretavist paradigm is explained against the backdrop of other available choices. The chapter follows in section 4.7 with an analysis of suitable methods according to the selection of a research paradigms examining the suitability of qualitative and quantitative approaches. Section 4.8 explores qualitative techniques and their suitability for management research and section 4.9 sets the methodological choices against the conceptual framework. Having established the choice of a qualitative approach, section 4.10 examines different qualitative research methods and section 4.11 reviews the selection of the case study approach. In section 4.12, methodological concerns relating to the building of a case study are reviewed and the requirements of a case study protocol are discussed. Section 4.13 investigates the potential difficulties in using a case study including researcher bias and perspective, validity and reliability, the impact of organisational changes, ethical and time considerations. Section 4.14 deals with issues concerning evaluation of the conceptual framework and section 4.15 goes on to explore how the inclusion of a short survey impacted the study and considered methodological matters when mixing methods. The chapter concludes with a summary in section 4.16.

4.2 Separating methodology and method

It was decided to separate the discussion of methodology and method. Since this study is concerned with gathering information about abstract concepts such as trust and perceptions, it was believed to be important that such philosophical matters as ontology and epistemology were considered before entering into a detailed description of the practical methods employed. In this study, the researcher will be looking for evidence which is found in personal experience as well as in more concrete empirical evidence.

Research design comprises the topic for investigation and the research paradigm. The research paradigm is the conceptual worldview or set of assumptions about how things work within which the research is undertaken (Rossman and Rallis 2003). The research is based upon a framework of beliefs, values and perceptions. The methodology will determine the research methods and the data collection methods. This chapter does not discuss the detailed method which will be elaborated in the next chapter.

4.3 Rationale driving the selection of a methodology

The selection of a methodology is driven by the nature of the research question, that is, what is the contribution that social capital plays in promoting alignment between business and IS. Chapter Three proposed a theoretical link between the three tiers of social capital in creating alignment. This study will focus closely on the nature of social capital which exists between business and IS departments and how that social capital is created and harnessed. In order to establish the legitimacy of the conceptual framework, the methodology needs to be appropriate to the questions being explored in that framework. It is necessary to select a research methodology offering a good fit to the problem and is feasible and consistent with the framework developed in the previous chapter.

The first consideration is the selection of the most apposite paradigm in the light of the research question, the conceptual framework and the potential audience for the

output of the research. Once the paradigm is chosen, then methodological considerations come into play concerned with the appropriateness of quantitative and qualitative methods and, indeed, in the case of this study the utility and applicability of a combination of methods. Beyond that, come detailed matters of method and measurement. The chapter will consider how the relationships in the conceptual framework may be understood methodologically and whether quantitative or qualitative methods are most appropriate.

4.4 Previous studies of alignment - methodological matters

IT/ IS research tends to attract quantitative studies due to the nature of the discipline. Most of the previous studies of alignment take a wholly quantitative approach (Bergeron *et al.* 2004; Byrd *et al.* 2006; Cragg *et al.* 2002; Croteau and Raymond 2004; Neirotti and Paolucci 2007; Pennings 1998; Sabherwal and Chan 2001; Tallon 2007). Van den Hooff and de Winter (2011) employed a mixed method approach in their study of knowledge sharing between IS and business functions combining survey material and interviews. They used a single in-depth case study to look at how knowledge is shared between the business and IS communities.

Writers have attempted to the measure alignment of business strategy and IT strategy and thence between alignment and performance across a number of sectors, sizes of firm and geographies (Cragg *et al.* 2002; Croteau and Raymond 2004; Pennings 1998; Sabherwal and Chan 2001). In order to do this, they needed to define what was alignment and what was superior performance. They found that those with a high level of alignment according to the definitions of each study had achieved superior performance according to the definitions of each study than those with low alignment. These studies all took a wholly quantitative approach.

Other studies have taken a quantitative approach to the examination of poor performance, various studies have found that low performing firms suffer from poor between business and IS in comparison with with their more successful peers (Bergeron *et al.* 2004; Neirotti and Paolucci 2007). Again, these studies have needed

to define the indicators of alignment and the indicators of performance. Looking at the performance impact of specific IT investments, Byrd *et al.* (2006) examined the influence of alignment between IT strategy and business strategy on a specific indicator : the return on IT investment (ROI). Nonetheless, many writers engaged in the search for hard and objective facts to demonstrate alignment are forced to fall back on the use of perception of the actors as a proxy for either alignment or performance, for example, Tallon (2007) found a positive link between alignment and *perceived* IT business value in the main processes within the value chain.

Where the researcher is seeking to assess the social and organisational impact, it may be appropriate to employ subjective approaches to enable a deep understanding of the phenomenon being studied. In these cases, qualitative methods obtain multiple viewpoints of the phenomenon under scrutiny (Morgan 1983).

4.5 Methodological considerations for Information Systems Research

Walsham (1993) is concerned with how the context of the information system is related to the processes of transformation and change of the IS function and the organisation over time. Walsham argues for the use of interpretive approach for practice-based problems such as those associated with IS in organisations, using in-depth case studies and social theory to inform the method. Mingers (2001) considers which research methods are most appropriate for IS research. He argues that IS research should seek out a wide range of disciplines associated with different research traditions, and make a strong case for a pluralistic believing that complex and multidimensional situations benefit from the selection of a range of methods.

In Mingers view, the adoption of a single method is of limited value and that different research paradigms will provide insight into different aspects of the situation and will therefore provide a more multi-layered understanding of the research topic. Different methods may be more useful in relation to some phases in the research than others, therefore a combination of approaches may achieve more comprehensive and meaningful results. Klein and Myers (1999) describe a set of

principles for conducting and evaluating interpretive field studies in IT and IS research.

4.6 Research paradigms

In order to establish a methodology which is appropriate to the research area and which adequately flexes the conceptual framework, it is necessary to explore the available research paradigms. Rossman and Rallis (2003) define a paradigm as "shared understandings of reality" and this chapter explores the different types of research paradigms that may be applied.

The literature is not cut and dried in the definition of research paradigms, nor in the use of terminology. Rossman and Rallis (2003) identify two main paradigms: positivism and anti-positivism. Critical theory was developed by Habermas (1972) to avoid a simple opposition of positivism versus anti-positivism dialogue. In sociological literature, the term constructivism or social constructivism is often used (Geertz 1973; Guba and Lincoln 2005; Miller and Crabtree 1999; Searle 1995). A further definition of the constructivist paradigm is that of "interpretative" research which is most commonly used in IT and IS research (Walsham 1995). For the purposes of this chapter, the author will use the following terms: positivism, interpretavism (which will encompass the ideas espoused in anti-positivism and constructivism) and critical theory.

Positivism is normally associated with quantitative research and was developed by the 19th century French philosopher Comte (1830 - 1842, in Martineau 1893) with a focus on observation and reason as the only valid means of understanding human behaviour. Positivism seeks to predict future outcomes through the testing of hypotheses in order to arrive at objective truth. According to positivism, theory is not static and should be revised or modified with the discovery of new evidence. Positivism is underpinned by the principles of determinism, empiricism, parsimony, and generality (Cohen *et al.* 2000). Determinism means that it is necessary to understand a series of events and causal links in the correct order since this chain

builds up to the event or phenomenon under investigation. Empiricism means that theories and hypotheses are supported though the collection of verifiable empirical evidence. Parsimony requires that the phenomenon and relevant observations are reported as economically as possible. Generality refers to the process of generalising the observed phenomenon to a wider population. Positivism argues for objectivity, measurability, predictability, controllability.

Critical theory is expected to be explanatory, practical and normative (Horkheimer 1993). In doing so, it is a transformative paradigm in that it does not simply seek to to explain what is wrong with a current social reality, but it also identifies the actors who are able to change it, and an achievable and practical goals leading to a transformation of that social reality.

Reality is multi-layered and complex (Cohen *et al.* 2000) and a phenomenon may be the subject of many different interpretations with social reality stemming from the experience of the individual and subject to individual interpretation. Knowledge, therefore, emerges from personal experience rather than existing independently and subject to external acquisition.. Emphasis is placed on sense-making, understanding and interpretation of phenomena. Interpretavism argues that realities are multiple and are based upon mental constructions which are socially experienced by an individual and group (Walsham 1995). In the absence of absolute truths, each construction is valid in its own right (Guba and Lincoln 2005). Interpretive studies find that meaning is created by people who interpret this through their own subjective perspective as they interact and experience the world. Interpretive researchers thus attempt to "understand phenomena through accessing the meanings participants assign to them" (Orlikowski and Baroudi 1991, p. 5).

The selection of a paradigm does not necessarily determine the research methods (Guba and Linclon 2005) and there may be some cross-over as will be discussed later. It is necessary to identify whether the research questions relate to positivism, interpretavism or critical theory and thus to select an appropriate methodology (Guba and Linclon 2005). They suggest that positivism leads the researcher towards a research methodology focused on quantitative analysis with which may involve the

use of such instruments as surveys, experiments and statistical evaluation. Interpretavism with its stress on subjective reality leads the researcher to select methods which focus on qualitative analysis, such as interviews, participant observations and individual accounts of experience and "recognizes the importance of the subjective human creation of meaning, but doesn't reject outright some notion of objectivity" (Miller and Crabtree 1999, p. 10) and is built upon the idea that it is possible to develop a social construction of reality (Searle 1995). Critical theory is wholly engaged with the topic, is often action-oriented and seeks critique and change.

In selecting a research methodology, it is necessary to determine the nature of the phenomenon under investigation and whether the phenomenon exists in nature or is a social construction (Guba and Lincoln 2005). Although the selection of a paradigm will tend to lead to an approach and thence to methods, instruments and measures, it does not mean that there will be no co-mingling of methods in the subsequent study. Bringing together the literature on paradigms, approaches and methods, table 4.1 below summarises the concepts:

Table 4.1 Research paradigms, approaches and associated methods (source: adapted from Guba and Lincoln 2005, Miller and Crabtree 1999 and Searle 1995).

Research paradigms	**Research approach**	**Research methods**
Positivism	Quantitative	Surveys: longitudinal, cross-sectional, correlational; experimental, and quasi-experimental ex-post facto research
Critical theory	Critical and action-oriented	Ideology critique; action research
Interpretavism	Qualitative and quantitative	Case study; Surveys; Biographical; Ethnographical.

In Chapter Three, a conceptual framework proposed the dimensions of social capital linked to alignment is thus, a social construction (Searle 1995). The nature of the relationships in the framework, for example, are less suited for examination through the positivist paradigm (Guba and Lincoln 2005). However, although the research is seeking to be explanatory, it does not set out to challenge and change organisations. It is unlikely that the researcher would gain access to organisations to be part of a change programme which would suggest the practical and normative aspects of critical theory Guba and Lincoln 2005). Such researchers would need to be wholly embedded within the target organisation and this would be extremely difficult to achieve in a commercial context even where the researcher has excellent contacts. However, in looking for explanations of the social construction of alignment (Walsham 1995), the study is well suited to examination through the interpretavist paradigm.

4.7 Research paradigms and research methods

Having established an appropriate research paradigm, it was necessary to consider the selection of quantitative, qualitative methods or a mixed approach. The choice of the interpretative paradigm does not, *per se*, determine either quantitative or qualitative methods but certainly suggests the appropriateness of techniques that lie within the qualitative tradition, for example, ethnographic and action-research studies (Walsham 2006). Quantitative and qualitative research methods involve different assumptions about how research should be conducted and the role of the researcher within that research (Creswell 2003). Reviewing the differences between quantitative and qualitative methods, it can be seen that clear differences when considering focus, data, meaning, approach, perspective, design and analysis. Qualitative research is concerned with the interpretation of meaning, for example, in textual data or the spoken word. In contrast, quantitative research is concerned with numerical data through use of statistical methods. The qualitative approach seeks to understand the multiplicity of perspectives of experienced by social actors, with the meanings that are ascribed to the experienced events (Creswell 2003).

Table 4.2 Key distinctions between qualitative and quantitative research (source: adapted from Creswell 2003)

Aspect	Quantitative approach	Qualitative approach
Focus	Scientific Asks "why" Well developed theory Controlled / laboratory Objective proof Deductive High degree of structure	Exploratory and descriptive Asks "how" or "what" Research begins with a single idea Naturalistic / interpretive Emphasis on 'human-as-instrument' Subjective discovery Inductive Little structure
Method	Experiments, surveys, testing, structured content analysis, interviews, and observation. May take little time to conduct	Involves unstructured interviews, observation, and content analysis. Takes a great deal of time to conduct
Relationship between researcher and subject	Much social distance between researcher and subject Some manipulation of subjects	Little social distance between researcher and subject Little manipulation of subjects
Data	Data is collected to test hypotheses.	Emphasis on understanding through looking closely at people's words, actions and records. Data collection in the natural setting
Meaning	Proposes a theory which is validated through observation. Searches for causality through comparison	Examines patterns of meaning which emerge from the data while retaining the construction of the world as the participants originally experienced it.
Design	Developed before data collection	Emergent
Analysis	Data is collected rigorously and analysed using statistical tools. Findings are often generalised	Patterns emerge after close observation, careful documentation, and thoughtful analysis of the research topic. Contextual findings are produced rather than generalisations but contextual findings. Early inductive analysis which evolves during the lifetime of the study It may not be possible to generalise findings

Using Table 4.2 as a guide and mapping it onto the research question, the following has been determined for this study:

4.7.1 Focus

Social capital is a social construct (Searle 1995). Although it might be possible to measure some components of social capital objectively, for example, the number of network connections, most are abstract concepts such as trust and are subject to individual perceptions.

4.7.2 Method

Although it might have been possible to conduct the field work only using surveys or other objective measures, they will not capture multi-layered or subtle meanings (Guba and Lincoln 2005). Nonetheless, the use of surveys or semi-structured was not discarded since it might add additional richness.

4.7.3 Relationship between the researcher and subject

In the quantitative approach, Creswell (2003) notes the researcher is relatively distant from the subject and is able to be more dispassionate in their approach to those subjects. In a qualitative study, the researcher is more engaged with the subjects and may bring their own experiences to bear on the study (Walsham 1995). In this study, it will be difficult to abstract the researcher completely due to the problems of bias and previous experience (see 4.13.1 below).

4.7.4 Data

Looking at the quantitative approach, data is collected in a controlled setting, akin to a scientific laboratory (Creswell 2003). However, if the researcher plans an exploratory approach, then data needs to be collected in a natural setting, allowing the subject and researcher to explore the research topic in a more unconstrained way (Guba and Lincoln 2005).

4.7.5 Meaning

Previous studies have suggested that alignment is derived from a number of different features, for example, the use of process or approaches (Bergeron *et al.* 2004; Byrd *et al.* 2006; Cragg *et al.* 2002; Croteau and Raymond 2004) and have, therefore, sought to prove or disprove its effectiveness through objective study. In this study, it is intended to discover meaning in an emergent fashion (Guba and Lincoln 2005). Although a conceptual framework is proposed, meaning will not be constrained by this framework.

4.7.6 Design

In a quantitative approach, the design is predetermined before data is collected (Creswell 2003). However, in a qualitative study, there may development of design as the study proceeds allowing an emergent approach to the design which may be able to make use of data which cannot be collected in one approach but may be accessed using another supportive method (Creswell 2003).

4.7.7 Analysis

The analysis phase of quantitative studies makes use of scientific and statistical tools and seeks to generalise the findings to a wider population. In contrast, the qualitative is inductive and the findings are context specific (Creswell 2003).

Although it might be argued that qualitative and quantitative approaches are aimed at wholly different understandings of phenomena with different assumptions built into each approach, when considering the interpretavist paradigm, both approaches may be relevant as demonstrated in this study.

4.8 Qualitative Research

"A qualitative study is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting." Creswell (2003, p.15).

Qualitative techniques are often more appropriate for management research since they can uncover the meaning of social phenomena, they are rich in complex meaning and provides insight which cannot be found in a quantitative study (Creswell 2003). Quantitative techniques are valuable when used to measure those items that can be assessed objectively and this may be combined with qualitative techniques (Creswell 2003). Qualitative inquiry requires extensive time spent in the field in order to collect a sufficient depth of data (Yin 2003), gain access to subjects (Walsham 2006) and to achieve a rapport with the participants (Walsham 2006). Creswell (2003) points to the complexity and time requirements needed to analyse data distilling it into themes, extensive writing of evidence and the writing up of multiple perspectives is highly time-consuming. In these circumstances, Creswell (2003) notes that participation in social inquiry does not have a guaranteed outcome and the researcher may feel adrift in the absence of firm guidelines and procedures which might be seen in quantitative research. Qualitative research assumes that reality is a social construct and that truth is contextual and derives meaning from the nature of perception (Guba and Lincoln 2005). In choosing a qualitative approach, a great deal of time and commitment is required by the researcher who, therefore, needs to determine whether there is an overwhelming reason for choosing a qualitative approach over a quantitative one (Creswell 2003).

4.9 Setting the methodology in the context of the Conceptual Framework

Chapter Three proposed a dimensional view of social capital each of which is evidenced by the presence of attributes. For example, the trust dimension is shown by different attributes of trust being demonstrated such as the sharing of sensitive information or being relied upon to deliver in a timely manner. There may be relationships between those attributes or they may be freestanding and separate. It is expected that there will be linkage between the tiers and between dimensions, for example, network relationships will were expected to give rise to trust. Trust was expected to promote collective efficacy. There may be feedback between the dimensions, for example, where trust may lead to improved reciprocity-expectation.

Since each dimension and attribute deals in perception and abstract concepts the researcher determined that it would be difficult to define quantitative measures for for such abstractions. In seeking an appropriate paradigm, approach and method it was necessary to keep this framework in mind both as a tool to inform thinking about the type of empirical study which may be carried out and as a guide to constructing the study itself.

The methodology selected explores the concepts within the conceptual framework and concepts which are commonly understood in social capital investigations, for example, trust and also the linkages between them. These investigations into alignment needed to be free-ranging and discursive so that a reality is constructed which is valid for each participant as well as the researcher. Thus an interpretavist approach was chosen to allow the creation of appropriate realities as well as in-depth participation in each case.

4.10 Qualitative research methods

Creswell (2003) proposes that there are five research types in qualitative research : biography, phenomenology, grounded theory, ethnography and case study. In each of these approaches, emphasis is placed on human interaction with the phenomena under consideration. Case study research has many similarities with, and uses many of the methods associated with data collection, that are encountered in phenomenology, ethnography and symbolic interactionism. Action research is problem-centred and requires the engagement of the researcher in a similar way as described above for critical theory in that it sets out to solve a problem within a specific context.

Biography was not considered appropriate for this study since the research is looking at a phenomenon which is recognised across industry sectors rather than by individuals. Phenomenology was considered in the context of undertaking cases studies. Phenomenological study involves identifying and locating participants who have experienced or are experiencing the phenomenon that is being explored. From

this perspective, there is no attempt to claim an ability to generalize to a specific population, but instead, the findings are relevant from the perspective of the user of the findings (Bailey 1996, p. 30). Grounded theory study is wholly inductive and theory evolves as the data is collected and explored. Strauss and Corbin (1998) stressed that several forms of sampling are appropriate at various stages of the study. The study continues until there is theoretical saturation, that is, all data is gathered until no new relevant data is discovered within a category and until all categories are well developed and validated. Josselson *et al.* (2003) note that the researcher often becomes overwhelmed. Since there is a body of theory concerning strategic alignment as is discussed in Chapter Two and a conceptual framework has already been developed, grounded theory was not deemed to be appropriate.

In ethnographic research, the study focuses attention on a community, selecting knowledgeable participants who know the activities of the community well in an attempt to understand the community in depth seeking to reveal common cultural denominators connected to the topic being studied. (Creswell 2003) Since this study did not seek to understand a single community, it has not been deemed to be appropriate. Similarly, action research and symbolic interactionism focus on the problems or situations found in single organisations (Creswell 2003) and this study set out to look at a small range of organisations.

The case study is not inherently a qualitative research method and, indeed, some case studies collect quantitative data (Yin 1994). Case studies often employ the methods associated with biography, phenomenology and ethnography and may also engage some quantitative methods. Case studies are not selected because they are representative but, rather, they give the researcher the opportunity to study the cases in some depth (Yin 1994). In most studies, the researcher will choose four cases as a maximum since generalisation is not normally sought in qualitative research (Yin 1994).

In this study, the selection of the interpretavist paradigm prompted the researcher to look at the selection of a qualitative research approach since it aimed to explore and explain the phenomenon of business and IS alignment using the social construction

of social capital. The conceptual framework drove the researcher in the direction of a qualitative approach to understand the nature of alignment using abstract constructions such as trust and mutual expectations. The business context for this study is financial services and therefore, the selection of an approach also needed to take account of the practicalities of obtaining access and time within busy and cautious organisations. Thus, it was necessary to consider how time and access may modulate the approach and, for example, whether it would be difficult to obtain consent for wholly unstructured interviews.

4.11 Selecting the case study approach

Yin (1994) proposes that the role of the case study is to ground the conceptual framework in real world issues and to provide the empirical data with which to inform that framework. His work suggests that the use of the case study for empirical inquiry is a highly adaptive method and supports this flexibility. The case study focuses on real phenomena which are well-understood by participants allowing the study of complex social phenomena in their natural setting (Creswell 2003). There may be different opportunities for the collection and analysis of data and different variables may add richness to the study. Yin (1994). Case studies may explanatory, exploratory or descriptive in their intent. In practical terms, there may be single or multiple cases within a case study and it may support qualitative or quantitative methods, or both (Yin 1994). Exploratory research which involves qualitative studies involving observation, interviews, and content analysis. Yin (1994) defines exploratory research as that which examines an issue or problem where there is little previous work upon which to base the theory. Such a study gains insights and familiarity with the subject of the study which may be the subject of further investigation. He defines explanatory research as that which involves quantitative studies, hypothesis testing and aims to explain a phenomenon in a specific situation and thus may attempt a generalisation by predicting the existence of certain phenomena and behaviours through proposed general relationships. Lastly, he defines descriptive studies as those which describes phenomena as they exist and

involve quantitative research or qualitative and quantitative methods in combination. It is used to identify and obtain information on a particular problem or issue. According to Yin (1994), in the case of descriptive research and data may quantitative and statistical methods may be used for analysis.

Table 4.3 below outlines advantages for the use of the case study approach in this case:

Table 4.3 Case study advantages and their implications (source : adapted from Yin 2003)

Advantages	Implications for this study
Holistic : deep analysis realistic context sensitive wide range of variables	The case studies allowed the researcher to have in-depth access to 4 organisations, with participants in their natural settings, exploring real-world problems.
Longitudinal develop history of case details of process causation and interactions situation as it happens	There was little opportunity to return to each organisation but it was possible to develop an understanding of the local situation in each participant firm.
High Internal Validity more complete understanding direct observation of situation multiple sources of data triangulation of data meaningful to subjects	There was a high level of internal consistency with several participants from both business and IS in each firm. The subject was interesting and meaningful to most subjects.
Adaptive questions can be changed to suit the subjects as the case develops methods can be changed during the study data sources can be changed	As the study developed, it became clear that it was appropriate to add a survey to the study. Group interviews were not successful and they were abandoned.

Yin (2003) recommends the selection of a case study when the study is exploratory and attempts to answer "how" and "why" questions about the given phenomenon and it is not possible manipulate the behaviour of the participants in the study. Yin points to the appeal of the case study when it is necessary to examine the context in which the phenomenon occurs because such contextual considerations are relevant to the phenomenon and when the boundary between the phenomenon and the context in which it is observed is unclear.

Stake (1995) and Yin (2003) argue for an approach to case study based research upon a interpretative perspective. This approach requires close collaboration between the researcher and the participant which will permit participants to tell their individual stories (Miller and Crabtree 1999). Participants describe their individual perceptions of reality which in turn enables the researcher develop a deeper insight into the actions of those participants (Lather 1992; Robottom and Hart 1993).

There is a great deal of academic work in this field which seeks to be either exploratory or explanatory by looking at process, maturity and governance and linking these factors to performance or perceived performance. Moreover, with the exception of van den Hooff and de Winter (2011) and Karahanna and Preston (2013), there is very little work on social capital in relation to business - IT alignment. Each of those studies looked at the outcomes of social capital whereas this study looks inside the organisation at the way that social capital is created and harnessed.

In this study, a case study approach was selected since complex and subtle meaning were sought which would not be available without an in-depth approach to the subject. There is limited prior research exploring alignment through the use of social capital theory and therefore the case study approach was determined to be suitable. The cases which were used existed in the same commercial environment, that is, the same competitive landscape and regulatory framework allowing those considerations to be discounted and, lastly, access to the participants was achievable.

4.12 Building the case study

According to Yin (1994), five components are required to make a case study approach the most suitable for a given research problem. These and the way that they are met in this study are elaborated in Table 4.4 below.

Table 4.4 Case study requirements (source: adapted from Yin 1994)

Requirement	How it was met
the research question is in the form of "how" and "why" questions	the research question asked how social capital was built between business and IS and why it worked in some cases and not others
propositions exist which suggest topics to be examined within the scope of the study, addressing subjects of interest, limiting scope and suggesting possible links between phenomena	conceptual framework meets these criteria
identification of the unit of analysis, that is, the "case", for example, an organisation;	unit of analysis (case) was an individual firm with access to both business and IS
logic linking data to the propositions	the dimensional and tiered approach to social capital provides this logic
criteria for interpreting a study's findings linking propositions and data	the dimensional and tiered approach to social capital provides these criteria

Once the five components above were established, it was necessary to produce the case study protocol which described the procedures and general rules to be followed and to guide the investigator in carrying out the case study.

The case study protocol was developed using Yin's recommended structure (Yin 1994) and consisted of an overview covering the objectives, issues and suggestions for relevant readings which was made available to anyone who may want to know further information about the study including the stakeholders, rationale for selecting the sites or cases, propositions being examined, and the theoretical relevance for the inquiry. The structure of the protocol is included in Appendix B. Field procedures which detailed access to selected organisations, gatekeepers and interviewees were also included in the protocol and schedule of the proposed data collection activities. It was expected that the protocol would be of interest to gatekeepers and key contact personnel in the participant firms. The protocol included questions which the interviewer needed to think about and how those questions might be answered. The protocol also included an outline of this thesis as the output. In the event, none of the participants or their organisations had any interest in the protocol.

4.13 Difficulties in using a case study

Yin (1994) suggests that the single case study can be appropriate to determine whether a theory's propositions are correct or, whether the converse is true and if another set of explanations must be sought. A single case may provide compelling evidence to test a theory but evidence produced by multiple cases can be considered to be more forceful, convincing and more rigorous. Chapter Three provides the initial theory and understanding of what is being studied prior to field contacts. In this case, the conceptual framework was produced and used as a communication and elaboration tool with initial contacts. This is discussed in depth in Chapter Five.

While Yin (2003) outlines clear advantages to using a case study, there are also disadvantages of the case study method concerned with validity, bias, historic and

costliness or time considerations. The author has added a further potential disadvantage of ethical considerations. These disadvantages are discussed below.

4.13.1 Bias and Perspective

All human experience is subjective and the values and previous life and professional experience of a researcher will incline that researcher towards a particular worldview which may influence their enquiry (Klein and Myers 1999). These biases may influence the direction of the research and also the judgement of the researcher. While developing an understanding of both the strategic alignment literature and the literature on social capital it became clear that to understand the abstract and social elements in the study, the researcher needed to it would be necessary to employ the interpretavist paradigm as described in section 4.9, with associated approaches, methods and instruments. This allows the researcher to be aware of their subjectivity and perspective while remaining reflective and critical (Guba and Lincoln 2005). Subjectivity may also introduce bias in research and may be derived from the worldview experienced by the researcher (Rossman and Rallis 2003). This was important to bear in mind in this research since the author has a commercial background in Information Systems primarily in financial services. While this was an advantage in creating opportunities for access for the research and understanding the terminology, it was also necessary that the researcher maintained an awareness that personal experiences might lead her to place inappropriate emphasis on some parts of the evidence while overlooking other parts.

Denzin and Lincoln (1994) recommend that research bias is managed by ensuring that the research is carried out systematically, records are maintained on the research process, analysis of the data, and any problems which are encountered and how they are overcome, involving relevant and interested parties, including colleagues and research participants in the design of the research and the analysis of the data and ensuring that there is rigorous self-examination of the researcher's own beliefs, values and preconceptions. The author is more familiar with the positivist approach both in terms of academic experience and also working in both a discipline and sector where greater credence tends to be given to scientific enquiry, the search for

observable, objective facts and incontrovertible truths. Again, it was important that the researcher kept these biases in mind when looking at qualitative data so as not to ignore how people perceive their individual experiences.

4.13.2 Validity and Reliability

Empirical research in the positivist tradition places great importance is on reliability, internal validity, and the external validity of measures and procedures which can create difficulties for qualitative researchers working with naturalistic inquiry (Lincoln and Guba 1985). They recommend the alternative constructs of credibility, transferability, dependability, and confirmability. However, since IT/IS research tends to belong more in the positivist and quantitative tradition and therefore the terms reliability, internal validity, and external validity will be used in this study.

Reliability concerns the ability of the researcher to replicate the results of the study under similar circumstances Richards (2005). In order to achieve reliability, the researcher needs to consider matters such as ensuring that the data is recorded and transcribed in a systematic fashion. For qualitative data such consistency can be achieved through coding raw data in a clear and transparent way so that the themes are readily understood. Richards (2005) concluded that reliability was not the same as total consistency and that although employing standardised measures in a controlled setting is highly desirable in a positivist enquiry, it may be incompatible with naturalistic research. In contrast to quantitative research, where the source of validity is stated and understood from the outset (Creswell 2003), qualitative research needs to demonstrate its assumptions as they emerge which enables an appropriate and reasonable determination of validity (Holliday 2007).

Internal validity refers to the validity of a causal inference and from an interpretavist perspective, validation is the process of evaluating "the 'trustworthiness' of reported observations, interpretations, and generalizations" (Mishler 1990, p.419). In qualitative research, it is necessary to test how well the experience of the participants fits the researcher's constructions, that is, they are empirically grounded. The credibility of findings may be improved if the researcher is able to spend sufficient time with the participants to enable checking for distortions and mismatches and to

explore experiences in greater detail, clarifying or revising any tentative findings (Flick 2002). This is an iterative process and needs to be balanced against the availability of time with participants which was an area of major concern in this study since it was unlikely that participants would be prepared to devote much time beyond their initial commitment.

External validity refers to whether findings can be generalised beyond the study (Creswell 2003) and is also known as transferability in qualitative research (Lincoln and Guba 1985). Qualitative study places emphasis on the description of the experience of a small number of participants and is also limited by the context of the study (Creswell 2003). If descriptions of participants' experience are sufficiently elaborated, then it may be possible to transfer those findings to a wider population. However, generalisations to other populations and contexts will always be open to question and are likely to be derived from the context of individual experiences. This study does not aim to suggest wholesale generalisability of how alignment between business and IS is achieved. However, by selecting participant firms which share a common competitive and regulatory environment, there may be interesting themes which prompt reflections from the reader of the final study.

Adequacy refers to the amount of data collected in a qualitative study and is said to be achieved when sufficient data has been collected so that previously collected data are well-understood and are confirmed by saturation, in other words, there are no more inference to be drawn (Morse *et al.* 2002). Appropriateness means that information has been sampled and with the specific intention of meeting the theoretical needs of the study, that is, to meet the demands of the conceptual framework rather than at random (Morse *et al.* 2002) who recommends that multiple sources of data are obtained to provide saturation and confirmation of an emerging framework. This study intended to explore the conceptual framework using case study firms where the participants were interviewed as "matched pairs" wherever possible, that is, someone from each side contributed in order to get a business and IS perspective. Within each organisation, as many pairs as possible were interviewed. This was clearly determined by the size and scale of a firm. This was backed up by a survey which was also issued to each firm.

Triangulation (Morse *et al.* 2002) further ensures validity where data is sought from multiple and different sources to facilitate of cross-checking and corroboration of evidence. Different sources may include additional participants and other methodologies, for example, the use of a small survey within each organisation. In this case, there is a concern that the interview participants from any one firm may share a view which is completely contrary to the people not included in the interviews. The short survey attempted to address this concern but, of course, it may produce different kinds of data which may be subject to different interpretations.

4.13.3 Historic

Yin (2003) suggests that organisational and economic changes may make a case study out of date and irrelevant. This was a concern since one of the original participant firms underwent a major organisational change just after the interviews started and was therefore excluded from the study. However, there still remained four participant firms.

4.13.4 Ethical considerations

In selecting firms to participate in the case study, it has been necessary to consider issues of confidentiality both for the firms and for the individuals within the firms. Walsham (2006) cites Bryman (2001) and Diener and Crandall (1978) who identify four areas of concern: harm to participants, lack of informed consent, invasion of privacy, and deception. These factors are dealt with in detail in the next chapter.

4.13.5 Time considerations

Case studies are very time intensive for the researcher, can involve a high volume of data which may be very time-consuming to analyse and there may be problems of access Yin (2003). There were all considerations for this study and, with effective project planning, were all overcome. Access needed to be planned since the researcher needed to travel to the participant firms and to ensure the availability of the participants.

4.14 Refining the conceptual framework

Qualitative researchers sometimes use peers or colleagues to act as a "debriefer" and they play the role of devil's advocate, when considering questions about data collection, data analysis, and data interpretation (Lincoln and Guba 1985). In order to gain a perspective on the direction and appropriateness of the conceptual framework the researcher used a pre-study to access domain experts to evaluate and improve the accuracy, relevance, and utility of the conceptual framework. This preparatory work ran in parallel with the development of the method since their input was necessary for the feasibility of some of the work. Their roles and interactions will be described in more detail in the next chapter.

4.15 Combining approaches

Initially it was intended that this study would be wholly qualitative but in discussions with one of the CIOs, it was suggested that the interview participants might not give a real picture of alignment in their firms and that a supporting survey might give extra richness. This was mooted to the other 3 members of this group and they all supported the idea.

Paradigm incommensurability Kuhn (1962) suggests that the combination of different research paradigms and then comparing the results of each is impossible and will only lead to a philosophical nonsense. Nissen *et al.* (1991) examined the issue of incompatibility between paradigms finding that researchers create both ontological and epistemological problems when two paradigms are combined. These concerns about incommensurability alert the researcher to the problem so that approaches "can be retrofitted to each other in ways that make the simultaneous practice of both possible" Guba and Lincoln (2005, p.200). The debate about the incommensurability of paradigms has often been a consideration for IT and IS research. However, where studies have looked at the impact of IT upon the individual, organisation or institution, researchers have found utility in the use of interpretive methods since those are social beings or organisations. This study used a

mixed-method approach Mingers (2001) aiming to combine both qualitative and quantitative methods. The qualitative aspect comprised the data provided by the case study fieldwork, and the quantitative by questionnaire based data which provided a supporting context to the interviews. Since they both deal with perceptions, the researcher did not encounter any insurmountable paradigm incommensurability.

During the analysis phase, it was necessary to relate the quantitative and qualitative data in a meaningful way. Garcia and Quek (1997) point to the strengths and benefits of qualitative research and caution against the use of applying quantitative methods to that qualitative data which will muddle and confuse the results. They caution that where a study like this combines both quantitative and qualitative methods, it is necessary to develop a framework which captures the subjective views of the participants and to conduct an analysis of the behaviour of the model objectively and rigorously. The use of the conceptual framework as a guide to the method and to support the analysis supplies this rigour.

4.16 Summary

This chapter introduced the researcher's thoughts on the methodological choices which were made in this study. Beginning with a short introduction in section 4.1 , it then explained the segregation of methodology and method in section 4.2 and the rationale driving the selection of the methodology in section 4.3. Section 4.4 reviewed the methodological matters encountered by previous studies of alignment and section 4.5 discusses methodological concerns for IT and IS research. The adoption of the interpretavist paradigm was explained in Section 4.6 and section 4.7 offered an analysis of methods appropriate to different research paradigms, examined qualitative and quantitative approaches and their suitability for this research. Qualitative techniques were explored in section 4.8 and section 4.9 established the methodological choices against the conceptual framework. This led on to an examination of the qualitative approach and research methods in section 4.10 and section 4.11 examined issues governing the selection of the case study approach. Methodological concerns about using a case study were reviewed in section 4.12 and

section 4.13 looked at difficulties which may arise from the case study approach. Evaluation of the conceptual framework is investigated in section 4.14 and section 4.15 examines issues concerning a mixed method approach.

This chapter presented the methodological choices for this study and set them in the context of the interpretative paradigm selecting a mixed-method approach using both qualitative and quantitative methods to support the discovery of subtle and complex meaning. Chapter Five will cover the detailed pre-study work, criteria for case selection, procedures for engagement with each participants, setting their expectations for participation and outcomes. The focus of this chapter sets the scene for Chapter Five which will be concerned with grounding the methodology into practical method.

Chapter Five - Method

5.1 Introduction

The selection of a research methodology, as described in Chapter Four drives the selection of methods to support the gathering of data to explore the research question. This chapter moves from the broad methodological questions to the broad methods and thence to the detailed methods which were modified and revised as the study progressed. Where the preceding chapter was concerned with the "why" of the approach to data gathering, this chapter is concerned with the "how" that data gathering will be carried out, the approach to the case studies, the way that these will be supported by survey data, the tools and the analysis methods. This chapter moves the study from the philosophical to the practical.

This chapter begins with an outline of the method in section 5.2 and offers a schematic diagram of the method. Section 5.3 examines the creation, use and contribution of the Debrief Panel. In section 5.4, the selection of the cases is outlined covering initial contact, ethical and confidentiality concerns, selection of possible cases, interview commitment, how contact was developed and problems of resistance. Section 5.5 looks at the need to measure the sources of social capital and section 5.6 explores approaches to data collection through interview, group interviews, access to meetings and documents. The chapter continues with preparation for the interviews in section 5.7 explaining how the *aides memoire* were developed and used to make the most productive use of interview time. Section 5.8 outlines the background to the use of the questionnaire in the supporting survey and how the survey was trialled. Data collection methods for both interview data are discussed in section 5.9 and section 5.10 examines the data collection of the quantitative data. Section 5.11 outlines security considerations for both quantitative and qualitative data. Section 5.12 goes on to discuss analysis methods for the qualitative data and section 5.13 examines the use of statistical methods for the quantitative data and maps the process onto the conceptual framework. The chapter concludes with a summary in section 5.14.

5.2 Outline of the method

Once the research problem had been established and the researcher had explored the literature on business alignment, the next stage was to develop an understanding of alignment in terms of social capital. At the same time the Debrief Panel was created to allow the researcher to check back with practitioners for its meaning and sense (Lincoln and Guba 1985). In parallel with this first contact was made with potential participants. These activities continued while the research underwent a due diligence exercise with five possible participant firms and some preparatory interviews took place. A semi-structured document was created to provide an *aide memoire* for both business and IS communities. The same document was used to construct the questionnaire. In-depth interview took place in mid 2013 and the questionnaire was open from summer until November 2013. The qualitative and quantitative data were analysed separately. The figure below shows a high level representation of the method used in this study:

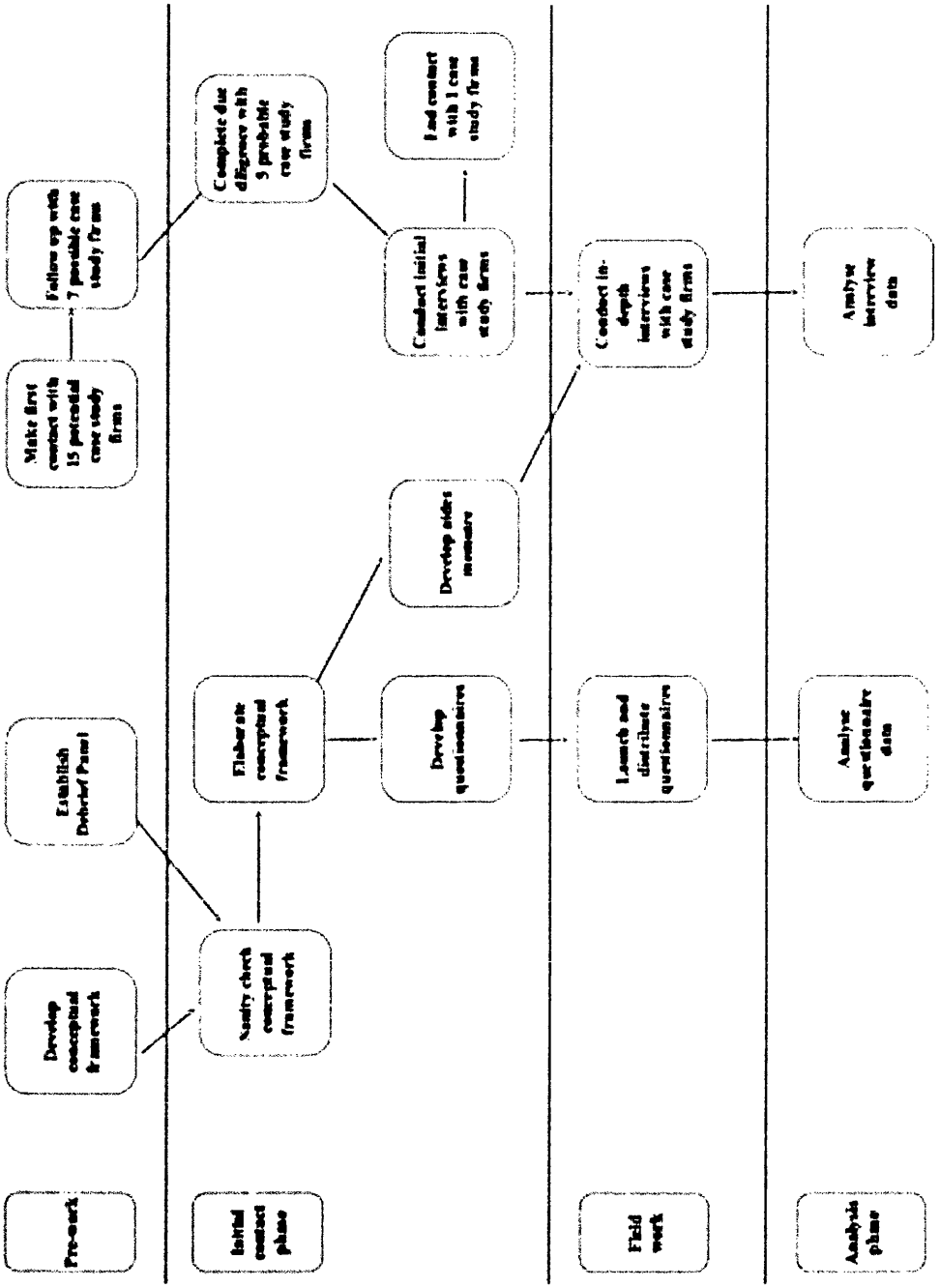

Figure 5.1 Schematic of the method

5.3 Debrief Panel

In qualitative research, a process exists known as member checking (Morse *et al.* 2002) where researchers use informants to understand and interpret findings. This process is intended to confirm the accuracy and credibility of the findings. This places an informant in a subtly different role to that of a participant in the study. In

order to gain a perspective on the direction and validity of the conceptual framework the researcher adapted the member checking process and held interviews with four interested parties : two Chief Information Officers and two senior executive committee level business representatives. They shared an appreciation that business - IT alignment is an issue for organisations and agreed to informal interviews to generate discussion around the research question and act as a sounding-board for the conceptual framework. Coming from different organisations, they were aware of each other's existence and contribution, but were not identified to each other. Interviews with the Debrief Panel were informal and it was possible to use prompts and suggestions to gain insights into their thinking in a way that was not possible to direct the main interviews where the researcher needed to retain a more impartial stance. For example, when discussing trust with the Debrief Panel, it was possible to explore whether the panel member trusted their opposite number and whether they believed they were trusted. When a panel member said that they had a limited level of trust in their opposite number but believed that they were trusted without reservation, it was possible to explore this as a possible paradox whereas, in the case study interviews, the researcher might not want to suggest that this was a paradox.

Silverman (2005), advises caution when elevating respondents to such a "privileged" position by asking them to verify the research findings. For this reason, the four subjects of the pre-study are excluded from the main study.

Their roles and interactions are described in more detail later in in this chapter.

5.3.1 Debrief Panel - initial work and validation of the conceptual framework

The initial interviews took place as the conceptual framework began to emerge. Initially, developing the conceptual framework, was a solitary experience since this research does not form part of a group or project. The researcher was anxious to explore the concept of social capital in the context of alignment with a group of people who would both understand the need for alignment and would appreciate the nuances of social capital. Interviews with the Debriefer Panel were informal and it was possible to use prompts and suggestions to gain more insights into their thinking in a way that will not be possible to direct the main interviews.

The Debrief Panel was known to the researcher either professionally or through academic contacts. Although they knew that there were other people in the group, they did not meet each other or know their identity. A focus group or use of the Delphi technique were considered but the participants were anxious to remain anonymous and eventually the researcher decided that participants would be more likely to be honest if they took part in bilateral conversations.

5.3.2 Debrief Panel - initial meetings

The first bilateral meetings took place as the conceptual framework chapter was emerging in December 2011 and then further meetings took place in early 2012 to incorporate the feedback into the framework.

The conceptual framework proposed that network connections and shared norms will lead to the expectation of mutual obligations in a business context. The Debrief panel allowed the researcher to explore concept in greater depth. The researcher had constructed a tentative model of the way that the fundamental elements of social capital related to each other and presented this to each member of the Debrief Panel for comment. They were each supportive of the concepts and the researcher used this opportunity to look at the detailed attributes within those fundamental elements. Those attributes were explored with each person and the table below summarises how relevant the group considered each attribute. The relevance score was achieved as follows : in conversations with each member of the Debrief Panel, each one of these tentative attributes was discussed as to whether the group member considered it relevant to the broad dimensions of social capital in the context of alignment. If all four respondents considered it relevant, then it was given a score of 4, if only 3 considered it pertinent, then it was given a score of 3 and so on. No attribute was considered to be irrelevant by every respondent. The detailed breakdown of these scores is shown in Appendix C. This exercise provided a "sense check" that the concept was realistic in the view of practitioners (Morse *et al.* 2002) since the researcher was concerned that she might be approaching the subject from a skewed perspective. It was also intended to inform the guidelines and structure for both the interviews and the approaches to the participant organisations.

The table shown in Appendix C2 indicates items which were mentioned by at least one group member. Whereas the attributes outlined in table C1 in Appendix C were drawn from wide reading across the literature on social capital, looking for common themes in the scholarly literature, as discussed in Chapter Three, those outlined in table C2 in Appendix C are only derived from four conversations and were therefore treated with some caution since they might represent overly sanguine or negative feelings about the relationship between the two groups.

5.3.3 Debrief Panel - follow up meetings

The output from the initial meetings as shown in Appendix C was reviewed and distilled into tables 5.1, 5.2, 5.3, 5.4 and 5.5 shown below:

Table 5.1 Network attributes reviewed by the Debrief Panel

Attribute
How well they believed that they knew people in the other group
Frequency, source and quality of formal interaction
Frequency, source and quality of informal interaction
Long term expectations of the relationship
The importance of communications between the groups
The importance of communications between different levels in the groups
Relationship between the technology (delivery) organisation and the business
Direct relationship for information, support or advice
Indirect relationship for information, support or advice
Similarities seen through age or shared generational interests
Similarities seen through education and background
Similarities through extra mural activities
Identification with own professional group than with peers in the other groups
Representation of IS management in the senior management / leadership team
The existence of a nominated and responsible person or group to face in the other group to enable good and clear communication
The existence of a supportive structure to enable consensus
The existence of long-standing relationships

Table 5.2 Shared norms attributes reviewed by the Debrief Panel

Attribute
The sharing of values with people in the other group
Understanding of the language (technical, slang or other jargon) used by people in the other group
The need to use a specialist or professional language
The possibility that the use of this language might confuse people in the other group and whether this matters
The existence of a shared history with people in the other group
The existence of shared or common processes for example, for budgets, projects or communications
Whether these processes are common because they are commonly used throughout the organisation or whether they are shared through perceptions of mutual utility
Perception of the efficiency versus bureaucracy of the other group's processes
Perception of the appropriateness versus the need for uniqueness of processes apply in different areas of the business and the validity of such approaches
Perception of the regard (positive or negative) for the team by people in the other group
Perception of the regard (positive or negative) for the function by people in the other group
Perception of the regard by the organisation of the group in comparison to the other group (for example, not being rewarded in the same way)

Table 5.3 Trust attributes reviewed by the Debrief Panel

Attribute
Feelings of trust towards people in the other group
The development of trust over time
Confidence in being able to take initiatives or controlled risks in the belief of the support of the people in the other group
Confidence in the competence of members of the other group in their own sphere of expertise
Confidence in the knowledgeability of the other group about the other area of expertise (for example, did business people know about IT)
Understanding of the level of competence in the other group
Feelings of trust from people in the other group
Confidence that that people in the other group were able to take initiatives or controlled risks in the belief of the support of this person
Rationale for the growth or diminution for trust
Whether trust is uniformly granted
Sources of greater or lesser experienced or granted trust do they trust
The existence and evidence of clear demonstrations of integrity
Good quality and regular information as a demonstration of trust
The development of trust over time and it takes a long time to evolve
The generation of trust through recommendation
Importance of mutual trust
Usefulness of one-sided trust in some cases
Appropriateness of one-sided trust (where one group they did not need to demonstrate trustworthiness towards the other group)

Table 5.4 Reciprocity expectation attributes reviewed by the Debrief Panel

Attribute
Mutual expectations of the delivery of services or benefits (for example, one group provides requirements and the other provides a service) or whether one group is perceived as serving or servicing the other
Nature of mutual obligations being simple and transaction based or more complex
Occurrence of any lag between the fulfillment of the reciprocated obligation
Existence of any concern that obligations are of equal value
Existence of any concern that a beneficial action is carried out without any transactional expectation of reward from the other party
Existence of advice seeking from the other group
Whether the respondent feels happy to give advice
Existence of advice seeking by the other group
Whether the respondent feels that the other person is happy to give that advice
Confidence that advice is of the right quality, given with the right expertise, depth or breadth
Expectations of uniform advice (quality, given with the right expertise, depth or breadth) in the other group
Whether the respondent has varying expectations of people in the other group and the reason for this
Importance of partnership
Importance of respect in the other group's capabilities
Importance of understanding how IT contributes to business strategy
The existence of a prior relationship to enable the fulfilling of mutual obligations not by simple transactions, each party does things for the other side and that results in "kickbacks" to each other
Importance of a personal relationship that allowed a partnership to develop and allowed them to short-circuit formal process
Usefulness of being able to tap into non-work expertise (as a way of building relationships)
The perception of sharing a set of common objectives between the groups that are designed to further the aims of the organisation

Table 5.5 Collective efficacy attributes reviewed by the Debrief Panel

Attribute
The importance of professional process (for example, project delivery)
The sharing of common goals with the other group
The perception of sharing a set of common objectives between the groups that are designed to further the aims of the organisation
The perception of how objectives are set within in the organisation and how or if they cascade to individual groups
The perception that the groups know that they share the same goals
The perception of the group's contribution towards the achievement of the goals and strategy of the wider organisation
Whether the respondent believes that the groups set about executing the organisation's goals together
The perception of the initiation of the process of goal sharing, for example, is it driven out of the business, IS or from some shared or common process
The perception of who prevails in any contest to determine direction and / or agenda setting)
The perception of who sets the agenda (that is, who determines issues over which there will be contests, deciding the board level agenda)
The perception of who create the interaction to sets the agenda
The understanding of how goals have been achieved (for example, using project reviews, financial reporting, balanced scorecards or more subtle means such as rewards)
Examples of when the organisation has been particularly effective
Insights into effectiveness
Insights into failures to be effective
Perception of respondent the business strategy (execution capability) being effectively throttled by IS because of constraints such as budget and execution capability.
Perception that efficacy can often be achieved through by-passing espoused norms and processes
Perception that there was a need to look back at projects, they simply knew that the project had worked well

Initially it was intended that this study would be wholly qualitative but in discussions with the Debrief Panel, it was suggested that the interview participants might not give a real picture of alignment in their firms and that a supporting survey might give extra richness. One Debrief Panel member suggested that the interview participants might not represent the wider range of views that existed in the firm. The views expressed might be either too extreme or too bland to represent the real hinterland in that firm. This was mooted to the other 2 members of this group and they all supported the idea. At roughly the same time, one of the contacts at a potential case study firm also suggested that it might be easier to obtain support for a questionnaire rather than interviews. The researcher was reluctant to abandon a wholly qualitative approach since it was hoped that richer and more textured responses would be achieved through interviews.

From these concerns, a plan was developed to support the interview content with a short survey. The survey would distribute a questionnaire to all managers, both business and IS. Thus parallel activities took place developing the approach to interviews and the structure and method for a questionnaire.

5.4 Selection of the cases

This study is examining a well-known phenomenon from a new angle. Yin (1994) suggests that the single case study can be appropriate to determine whether a theory's propositions are correct or, whether the converse is true and if another set of explanations must be sought. Yin (1994) notes that the evidence produced by multiple cases is frequently considered to be more forceful, convincing and more rigorous. A single case, while allowing a more in-depth view of the issue in a single organisation, would not support a wider-ranging view of the issue of alignment. While the researcher does not believe that wide-ranging generalisation will necessarily be drawn from this study, it will nonetheless be possible to see over-arching themes should they emerge. Thus multiple cases were chosen to investigate the concept of social capital more widely. Following the guidance provided by Yin (1994), it was decided that four or five cases would be chosen to obtain a more

compelling and more robust study than the use of a single case. Since all cases came from the same industry and sector within that industry, that is, they were all investment managers in financial services, they were all subject to and experience the same competitive and regulatory environment. Each case, however, encountered a different internal environment, for example, one might be part of a large international firm whereas another might be much smaller and wholly UK based.

This study is concerned with research issues in commerce and industry, and the case study will be carried out within investment management organisations and each of the interview respondents were managers or decision makers within those organisations. The study focuses on concerns of management and therefore that context requires special consideration. According to Easterby-Smith, Thorpe *et al.* (2001) there are several special concerns to be taken into consideration when carrying out case studies in management environment. Managers are busy people. In order to persuade them to commit their time and that of their organisation to a project or study they need to be convinced of its value and, even that they may gain from it. This might make access for fieldwork in organisations problematical which create time constraints which mean that it is only possible to conduct short interviews. Security is a very important issue since the study may deal with sensitive data. It is therefore necessary to give each organisation a high level of confidence and comfort regarding identity, confidentiality and publication rights associated the research. Since this research explored four cases, it was necessary to protect each organisation from the input of the others, not only to ensure sound and uncontaminated research but also to ensure commercial confidentiality.

5.4.1 First contact

From the start of this study in October 2011, the author has maintained industry contacts through professional networking, invitations to speak at professional events and at off-sites with various investment managers. as well as having a long-standing set of informal contacts developed over many years. This has meant that the

researcher was able to maintain a strong relationship with the sector and thus tap into a pool of people who had an interest in the subject area.

In view of the possibility that many approaches would yield no contact, the researcher contacted fifteen firms initially. These introductions were initiated through either known contacts (for example, the researcher had previously worked with a contact at one of the firms and was able to request an introduction) or via a third party who brokered the introduction. There are clearly some risks associated with this as an approach since the possible group of contacts may be skewed by the limits of personal relationships and there was a possibility of the group having a common perspective rather than reflecting a broad spectrum of opinion within the industry. However, it was also necessary to be pragmatic since the sector is well-known for being resistant to outside views enjoying a "bubble of inward-looking self-regard" (Welby 2013) and contact is highly dependent on personal recommendation. In this respect, the researcher is fortunate in having this wide range of contacts developed over many years and these contacts would be difficult to achieve for someone without industry experience.

Eight firms expressed either no interest in taking part, were reluctant to open their doors to an outsider or stated that this was not an opportune time for this kind of engagement, for example, they were going through an employee engagement exercise and believed there would be an overlap or it would be time consuming. In attempting to establish four or five viable cases, the researcher decided to open conversations with the remaining seven possible cases.

5.4.2 Confidentiality and ethical considerations

The research was governed by principles of confidentiality and ethics. Participants only took part having given informed consent and they were assured of confidentiality and anonymity. Participants only participated in the study voluntarily and all possible steps were taken to ensure that no harm came to participants and their organisations. No financially sensitive data would be sought or used.

Ethical considerations and oversight were governed by the Research Ethics Policy for the School of Management at Swansea University and is subject to the scrutiny of the Ethics Committee of the University. The researcher was required to complete an assessment of methods and approach to ensure the research remained within the limits of the ethical policies of the university. It was not considered necessary to obtain further approval from the Ethics' Committee of the School.

In approaching organisations to participate, it was important to contact people who were relevant and appropriate participants in those organisations and to make sure that they understood the nature of the study so that they were able to consent to participation and did not feel that they were being deceived about how the information was to be used. Having worked within organisations such as the participant firms and having been contacted herself on a number of occasions previously, the researcher was aware of the type of concerns that might be raised by organisations and sought to mitigate the concerns by discussing matters of confidentiality and anonymity from the outset. From initial conversations, it was clear that issues of confidentiality covered both concerns that there would be no exposure of individuals or the participant firm as well as no disclosure of commercially sensitive data. Walsham (2006) discusses this need for confidentiality where it may be possible to deduce the firm and the participants' identity. Commercial sensitivity not only related to financial and contractual information, for example, how much the IT discretionary spend might be or whether the firm was considering starting or exiting a contract for services or software, but also more subtle information about how the internal business of the company is transacted. For example, if a case study were to reveal deep organisational fissures and it was possible to identify the organisation, it would be possible for competitors to attempt to poach unhappy, talented staff. Similarly, individual participants were being asked to be very frank in their assessment of their relationships with people in the other teams. If it were possible to identify those individuals, then they would be fearful that there might be some consequences which might have negative outcomes for their career. It seems likely that no access would have been granted without assurances regarding anonymity and confidentiality.

Some organisations were more concerned about confidentiality than others. Some were reluctant to go ahead with any work without engagement of their IT security, Legal, Operational Risk and Compliance teams. In one case, this preparatory due diligence took almost three months to complete involving a range of email exchanges and telephone conference calls with the researcher as well as internal discussions which excluded her. Others only needed to be reassured and to gain approval and support from senior management.

Of the eight firms which expressed no interest in taking part, five stated a concern about confidentiality and security as a reason for not wishing to participate. They were not interested in receiving further information which might have allayed their worries and two stated that it was company policy not to take part in any external studies, even if they were held under the auspices of an industry body or regulator.

Each firm had responded positively to the opening conversations and requested emails of background information. None of the firms were interested in seeing a formal case study protocol but first conversations indicated that they shared many of the same concerns regarding confidentiality and commitment. Therefore information was provided as a generic package to the contact members of each firm so that they could share and discuss this with possible respondents, other managers, interested parties and those whose support was necessary to obtain approval. This information pack aimed to address the general concerns and comprised assurances concerning ethical matters. Concerns about ethics, oversight and confidentiality were addressed by providing a link to the University's statement on ethics and assurance of the anonymity of organisations and individuals. The author confirmed that, if direct quotations were to be used, it would be with the participant's agreement and would not be possible to identify them. It was confirmed that the results would be embargoed for one year after completion A statement covering oversight was provided to confirm to participant organisations that the study is wholly for academic purposes and undertaken as part of doctoral research at Swansea University and that work was overseen by two supervisors who are senior members of the university and is subject to the scrutiny of the Ethics Committee of the University. The author confirmed that, interviews transcripts would be maintained confidentially with no

unauthorised access. This level of confidentiality was important since it would have been possible to identify individuals and organisations from the transcripts. No financial information was to be collected or used which includes information in the public domain since it might allow a reader to deduce which organisation was being cited.

Concerns about access to and meaningfulness of the output were addressed by providing an explanation that data would be analysed using both qualitative techniques (content analysis looking for themes and patterns) and quantitative techniques seeking correlations between themes. Potential participants were advised that it was unlikely that any output would be meaningful on its own and that, furthermore, the published output would be totally anonymised. In the thesis, firms will be referred to as FinCo1, FinCo2 etc and the participants as Respondent 1, 2 etc. Any disclosure by a participant which would allow an external party to identify the firm or individual would be excluded from the published thesis. The thesis will be embargoed for 1 year after final acceptance and therefore will not be publicly available until over a year after the completion of the field work stage of the study. It was expected that this would provide greater surety of anonymity to the participants.

In developing this research study, the researcher is making use of theory of social capital which is widely in use in sociological and developmental studies but is little used in business research. Therefore it was likely that it would be unfamiliar territory to members of participant organisations and thus it was necessary to provide background information in language appropriate to the audience. A short presentation given at the UKAIS Conference in March 2013 was provided as background for interested parties.

5.4.3 Selection of possible cases

In the remaining seven possible cases, further contact was made in the hope that it would generate sufficient cases with as much diversity as possible within the chosen constraints of this study:

Table 5.6 - Possible case study participants

Possible case	Environment
1	UK branch of a European organisation within a European bank
2	UK subsidiary of a global firm
3	UK based, small independent firm
4	UK based subsidiary of a firm with UK and US operations
5	UK subsidiary of a large UK firm having a high level of autonomy
6	UK based branch of a major UK firm
7	UK based medium sized firm with some global reach

5.4.4 Interview commitment

The reality of business life is likely to be much more complex and textured than the conceptual framework developed earlier in the study and the researcher intended to use interviews to challenge and enrich that framework. It was necessary to give the possible participants an idea of the time commitment required and the nature of the interview. The interviews were planned to take approximately one to two hours each and would discuss the interviewees view on the dimensions and attributes in the conceptual framework. subjects of the questions and the relationships in the model. Each organisation was asked to make available or suggest a range of interview subjects in both the business and IS teams. Where possible, the researcher hoped to be able to interview "matched pairs", that is, representatives of IS and the business who are concerned with the same business area. After the difficulties with the group interviews, it was decided that the interviews would take place separately to allow the parties to be as straightforward and honest as possible. It was important that they should not feel the need to tailor their replies for the other party. For example, an interview with IS decisions makers might discuss formal meetings held with the

business decision makers, whether formal meetings are useful, whether the real decisions are made elsewhere, whether decisions are handed down and so on. If they held dramatically differing views, then it might be difficult for a participant to be honest. The researcher stressed that interview subjects were not being asked to be indiscreet, simply to be honest and to express their opinions without constraint. The researcher offered to conduct interviews on a face-to-face basis according to the preference preference of the participant. Skype or telephone calls were also offered to fit with the availability and location of the participant.

5.4.5 Developing Contact

In each firm there was a concern about confidentiality, disclosure of commercially sensitive data and their time commitment. To that end, the initial conversations in all but one firm involved the Compliance and Legal departments. Two firms also wanted to involve their IT security teams.

Some of the companies were reluctant to become further involved despite their initial enthusiasm. There appeared to be a two main reasons behind this : the initial contact person was not a key influencer in persuading other senior members of the firm to participate but was reluctant to admit that they were unable to generate support and the organisation was going through a major internal change and was unwilling to commit to outside engagement. Possible Cases 2 and 7 dropped out at this stage. Neither company explicitly stated that they no longer wished to participate but, as weeks passed, it became increasingly difficult to make progress and to gain any commitment to move forward, make appointments and engage with members of the senior teams.

The researcher was able to establish good contacts with Possible case 6 and senior management, including the CEO were keen to participate and saw the research question as a relevant and legitimate management concern. Initial meetings took place with the Compliance and Legal departments and some initial interviews took place in June 2013. Further meetings were scheduled for July 2013. However,

between the first and second wave of meetings, radical changes took place including the sudden departure of the CEO. The remaining senior managers were unwilling to make any further commitments. This firm was excluded at this stage.

Thus progress was made with Possible cases 1, 3, 4 and 5. It should be noted that, as discussed in Chapter Two, this is a turbulent industry with organisations undergoing frequent restructures, mergers and acquisitions and so it was not wholly surprising that some firms would be too absorbed in these changes to be open to contact with an external researcher. Indeed, during the course of the interviews, there was some time lag in Possible case 4 while the researcher waited for further interviews to be scheduled. Eventually, the number of interviews were curtailed since two out of three of the remaining interview participants had left the firm with short notice.

The final set of participant firms was as follows and are known as FinCo 1, 2, 3 and 4 for the remainder of this study.

FinCo 1 - UK branch of a European organisation within a European bank

FinCo 2 - UK based, small independent firm

FinCo 3 - UK based subsidiary of a firm with UK and US operations

FinCo 4 - UK subsidiary of a large UK firm having a high level of autonomy

5.4.6 Contact and resistance

The original intention was that one-to-one and group interviews would be carried out. Other observations would be made using the researcher as an observer within internal (and already planned) meetings. This would require the use of a mixture of different qualitative methods (Cresswell, 2003) to understand the interaction between IS and business functions in each organisation, for example, transcription and thematic analysis of interviews coupled with analysis of text in documents and from meeting observations. Both group and individual interviews were proposed. The researcher also explored the possibility of attendance as an observer at some

meetings between the two departments and within each part of the organisation. However, as will be discussed later, group interviews were discarded after initial efforts. All organisations resisted access to any meetings other than the pre-planned interviews. and it became clear that pressing the issue made them less keen to participate at any level.

5.5 Measuring the sources of Social Capital

Shipilov and Danis (2005) identify characteristics of senior managers that lead to the development of bridging and bonding social capital. They claimed that, for individuals, these could be found in areas such as their level of education, socio-economic standing, career paths, the status of a manager within their organisation, their age and the orientation of the group with which they are associated. These factors are *extrinsic*, that is, they exist outside a social relationship and tend to push the members of a group together. For example, an actor's age is independent of their social relationships but it may help bond them with other people in a relationship. Factors which lie within a social relationship are elements such as the perceived usefulness or trustworthiness of another actor. These factors are *intrinsic* to the social setting and are built within it. However, it is not logical to suggest that because an actor trusts or relies upon someone within a relationship who happens to be the same age, that they will therefore also trust another actor who happens to be the same age. Adler and Kwon (2002) suggest that opportunity, motivation and ability are pre-conditions which need to be satisfied in order to create social capital. A network of socially dependent relationships provides the opportunity for social capital transactions to take place and to prevent its erosion Coleman (1990). Motivation is complex deriving from a desire for certain future reciprocity and "associability" with the norms that apply to the group (Leana and Van Buren 1999; Putnam 1993). Opportunity and motivation combine with ability to complete a triangle of beneficial effects where the actors in that network believe in the reliability of other actors to deliver through the availability of resources, skills and knowledge. (Leana and Van Buren 1999).

Thus the research sought to identify extrinsic factors which might provide an insight into how social capital is built. These were identified in Tier 1 of the framework described in figure 3.3 within networks and within shared social norms, for example, enquiring whether respondents had knowledge of and regular communications with key decision makers and opinion formers in the other group. It would be necessary to enquire whether they shared extrinsic factors with members of the other group, for example, age, education or shared experiences and also intrinsic factors were to be explored, for example, the nature of the communications that took place in the network and how well they perceived the relationship operated and whether they were able to share experiences.

5.6 Data Collection

Qualitative inquiries rely on words and actions to provide insight into underlying themes and data and this requires methods that allow the researcher to capture language and meaning (Cresswell 2003). The key ways of capturing these which were planned for this study were in-depth interviews, group interviews, examination of documents and a short survey.

As discussed earlier in Chapter Four, following on from the preparatory work, it was decided to introduce a short survey to distribute to the participant organisations to add background and depth to alignment within those organisations. It was felt that this additional information was not incongruous and had the potential to add to a much richer picture of the issue of alignment.

5.6.1 Data Collection through interview

According to Mischler (1986) the interview may be characterised as a discourse which is organized by asking and answering questions. The interview therefore becomes a joint creation of both interviewee and interviewer reflecting both what they talk about and how they conduct this conversation. Open-ended interviews are regarded as authentic and faithful representations of the views of the participant but have little structure and can be extremely difficult to conduct with busy people on

very tight schedules. Therefore the main body of the interviews were conducted using the themes developed in Figure 3.5.

5.6.2 Group interviews

As described in section 5.4.5 above, senior management at Possible case 6 were initially extremely keen to be involved with positive engagement by two board members as well as the IS organisation. Initial high level conversations led to very early interviews being agreed and an agreement to using group interviews. Two such interviews took place. In the first, the "matched pair", that is, both the business and IS managers were present and the second interview was held with a small group of related business-based managers who shared some areas of business technology.

In the first interview, the IS manager was senior to the business manager within the organisational hierarchy and, on several occasions, mentioned conversations with the business leadership team which left the business manager either unable to contribute or looking annoyed and uncomfortable. Feedback from the business manager after the interview suggested that the IS manager was using the interview to position themselves above the more junior business manager.

No IS representatives were present at the second meeting. Four business people attended with one very senior manager, two mid-level managers and a junior manager. The three more senior managers knew each other well and were highly familiar with the nuances of the relationships with the IS department. The junior manager was less familiar with the intra-departmental politics. The discussion was led by the senior manager who clearly expected their views to be shared by all the other parties. When they made a statement, they would pause and invite confirmation from the other participants, for example, by saying "Didn't we?" or "I think that's about right, isn't it?". The other three participants tended to agree or made supplementary statements which confirmed the view of the senior manager. Occasionally one of the two mid-level managers would make an original contribution to the discussion which would be refuted by the senior manager. The most junior manager made little contribution, except when invited to elaborate on a point made by someone else. Feedback after the interview was that the senior

manager and one of the mid-level managers felt that they had made their points effectively. The other mid-level manager felt frustrated since they believed that the situation was more complex than expressed. The junior manager would like to have contributed more but felt cowed by the presence of more senior management and would have felt that they had greater freedom to express their views if the interview had been on a one-to-one basis.

After these two meetings, the researcher felt that they had not achieved the aim which was to explore the relationships which participants believed they had either between the departments. Rather the discussion had been about positioning between the participants who were present. Thus the researcher reflected upon the desirability and utility of group interviews and decided to discuss these concerns with the Debrief Panel who believed that there would be a high level of self-censorship and potential positioning within the hierarchy of the firm if the group interviews were used. This led the abandonment the planned group interviews and subsequent focus on one-to-one interviews solely.

5.6.3 Access to meetings

The researcher sought to arrange access to meetings within the participant organisations, for example, governance meetings discussing budget allocation and management meetings demonstrating the day-to-day interaction between the Business and IS departments.

None of the organisations provided access to any meetings other than the pre-arranged interviews citing difficulties in achieving openness in those meetings with a third party present and problems in adequately briefing all participants beforehand in order to obtain their agreement. The researcher offered to provide any information and to attend the preceding meeting briefly to make an introduction. It became clear that pressing the issue made them less keen to participate at any level and therefore plans to attend such meetings were dropped. The need to change approach is believed to be an advantage of the case study approach since the researcher can adapt other methods to meet these set-backs (Yin 2003).

5.6.4 Access to documents

Initially, it was hoped that some documents would be made available, for example, notes from workshops or meeting notes for governance meetings and management meetings concerning the day-to-day interaction between the two departments. However, this plan stumbled on the same issue as the proposed access to meetings. All owners and interested parties in those documents needed to give approval before they could be distributed. No documents were made available apart from artifacts such as organisation charts, statements of standards such as adherence to Information Technology Infrastructure Library (ITIL) or the Control Objectives for Information and Related Technology (COBIT) or the technology roadmaps. Other documentation was deemed to be too commercially sensitive to be shown to an outsider and was frequently cited as irrelevant or out of date. It therefore seemed very unlikely that any institution would permit sight of documents since they were too concerned about confidentiality and commercial sensitivity.

5.6.5 Problems of access

In wider discussions with both the contacts in the potential case study firms and the Debrief Panel, it became clear that there might be some difficulty in obtaining any internal literature. The view was expressed that, even if such literature was made available it would represent the map not the territory, that is, it would represent intentions rather than the way that relationships, functions and processes actually worked. However, there was a clear willingness to support the interviews with questionnaires and so it was decided to develop a short questionnaire that would cover the same area as intended in the interviews but would clearly lack the expansive scope of interviews.

5.7 Interview preparation

Although it might be desirable to have lengthy, free-ranging conversations with the interview participants, in reality, most firms were worried about the time commitment required and would have been unwilling to support conversations lasting more than two hours. The researcher believed that it was important to touch

on all the themes during the interviews while allowing the interviewee to take the conversation in any or no direction. Therefore, for the interviews, it was valuable to create an *aide memoire*.

5.7.1 Developing the *aides memoire*

The *aides memoire* are derived from the literature supporting the Conceptual Framework and their linkage to that literature and the five dimensions of social capital is shown in the table below:

Table 5.7 - Linking social capital literature to the *aides memoire* themes

Dimension	Attribute	Literature source
Networks	Network associations	Burt 1992 Coleman 1988 Putnam 1993 Snijders 1999 Woolcock 1998
	Formal and informal communications	Bourdieu 1986 Mintzberg 1973 Prescott and Visscher 1980 Roy 1960
	Access to decision makers	Burt 1992 Granovetter 1992 Gautam 2000 Coleman 1990 Ibarra 1992 Lin and Dumin 1986 Foley and Edwards 1999
Shared norms	Shared domain knowledge	Boland and Tenkasi 1995 Berger and Luckman 1966 Pondy and Mitroff 1979

Dimension	Attribute	Literature source
	Social norms and rules	Clark 1972 Johnson and Scholes 1997 Nisbet 1969 Woolcock 1998
	Processes	Berger and Luckman 1966 Pondy and Mitroff 1979
	Sense of community	Adler and Kwon 2002 Chow and Chan 2008 Coleman 1988 Collier 1998 Fukuyama 2001 Portes and Sensenbrenner 1993 Putnam 1995
	Fairness and sanctions	Adler and Kwon (2002)
Trust	Belief in the other party's value and integrity	Shipilov and Danis 2005
	Reliability	Coleman 1988 Collier 1998 Fukuyama 1995 Kawachi *et al.* 1999 Leana and Van Buren 1999 Lemmel 2001 Putnam 1993 Snijders 1999 Welsh and Pringle 2001
	Open engagement of the other party	Adler and Kwon 2002 Knez and Camerer 1994

Dimension	Attribute	Literature source
	Willingness to take risk or initiative	Coleman 1988 Collier 1998 Fukuyama 1995 Kawachi *et al.* 1999 Leana and Van Buren 1999 Lemmel 2001 Putnam 1993 Snijders 1999 Welsh and Pringle 2001
	Generating and receiving trust	Putnam 1993
Reciprocity-expectation	Business / IS mutual understanding of each other's value to the organisation	Morris *et al.* 2009 Misztal 1996 Knez and Camerer 1994
	Benefits or services returned in the long or short term	Bourdieu 1986 Burt 1992 Coleman 1990 Granovetter 1982 Lin 2001 Narayan and Cassidy 2001
	Volunteering outside confines of team role	Ghosh and Scott 2009 Adler and Kwon 2002 Narayan and Cassidy 2001
	General helpfulness	Szulanski 1996 Adler and Kwon 2002 Narayan and Cassidy 2001
	Convergent interests	Kramer and Goldman 1995 Narayan and Cassidy 2001
	Shared participation in business-IS planning.	Agneessens and Wittek 2012 Misztal 1996

Dimension	Attribute	Literature source
Collective efficacy	Superior performance	Qin and Wang 2008 Shaw *et al.* 2005
	Common understanding of value	Portes and Sensenbrenner 1993
	Shared governance	Cross and Prusak 2002 Moran 2005 Coleman 1990
	Group partnering for major decisions	Dess and Shaw 2001 Gittel 2000
	Group efficacy	Bourdieu 1986 Collier 1998 Snijders 1999
	Fulfilling obligations	Adler and Kwon 2002 Shipilov and Danis 2005
	Access to financial power	Houghton *et al.* 2009 Shipilov and Danis 2005

Thus it can be seen that all of these topics are deeply grounded in the literature on social capital.

Additionally, the sources of social capital as discussed by Shipilov and Danis (2005) and Burt (2000) were also included to explore how social capital might be more easily created between people of overtly different professional paths. These dimensions relate at an individual level to their level of education, socio-economic standing and background, career paths, manager's age and referent group orientation.

These were included to give a more complete view of how social capital might be derived from inherent characteristics residing with individuals rather than being created by the group. Thus being of a similar age might be a useful way of building bridges between two individuals since they might encounter similar life experiences at roughly the same time. Their shared age or generation is inherent to each of them and cannot be built or developed by the organisation. However, the sharing of common history in the organisation needs to be built and can be managed by an organisation.

5.7.2 Creating the *aide memoire*

Since the interviews were likely to be time constrained, the *aides memoire* were intended to guide the conversations as well as ensuring that the main themes explored in the Conceptual Framework chapter were all touched upon. In the event of the interviewee drying up during the conversation or needing elaboration, these *aides memoire* would be used as prompts.

The table below shows the development of a generic *aide memoire* for conversations with the business team and for the IS team. Tables D1 and D2 in Appendix D have the detailed breakdown of the *aides memoire* questions and prompts since they were different according to whether the participant was from the business or IS.

Table 5.8 Generic *Aide Memoire*

Thinking about how you get things done in the firm, through your contacts with the other team and how well you understand each other, do you	
	know all the right people who can help with immediate problems and advice on how to do things more effectively
	meet each other informally do you chat about the business: possible changes and about your shared interests/acquaintances.
	know the right decision makers and senior management team for your business area and are able to approach them to discuss initiatives or projects.
	have formal contacts with decision makers and senior management: regular meetings, explaining new products and features, consultation, new product training.
	access to management who make decisions: meet regularly, work alongside them, contributing to decisions about IT investments
	think that the other team understands the day-to-day activities of your team very well.

	think that the other team understands the business strategy and future direction of the firm.
	work together to plan new initiatives such as launching a new business line, acquiring a business, moving to a new location.
Thinking about how you get things done in the firm, through projects, planning and budgeting, do you:	
	use a common planning process for budgeting, sharing all the budget information and assumptions.
	use a common prioritisation process to decide which projects are important for the business.
	have joint decision making to agree priorities, decide on scheduling and how budget is allocated.
	have a common process for managing projects. Does it bring relevant teams together very effectively.
	work together on projects and initiatives in an effective way.
	share communications about activities and changes. Is everyone kept well informed.
Thinking about being part of the same business community, do you:	
	believe that you are part of one business community with shared goals
	put effort into understanding each other's perspective even though you are part of different functions.
	believe that business and IS are subject to the same standards, for example, office conduct, rewards, ethical behaviour.
	believe that business and IS are subject to the same operating rules, for example, time-keeping, dress codes, security.
	believe that business and IS are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity.
	believe that Senior management has the same regard for both business and IS.

Thinking about the importance of IT to the business, do you:	
	believe that IT is essential to everyday operations.
	believe that IT is essential to implementing your business strategy.
	believe that IT is essential to defining your business strategy.
	find most people in the IS team explain things in an honest way even if there is a problem and they will make an effort not to avoid difficult issues.
	believe that IT is very reliable: for example, little down time, systems are resilient, reliable fixes exist for occasional problems, back-ups and workarounds are in place.
	understand how functions such as email and operational functions contribute to the business.
	understand how IT contributes towards the safe running, risk management and compliance of the business.
	understand how IT contributes towards cost savings.
	understand how IT contributes to the firm's strategy, for example, through IT architecture and planning.
	believe that the other team always looks for opportunities to make improvements, e.g, they are prepared to find information / contacts, take the initiative to promote something useful.
	believe that the other team has a good decision making and they will take appropriate (but not foolhardy) risk.
	believe that the other team argue the case for decisions effectively
	believe that the other team takes responsibility for their failures.
	believe that the other team can be trusted to deliver on schedule and to meet expectations of functionality.
	believe that where IS is unable to deliver, they make specific efforts to help the business understand why they have failed to meet expectations.
Communicating and sharing information with the business, do you:	

	talk regularly to the other team who are relevant to your function.
	talk regularly to the other team about new technology directions.
	believe that the other team trusts you to keep them included in your plans.
	believe that where your are unable to keep the other team involved in plans, those plans are explained afterwards.
	believe that the other team has an excellent understanding of your environment and is able to contribute towards your understanding of complex issues.
Achieving value with IT, do you:	
	believe that the other team is very responsive to the need to implement changes to get minor or short term business benefits.
	believe that the other team is very responsive to the need to implement changes to get long term or major business benefits
	believe that processes in use are not overly bureaucratic and that the business understands why such processes are needed.
	believe that you work together with to agree priorities.
	believe that the other team is very proactive in implementing changes that allows them to manage the technology more effectively.
	believe that the other team communicates well about what is happening and IS staff explain technicalities in terms that you understand.
	believe that It would not be possible to achieve the firm's goals without having reliable IT.
	believe that it is necessary to partner to make effective decisions about investments in IT.
	believe that IS and the business share the goals and objectives of the firm, agreeing on mutual objectives and working together to enable the success of the firm.
Thinking about the helpfulness of the other team, do you:	

	find that the other team is very helpful and explains how to make the best use of the systems. They always look for opportunities to achieve the best solutions.
	believe that the other team volunteer to get involved in initiatives beyond their strict job descriptions, for example, planning workshops.
Thinking about how well you know the other team, do you:	
	find it easy to relate to people in the other team because you come from the same background (for example, education, locality)
	find it easy to relate to people in the other team because you are from the same generation (for example, same age, have children of similar ages)

These *aides memoire* were used by the researcher in each interview to make the most effective use of the available time. It provided a simple tool to be able to assess whether a topic had been discussed, whether it had been initiated by the interviewer or had arisen during the interviewees conversation.

5.8 Questionnaire - background

At the same time as the interview *aides memoire* were being developed, the researcher also began to develop the outline for the questionnaire. Figure 3.5 was also used by the researcher to develop a framework to support the creation of questions for the questionnaire. This was achieved by creating statements which reflect the dimensions in conceptual framework described in Chapter Three. It was also intended to maintain a tight relationship between the qualitative and quantitative data collection so that the researcher ensured that the same subjects were covered as far as possible.

5.8.1 Questionnaire preparation

Further meetings were help with the Debrief Panel to explore the questions. A series of prompts or statements was worked up for discussion with the Debrief Panel. These statements explored each attribute of each dimension in Figure 3.5 in Chapter Three.

In discussions with the members of the Debrief Panel, each were asked for their views along each dimensions.

In some cases these were very positive, for example, they stated that they had a good relationship with members of the opposite group and in other cases the response was negative, for example, stating clearly that they did not share any common attitudes. The researcher took on the role of devil's advocate to state the opposite position to ensure that each perspective was explored, that is, even if there was no opposing view, the panel member was asked to think about the opposing opinion and ask what that might mean in practical terms.

The researcher took these statements and worked them up to sample answers expressing strong agreement, agreement, neutral, disagreement and strong disagreement for each attribute for 35 questions. These questions were phrased to give suitable language for either business or IS respondents. These were re-run with the members of the Debrief Panel to confirm both sense and the necessary extremes. These are shown in Tables E1 and E2 in Appendix E. The responses are taken from people's beliefs and feelings. These are not an expression of facts. For example, in some circumstances it might be technically possible to obtain all the relevant information to solve a problem through the use of a Help Desk, but if the perception of the respondent is that this is inadequate, then that perception is the correct view for the purposes of this study. The table below shows the questionnaire pre-work which was used for both communities. A detailed breakdown is shown in Tables E3 and E4 in Appendix E.

Table 5.9 Questionnaire preparation

Perspective	Example
Using the network to achieve organisational ends	Knowing the problem solvers and key influencers
	Having formal contacts
	Having informal contacts
	Having access to decision makers

Perspective	Example
Sharing an understanding of each other's perspective	Belief that the other team understands the day-to-day business
	Belief that the other team understands your strategy
	Sharing planning process for budgeting
	Sharing planning process for prioritisation
	Sharing process for managing projects
	Belonging to the same business community
	Have the same operating rules
	Subject to the same sanctions
	Senior management treat you the same
The usefulness / necessity of IT	Belief that IT is valuable to the organisation
	Belief that IT is reliable?
Trust	Belief that the other team behaves with integrity
	Belief that the other team is prepared to take the initiative
	Belief that the other team is prepared to take risk to further the business
	Belief that the other team can be trusted
	Belief that the other team trusts you
Achieving value with IT	Understand the importance of IT to the business
	Belief that other team understands the operating environment
	Responsiveness to create short term benefits
	Responsiveness to create long term benefits
	Responsiveness to make business processes easier
	Responsiveness to improve IT processes
Communicating and	Sharing new developments

Perspective	Example
sharing information	Finding the other team generally helpful
	Volunteering by the other
	Do you share interests
	Do you share planning activities
	Does IT add to performance in the firm
	Do you share goals and objectives
	Do you believe that you need each other to achieve goals
	Do you believe that you need to partner for decisions

Each question was then composed as a statement. Thus the questions "Is IT necessary for the business to achieve its goals?" was reframed as "IT is necessary for the business to achieve its goals" which could then be answered on a 5 point Likert scale (strong agreement, agreement, neutral, disagreement and strong disagreement). Following further discussions, this was refined to a 7 point scale (strong agreement, agreement, slight agreement neutral, slight disagreement, disagreement and strong disagreement) in order to obtain greater granularity of opinion (SurveyMonkey 2013).

5.8.2 Questionnaire trialling

The statements were further trialled for suitability of language, clarity of language, ease of completion and time commitment required (SurveyMonkey 2013). The testers did not come from any of the participant firms but were sufficiently familiar with the subject area to understand the direction. The researcher tested the use of a range of positive and negative wordings to ensure that the respondents gave sufficient attention to each of the statements and avoided a broad brush approach to response, for example, that the respondent took a simple route through the questionnaire and opted for a "neither agree nor disagree" response. However, when questioned, the test group displayed some irritation with the need to move backwards and forwards along the "agree" to "disagree" scale and frequently needed to revise

answers. Respondents were reluctant to spend more than approximately 20 minutes completing the survey and therefore it was necessary to ensure that the structure of the questionnaire and the survey was not an obstacle to completion. The test respondents were also irked or confused by some of the language. This was valuable feedback for the researcher since, after many months, she was too close to the subject area to see that it might be obscure to others. It was also very useful to exclude the Debrief Panel since they had developed a privileged position (Silverman 2005). All the statements were re-worded as positive statements, that is, "IT is necessary for the business to achieve its goals" rather than "The business could achieve its goals without IT". Nonetheless, it was understood that some respondents would take the easiest route to complete the questionnaire.

To help improve the accuracy of the responses, that is, that the responses reflected the respondents' intentions, the statements were again revised to ensure greater clarity both of language and to distinguish between items that had previously been grouped into a single item, for example, "IT is necessary to achieve business goals" was further broken down to draw a distinction between achieving daily operations, executing business strategy and defining business strategy. This also improved the speed of response and avoided the respondent giving up in frustration which might have been caused by a longer questionnaire.

Two questionnaires were compiled : one each for the business and IS respondents. The questions were identical in intent but were framed with different wording to make it easier for the respondents to read. Consideration was given to producing generic wording which worked well for statements such as "I know the other team well" but the language became very unwieldy for a number of statements. Two questionnaires were devised to avoid the clumsiness of generic language. In some cases it was appropriate to use the same wording, for example, "We share a process to manage projects". It should be noted that, in each of these cases, the researcher is testing the same issue. Thus both statements "I know the IS team well" and "I know the business team well" are testing how well they know each other, that is, the level of sociability in the organisation.

Where statements tested the same thing, as provided in the example above, this is a *mutual perspective*, that is, to what extent they share the same view on a single topic. However, they may be expressing their view on some aspect of the other party, for example, "The other team can be trusted to deliver on schedule". This is described as a *non-mutual perspective*.

This approach generated 73 statements which were clustered into 8 logical segments to be simpler for respondents. It should be noted that this clustering helps make sense of the replies to the respondents and does not represent clustering according to the Conceptual Framework. The clustering against the conceptual framework is shown in Appendix F.

Table 5.10 Questionnaire structure

Questionnaire segment	Number of statements
How you get things done in the firm, through contacts with the other team and how well you understand each other	12
How you get things done in the firm, through projects, planning and budgeting	9
The importance of IT to your business	21
Thinking about being part of the same business community	6
Communicating and sharing information	6
Achieving value with IT	9
Thinking about the helpfulness of the other team	3
Thinking about how well you know the other team	7

Each section also included a free text element allowing the respondents to express their views on that area.

Linking back to table 5.7 which showed the connections of the literature on social capital to the construction of the the questionnaires via the dimensions and attributes, table 5.11 below demonstrates the linkage of the questionnaire statements to the dimensions and attributes of the conceptual framework:

5.9 Data collection methods - interviews

Where possible, the researcher had planned to interview "matched pairs", that is, one IS person and one business person who are concerned with the same business area. It was planned to hold interviews lasting from one to two hours with each of the respondents. As described above, joint interviews were not successful and so each member of the pair was interviewed separately in order to give each the opportunity to be very frank and not tailor their replies for the other party. It was stressed to the interview participants that they were not being asked to be indiscreet, simply to be honest. For example, the interview might discuss the usefulness of formal meetings with the IS decision makers, or whether the real decisions are made elsewhere, whether decisions are handed down and so on. It was hoped that the interviewee would be comfortable in responding in an uninhibited way.

In order for the interviews to be effective it was important to make use of probes to elaborate and elucidate the meaning and sense of the interview. Patton (1990) identifies three types of probes. Detail-oriented probes attempt to mirror natural conversations where questions are asked to get more detail. These questions ask about the "how", 'where", "when", "what" and "who" of a situation. Elaboration probes invite the interviewee to talk more about the subject not just with with greater detail but also examples. Clarification probes are used when the interviewer is uncertain what the interviewee is talking about. Rather than looking for greater detail the researcher is seeking a further explanation of a topic which has been discussed earlier. Since time was limited and most interviews were restricted to one hour, it was valuable to make use of these types of probe to gain examples of how alignment worked in their organisation. These were also useful when the conversation appeared to stall or to bring more expansive interviewees back to the main subject without stifling their remarks.

Choosing a style of involvement (Walsham 2006) was somewhat dictated by the selection of multiple cases. If the researcher were to be engaged in a single case, then it would be necessary to gauge the level of embeddedness appropriate to achieving

good participation while bearing in mind concerns about objectivity. In this case, the researcher was not employed by any of the organisations and was not attempting to act as a consultant during this process. Therefore, the researcher maintained an "arm's length" relationship with the organisations and was be an outside or external researcher (Walsham 1995).

Thirty-five interviews were carried out in the four participant firms. Interviews were between one and two hours long depending on the time available with the interviewee.

Table 5.11 Number of interviews by business and IS split

Participant firm	Business (number of interviews)	IS (number of interviews)
FinCo 1	6	4
FinCo 2	4	4
FinCo 3	5	3
FinCo 4	4	5

Table 5.12 below shows the role and seniority of each respondent. For each firm, the business interviewees were either board members (indicated by an "*") or reported directly to a board member. In FinCo 1 and FinCo 3, the CIO / Head of IT did not hold a board level position but there exists a specially convened sub-board with IT/IS oversight. Senior IS managers who sit on that board are shown with an "*". In FinCo 2 and FinCo 4, the CIO/ Head of IT sits on the operating board / executive committee of the firm. In each firm, all the IS participants sat on the IS board / executive committee.

Table 5.12 Interviewees by function and seniority by business and IS split

Participant firm	Business interviewee	IS interviewee
FinCo 1	Head of Asset and Liability Management*	Group functions liaison (joint head of IT)*
	Senior Fund Manager	Head of IT UK
	Head of Quantitative Trading*	Head of IT Quantitative Trading
	Head of Compliance*	Head of IT Corporate Functions
	Head of External Marketing*	Head of IT Equity Investments
	Head of Investments Fixed Income*	no direct match
FinCo 2	CEO*	CIO*
	COO	IT manager (joint deputy CIO)
	Head of Fund Development	IT manager (joint deputy CIO)
	Head of Fund Marketing	
FinCo 3	Head of Operations Change*	Head of IT change programme*
	Head of Dealing	Head of IT UK
	Head of Risk	Head of IT BAU functions
	Senior Fund Manager	Head of IT infrastructure*
	Head of Fixed Income Investments*	no direct match
FinCo 4	COO*	CIO*
	Head of Business change	Head of IT Investments
	Head of Compliance*	Head of IT data
	Senior Fund Manager	Head of IT infrastructure

* = holds a position on the operating board of the firm.

In almost all cases, interviews were held face-to-face and the researcher travelled to the location to meet the interviewee. In one instance, the interview needed to be cut short and it was completed using Skype. The interviewee was familiar with telepresence and conferencing. In two cases, the interviews were conducted by telephone. Interview data was, wherever possible recorded with the consent of the interviewee. They were assured that interviews were recorded for ease of transcription only and most required confirmation that they would be used for no other purpose. It was necessary to give each participant assurance that the contents of the interview would be secure.

For the face-to-face interviews, the researcher offered the interviewee a choice of location : either in their own office or externally. Interviewees were usually happy for the interview to take place in their own private offices where they existed. Dealing room staff tend not to have their own office and so chose to either use a meeting room or meet externally, for example, in a coffee shop. IS staff tended to book meeting rooms so that they could time-bound the meeting, usually to one hour.

Each interview discussed the relationship which the interviewee held with the other team and the interviewee's perception of that relationship. The interview was not focused on the content of that relationship, for example, the detail of the project management process, but rather how the interviewee saw that process in the context of their relationship. For example, a business respondent might say "There is a process [to manage change] but I think that it's quite valuable to have a process so that decisions can be talked through" and another might say "We have a dedicated person who we meet with to start off projects" and a third might say "There seem to be lots of forms and each project has lots of meetings. Some of that is really useful so we can really decide what we want but some of it just seems to be meetings for meetings sake. I don't really understand their forms and all that." From these extracts we can see that the first respondent sees the project process as valuable since it allows them to reflect on their needs, the second respondent has a direct relationship with someone who can guide the project through the process and the third respondent finds the process helpful in defining needs but top heavy in terms of bureaucracy.

These are all perceptions leading to how they regard their relationship with their IS organisation.

Once the recordings were transferred, they were transcribed. Automated tools using voice recognition proved not to be successful since they tended to fail to distinguish interviewer and interviewee voices from background noise. Eventually, the researcher transcribed each interview manually. Approximately one hour of interviewing took five hours of transcription.

The interviews included the value of IT to the firm, how helpful each team regards the other, to what extent they saw themselves as part of a single business community, how responsive and capable the other team was. Each organisation had different ways of describing service from the the parent organisation and, for clarity, this chapter will refer to the provider of this type service as "Group" even if that is not the terminology used in that organisation.

5.10 Data collection methods - survey

The survey questions were developed outside of SurveyMonkey. Two of the participant firms asked for a preview of the survey questions before they were uploaded. They were reviewed by the legal and compliance departments. This did not present a problem since neither firm requested any revision. However, this could have led to a problem if they had asked for conflicting revisions.

It was important to ensure that the survey was not so burdensome as to annoy and frustrate the respondent to the extent that they gave up without completing the survey. While preparing the survey, the researcher took the opportunity to answer as many surveys as possible to improve her appreciation of the relative ease or difficulty of responding to surveys. The survey took between 15 and 20 minutes to answer. No participant was required to identify themselves.

The surveys were accessed using an internet link to enable people to simply click on the link and go straight to the survey. It was not possible to complete the survey more than once from any one computer. However, it was possible for a respondent to complete the survey on different computers. Since the questionnaires were anonymous, it was not possible to determine whether this occurred.

The surveys were distributed by the participant organisations. Each respondent was addressed individually to try to obtain the maximum number of respondents. This ensured that the possible respondents knew that the surveys were being generated by a source which was well known to the organisation and that appropriate due diligence had been undertaken. It was hoped that this would allay the fears of individual respondents and that they would, therefore, be more likely to participate.

The researcher was able to monitor the uptake of the surveys and asked the organisations to send reminders to obtain as many replies as possible. All organisations agreed to send one reminder but one declined to send any subsequent reminders since the exercise had generated questions about the due diligence and security which they were reluctant to revisit since these had already been addressed by the legal, compliance and IT security assessments.

5.11 Data security

Where interviews were recorded, the recording was made on a portable device which was locked and password secured. As soon as practicable after the interview, the interview file was transferred to a locked and secure computer and deleted from the portable device. Interviews were stored in encrypted folders.

Transcriptions and notes of meetings which were not recorded were also stored in encrypted folders on a locked and secure computer. Once the survey was complete and access closed, the data was exported for upload into SPSS. The export files were also stored securely.

Data backup was made in a secure Cloud based facility using Secure Sockets Layer (SSL) and AES-256 bit encryption. Access to this data was via dual-factor

authentication. Additionally a further copy of the data, for back up purposes only was held on an external hard drive which was stored in a fire-proof safe.

The survey was hosted by the independent internet survey company SurveyMonkey (http://www.surveymonkey.com). Their data security is validated by Norton (VeriSign), TRUSTe, McAfee and the Better Business Bureau. All four participant firms expressed concerns about how data would be stored confidentially but each had slightly different concerns. The participant firm which had the greatest security concerns undertook penetration testing of SurveyMonkey and declared themselves satisfied with the outcome. This and the assurances provided by SurveyMonkey themselves satisfied the concerns of all participant firms.

5.12 Analysis methods - qualitative data

The qualitative data was analysed using a Cloud-based analysis tool, Dedoose, and then scanned for emerging themes. Dedoose is a qualitative data analysis software tool enabling storage, coding, annotation, retrieval and analysis of collections of documents, images and sound files. The tool allowed identification of themes into clusters which could then be grouped as a logical tree. Interview transcript files were loaded into the tool and then analysed to discover themes.

5.12.1 Initial data coding

Each interview was transcribed so that it could be referenced *post hoc*. After transcription, interview transcripts were analysed for recurring themes. The free text portions of the questionnaires were also uploaded. Since the researcher was already familiar with the themes that had emerged in the interviews, the work started with a group of initial codes such as "trust" and as each interview was read within the tool, it was tagged to these codes.

Inasmuch as it was possible, the researcher tried to create the initial coding as if it were a blank canvas, that is to allow the coding to emerge from the data. Although it

would have been desirable to create the initial coding by allowing the coding to emerge from the data, it was not completely possible to ignore previous work which had developed the conceptual framework, the questionnaire and the *aide memoire* used to support the interviews, so some coding was almost impossible to avoid. As the work progressed, the number of codes grew to 109 codes which were reduced to 96 via consolidation and removal of duplicates.

There followed two parallel and iterative activities : the creation of codes from the recurring themes which could be drawn together into a framework and the scanning and creation of 1500 extracts from the interviews. Each extract was examined and associated with one or more codes. In some cases, further codes emerged and they could be created dynamically. The tool was flexible so that additional codes could be identified. Where additional codes were uncovered, they were added to the code tree and all previously analysed interviews were re-scanned to pick up any overlooked instances of these codes. This iterative process was highly time consuming but allowed the codes to emerge from the data rather than to be imposed from the conceptual framework. Having said that, the *aide memoire* was used to support the interviews and therefore there was an implicit bias towards the structure and content of the conceptual framework. discussed in the previous chapter was used to built into nodes for ease of analysis.

5.12.2 Code weighting

Each code at the lowest level in the hierarchy was given a permitted weight from -3 to +3 with the default weight being zero. This allowed the coding of extracts to be given a weight according to the way that the interviewer discussed the subject. If when talking about the other team being treated in the same way regarding fairness of treatment, the interviewee said "We adhere to exactly the same standards. It's very important", then this would be given a +3 weight whereas if they said "I think that we have to behave the same way, yeah, more or less", then this might be scored as +2. These are clearly subjective scorings based on the perceived intensity of the the expression of the interviewee and are highly interpretative.

5.12.3 Code hierarchy

The absence of a hierarchy made the allocation of codes a cumbersome process which was also prone to error and needed many iterations. Gradually a hierarchy of codes began to emerge and this allowed building the codes into an intermediate stage nodes. Thus initial mentions of examples of trust grew into clusters of statements such as "they can be trusted to deliver on time" and "they can be trusted to deliver against functionality". These were then clustered as exemplifiers of trust and a two tier model was built up. This introduced an intermediate layer, for example, at the lowest level, the following two themes were observed : *the other party can be trusted to deliver on time* and *the other party can be trusted to deliver against functionality.*

This was then developed into an intermediate hierarchy with *reliability* deriving from : *the other party can be trusted to deliver on time* and *the other party can be trusted to deliver against functionality. Reliability* then became a node in the hierarchy of nodes making up the *Trust* dimension.

5.12.4 Initial coding framework

The initial coding framework was translated to an intermediate coding framework which allowed the clusters which had been observed in the initial coding to be mapped to the attributes in the conceptual framework:

Table 5.13 - Initial coding framework mapped to social capital attributes

Initial coding cluster	Conceptual framework attribute
Working together	Convergent interests
Helpfulness	Helpfulness
Responsiveness to change	Long or short term benefits
Mutual need	Mutual dependency
Access to decision makers and influencers	Access to decision makers
Creating the right formal and informal contact mix	Formal and informal contact mix

Initial coding cluster	Conceptual framework attribute
How alike they are to the other team	Homophily
Knowing people	Network associations
Fairness and equal treatment	Fairness and equal treatment
Usefulness of process	Process
Shared community	Shared community
Shared identity	Shared identity
Feeling valued	Feeling valued
Reliability	Reliability
Attitude to risk	Willingness to take risk
Accessing financial power	Financial power
Making decisions together	Partnering for decision making
Getting a good performance for the firm	Superior performance

Once this was in place, coding was revisited to ensure that each lower level node was consistent with the intermediate nodes and whether these nodes needed to be renamed or consolidated. After revisiting the codes, there were 9973 "tags" or instances where codes were attached to excerpts. The initial coding framework also included additional remarks which were subsequently incorporated into the parent code. This, in turn, was rolled up into the final coding framework which mapped the coding clusters to the conceptual framework to support deeper analysis:

Table 5.14 Final coding framework

Social capital dimension	Attribute	Initial coding cluster
Mutual obligations	Convergent interests	Working together
	Helpfulness	Helpfulness
	Long or short term benefits	Responsiveness to change
	Mutual dependency	Mutual need
Network relationships	Access to decision makers	Access to decision makers and influencers

	Formal and informal contact mix	Creating the right formal and informal contact mix
	Homophily	How alike they are to the other team
	Network associations	Knowing people
Shared Norms	Fairness and equal treatment	Fairness and equal treatment
	Process	Usefulness of process
	Shared community	Shared community
	Shared identity	Shared identity
Trust	Feeling valued	Feeling valued
	Reliability	Reliability
	Willingness to take risk	Attitude to risk
Reciprocity expectation	Convergent interests	Working together
	Helpfulness	Helpfulness
	Long or short term benefits	Responsiveness to change
	Mutual dependency	Mutual need
Collective efficacy	Financial power	Accessing financial power
	Partnering for decision making	Making decisions together
	Superior performance	Getting a good performance for the firm

5.13 Analysis methods - quantitative data

Questionnaires were distributed to 192 people in the four case study firms (108 business and 84 IS). Responses were received from 46 business and 48 IS people.

5.13.1 Use of SPSS

The questionnaire data was downloaded from SurveyMonkey and uploaded into the IBM statistical analysis package SPSS which was used to analyse this data. Each dimension is made up of a number of attributes and, within the questionnaire, these attributes are identified by one of more statements. It was necessary to calculate

mean value for each dimension in order to compare and correlate the dimensions. Therefore, in addition to the raw data, additional means were created for each dimension. The researcher explored the possibility of creating a hierarchy of means, that is, a mean of the identifiers in an attribute and then a mean of attributes giving the overall picture for the dimension. While it allowed equal weight to be given to each attribute within a dimension it also had the effect of "flattening" the data and losing some of the richness and, therefore, the researcher used "raw" means, that is, all the questions contributing to a dimension were used to create a mean for that dimension without an intermediate stage.

SPSS was used to explore the descriptive statistics, correlations and regression to understand the data and the relationships in that data. This is discussed in further detail in Chapter Seven. It is also important to reflect that this quantitative data is supportive to the qualitative data which forms the main thrust of this research and he use of statistical analysis was expected to further illuminate the qualitative findings in the light of the conceptual framework.

The data was examined to test for normality. The Shapiro-Wilk Test was chosen to test for normality because both samples comprised less than 50 respondents (48 for IS respondents and 46 for Business) (Lund and Lund 2013). If the test showed a significance level of greater than 0.05 the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution (Lund and Lund 2013).

For each statement, the data was found to be non-normal and therefore it was necessary to use statistical tests designed for non-parametric data to assess correlations. The data was similarly skewed between the two samples, in many cases both having a distinct skew towards a positive view of the subject, expressed as some level of agreement. There was little sitting on the fence in either sample, that is, there were few "neither agree nor disagree" responses to any of the statements (10.9% of Business respondents and 9.1% of IS respondents).

5.13.2 Analysis of the data against the Conceptual Framework

The conceptual framework in Chapter Three broke social capital into five dimensions which were further split into attributes. This framework was used to build the questionnaire where the statements elucidated each attribute which combined to give insights into the dimensions. From the framework, it was expected that there would be a positive correlation between each dimension but that this would not be uniform. It was anticipated that these correlations would be stronger between the tiers and they would build up vertically, for example, that the relationship between trust and collective efficacy (Tier 2 and 3 dimensions) would be stronger than that between network relationships and collective efficacy (Tier 1 and 3 dimensions). The purpose of this part of the analysis was to better understand and explore associations in the framework. This analysis was undertaken separately for business and IS respondents.

Each statement asked a question of the following type:

Table 5.15 Question structure

Question intent	Question structure
what do you think of the other team	"The other team understands / trusts / will take ..."
what do you think of the organisation	"We share / work together / are part of ..."
what do you think about your part of the organisation	" I know / understand / can approach"
what characteristics do you share	"I am the same age / live in the same locality ..."

In a well-aligned organisation, the researcher might expect that the answers to questions about their perception of the other team and the organisation would be very similar. For example, *" We share assumptions about sensitive information"* would be expected to elicit highly positive responses from each side. Similarly, *"The other team has a good understanding the day-to-day activities of my function"* would also

be expected to reveal strong positive results. When looking inward to their own function or knowledge, they might see some differences; *"I can approach the decision makers in the other team to discuss initiatives"* might show some differences due to asymmetrical reporting lines. When considering characteristics such as sharing educational background, then extrinsic factors may offer a suggestion to why people work well together and so there is no reason to expect a high score from either party, except for the theoretical constructs in the literature.

The researcher looked for positive associations between the statements that made up the the attributes within each dimension by examining correlations within each sample to assess the framework. Since the data was non normal, it was not appropriate to use the Pearson product-moment correlation coefficient (Lund and Lund 2013). Instead the Spearman rank-order correlation coefficient (Spearman's correlation) was used since it is a non-parametric measure of the strength and direction of association that exists between two variables (Lund and Lund 2013). Neither the result of Pearson's correlation nor Spearman's suggest that one variable is dependent on another but the test may be used to assess their linkage which may then need further explanation to uncover which variable is dependent and which is independent.

In order to use Spearman's correlation, the following conditions needed to be met (Lund and Lund 2013) : each of the two variables was measured on an ordinal, interval or ratio scale and a monotonic relationship exists between the two variables where either the variables increase in value together, or as one variable value increases, the other variable value decreases. The use of a Likert scale for all statements meets the first criterion and the data satisfies the second condition.

Next it was necessary to discover whether the perceptions were the same between the two samples. The data was grouped according to either business or IS respondents by creating the independent variable as an indicator (1 being Business and 2 being IS). There is independence of observations, that is, there is no relationship between the groups, for example, a respondent cannot appear in both groups. If the data was normally distributed it would be possible to the Independent Samples *t*-test (Lund

and Lund 2013). However, since the data is non-parametric, it was not possible to use the Independent Samples *t*-test and therefore the Mann-Whitney U test was used (Lund and Lund 2013). In order to use the Mann-Whitney U test, it was necessary to ensure that the data satisfied a number of conditions. The dependent variable is measured at the ordinal or continuous level and the use of a Likert scale for all statements meets this criterion. The independent variable is made up of two categorical, independent groups (business and IS). The full range of options available in the Mann-Whitney U test may only be used when the variables are not normally distributed but nonetheless the distributions of the two samples have the same shape (Lund and Lund 2013). The frequency analysis of the two groups was used to determined whether this is the case before the data was combined. This revealed that in 67 out of 73 statements, the distributions did not have the same shape and, therefore, according to the Mann-Whitney U test, it is possible to compare only mean ranks and not medians.

Exploring Tier 1, it is reasonable to expect that networks provide the "input" component to social capital. It is evident that you cannot place trust in, consciously share norms with, have mutual expectations of and work together to create value with people you do not know at any level. Where such network relations exist, then it is possible to build a shared set of norms, values and processes. Thus the direction of causality examined in Tier 1 was from networks to shared norms.

Examining the connection between Tier 1 and Tier 2 in the framework, again it would appear sensible that the direction of causality between networks and reciprocity-expectation is that the existence of a network of people who are able to guide and make decisions both functionally and financially would lead to the expectation of the satisfaction of mutual obligations and, where there are low or poor network links, there would be no expectation of reciprocity. In this case, the direction of causality anticipated was from the existence of networks to reciprocity-expectation. It was anticipated that this would be a strong connection.

The same is expected in the relationship between networks and trust. Again having a network which opens doors to decision makers creates an obvious linkage with

trusting those people. Where no network exists, there is no foundation upon which to build trust. It should be borne in mind that simply knowing these people does not *per se* create trust, it simply creates the conditions where trust may be generated and thus a strong connection was expected.

However, the same may not be true for the linkage between shared norms and reciprocity expectation. It is conceivable that, in a network, the expectation of the delivery of mutual obligations may lead to the adoption of norms, values and processes which are perceived as beneficial. The reverse may also be true : where there are low expectations of reciprocity, then there may be little to attract the parties to taking on the habits of the other team. Nonetheless, the framework suggests that a strong linkage should be expected.

It is difficult to anticipate whether shared norms generate trust. It may seem obvious to believe that shared values, processes and norms may be driven by trust but it could be equally true that those elements may be derived from the existence of trust. The absence of trust may be a good reason for the teams not to share social norms but it may also be true that the absence of shared social norms prevents the development of trust. Therefore in this case, the framework suggests a strongly positive linkage, but there is no suggestion of the source of that linkage.

Within Tier 2, there is a single relationship : that which exists between trust and reciprocity-expectation. Both of these are complex and abstract concepts and exist wholly as perceptions. Thus it is not possible to suggest the direction of causality between trust and reciprocity-expectation. The existence of trust may set the scene for a positive expectation of mutual beneficial delivery. Conversely, an absence of trust would seem, intuitively, to lead to a low level of reciprocity-expectation. Yet, it is necessary to enquire whether the relationship may not be driven by reciprocity-expectation, that is, a good level of trust is engendered by a positive experience of an expectation of mutual beneficial delivery and that a poor level of trust would be the natural outcome of low expectations of reciprocity.

Moving on to the connection between Tier 1 and Tier 3, it was expected that there would be a positive correlation between both elements of Tier 1 and collective

efficacy in Tier 3. Notwithstanding, if there is correspondence with the framework, it is expected that there would be a positive correlation between networks and collective efficacy and the direction of that link would be from networks to collective efficacy. A strong network would suggest that there is an expectation of a good level of collective efficacy. If shared norms are solely part of the input tier, then it would be expected that there would be a similar positive correlation between the presence of social norms and collective efficacy as there was for networks and collective efficacy. As discussed above, shared norms are less clear cut than networks and, indeed, achievement at the collective level may promote the sharing of social norms. Thus this linkage is proposed to be stronger than that between networks and collective efficacy but not necessarily at the strongest level of correlation.

Finally, the connection between Tier 2 and Tier 3 yields two relationships : trust and collective efficacy and reciprocity-expectation and collective efficacy. A good level of trust is predicted to yield a high level of collective efficacy. An organisation with low levels of trust is expected to struggle to achieve. The opposite may also be true : where the organisation is indeed struggling, there may be an erosion of trust. Again, the direction of travel is not necessarily simple. However, the framework proposes a high degree of correlation.

The same is true of reciprocity-expectation and collective efficacy. The framework suggests that where there is a high level of mutual expectation, there will be a high level of collective efficacy. Conversely, low mutual expectations are expected to lead to low levels of collective efficacy. Where the organisation is failing to achieve at the collective level, reciprocity-expectation may also be low. Thus a high level of correlation is anticipated.

The figure below shows the linkages which were suggested by the conceptual framework and the anticipated strength of those linkages.

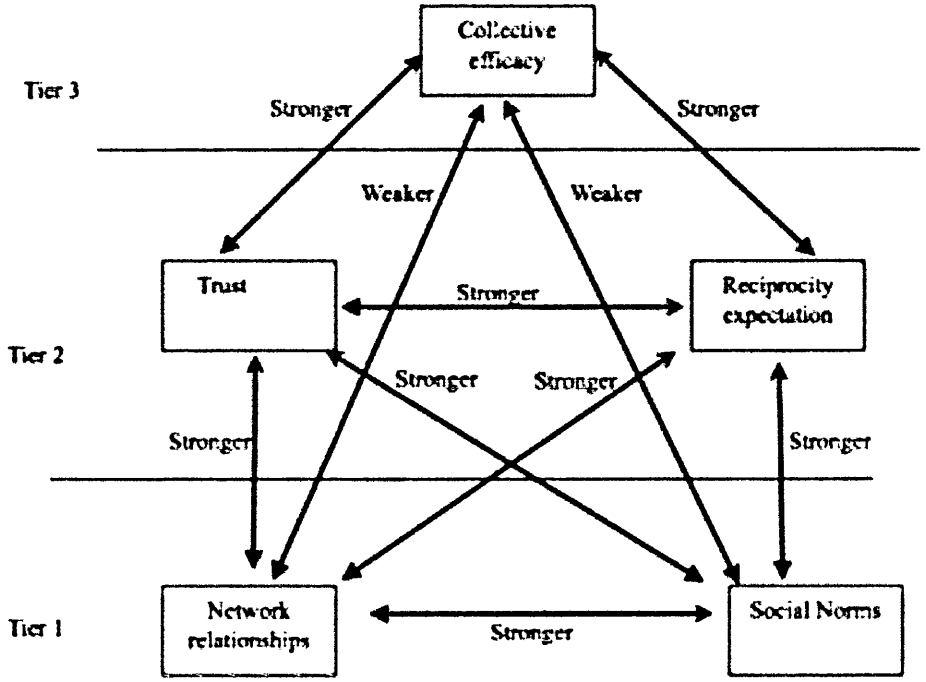

Figure 5.2 Linkages suggested by the conceptual framework

5.14 Summary

This chapter has explored the methods to be used and has grounded those methods in the context of the methodology and conceptual framework.

This chapter began with an introduction in section 5.1 and an outline of the method used in section 5.2. The chapter examined the use of the Debrief Panel in section 5.3, how it was established and the various uses to which it was put throughout this study including initial work to support validation of the conceptual framework and development of the structure for the survey. The chapter continued with section 5.4 concerned with the selection of the cases, confidentiality and ethical considerations, anticipated interview commitment and how contact was maintained with the participant firms. The measurement of social capital was explored in section 5.5 and section 5.6 went on to detail the approaches to data collection through interviews and also looked at the impact of resistance and problems with access to meetings and documents. The chapter proceeded with the preparation for interviews and the development of *aides memoire* to support the interview process in section 5.7 and section 5.8. discussed the background to the questionnaire and its origins in the

conceptual framework and *aides memoire*. Data collection methods were reviewed both for the interviews were discussed in section 5.9 and in section 5.10 for the quantitative data. Section 5.11 explained how security considerations were addressed for both interview and survey data. Analysis methods for the qualitative data are discussed in section 5.12 and for for the quantitative data in section 5.13.

The methods discussed in this chapter introduce the findings to be found in Chapter Six for the qualitative data and Chapter Seven for the quantitative data.

Chapter Six - Qualitative Findings

6.1 Introduction

The preceding chapter looked at the way that the cases were selected, how the data collection was planned and the method to plan and manage the interviews and the way that the data was collected and analysed. This chapter provides a brief description of the participant firms in section 6.2 and then goes on to discuss the process of code analysis in section 6.3. Section 6.4 examines the code frequency and intensity expressed by the code weighting, the dissimilarities in frequency of response between the two communities and the co-occurrence of themes in the interviews . Section 6.5 explores a comparison of responses and intensity of remarks under the dimensions of network relationships, shared norms, trust, reciprocity expectation and collective efficacy. The chapter finishes with a brief summary in section 6.6.

6.2 The participant firms

Four investment management firms were studied. A fifth organisation had originally agreed to take part but dropped out since they underwent board level changes shortly after the first block of interviews and felt that they could no longer continue to participate. The characteristics of the participant firms are described below. It is only possible to give an outline of the firm characteristics in order to preserve confidentiality and anonymity.

In these findings, the comparison is not made on a case-by-case basis but rather, the IS and business findings are clustered into two nominal groups to allow comparison between the two communities.

6.2.1 FinCo1

This is a separate business entity within a very large European-based financial services institution which employs over 100,000 people worldwide. The parent institution has been created as the result of a number of mergers and acquisitions during the latter part of the twentieth century and is domiciled in a large EU country where it operates all headquarters functions. In recent years it has taken over significant parts of another very large European institution. The investment management business unit acquired significant assets as part of this acquisition and has also absorbed other firms and parts of firms as the result of divestitures. This has created a high level of geographic complexity which is proving difficult to control through a central and hierarchical command structure.

IS is managed at a business unit level and a Group level. Only business specific IS functions are run or managed within the entity. Generic functions such as core infrastructure and email are managed at the group level and, of those, some are outsourced to third party providers which are managed by the parent company. The business unit IS team has no direct management contact with those third party providers and interaction with the third parties is intermediated by the parent firm. FinCo 1 IS is not permitted to buy or provide such services independently.

A small number of business specific services are directly outsourced by FinCo 1 to third party providers or bought as managed services and these relationships are governed directly by FinCo 1. FinCo 1 IS undertakes a small amount of in-house IT development but it is mainly engaged in the integration of third-party software

FinCo 1 IS management has two reporting lines : to FinCo 1 management and Group IS management. Group IS management has oversight of areas of technical expertise, for example network infrastructure. Group IS provides a potential career path for FinCo 1 IS professionals since there is little or no scope for IS career advancement within FinCo 1.

FinCo 1 has an IS management team which reports to the CIO who sits on executive board of FinCo 1. FinCo 1 IS is represented on the parent operating board by the Group CIO. A small number of FinCo 1 IS managers originated in Group IS and expect to return there for career advancement. FinCo 1 IS managers frequently struggle with the tension created by this command structure.

Although it is a small part of its parent, it was the largest firm examined in this study.

6.2.2 FinCo 2

FinCo 2 is a very small and wholly independent investment manager, employing fewer than 200 staff. FinCo 2 was created out of a management buy-out from a larger firm. Some of the management of FinCo 2 originated in the company before the buy-out including the CIO. There is a small managing board and the CIO is a member of that board with full voting rights. However, for HR and operational purposes, the CIO reports to another member of the board rather than the CEO. This is explained by the fact that, although the CEO of FinCo 2 is a successful and charismatic leader, he has little understanding of the role that technology plays in the firm but appreciates that it is essential to its operational success and is thus happy to hand over operational management decisions to someone else. Interestingly, the CIO is not given his own role in this respect since everyone recognises the lack of knowledge of the CEO.

Starting afresh with no inherited systems' landscape, the CIO was able to make significant decisions about the deployment of technology and selection of an in-house IS team. Recruitment into the newly formed IS team was made on the basis of both technical and commercial expertise and the CIO specifically stated the need for mature candidates who had experienced development or infrastructure roles and the management of external services.

The internal IS team is small and holds many different outsourced relationships. IS management decided to avoid outsourcing to a single or small number of suppliers so that they could obtain what they consider to be the right service according to

functionality and cost. These relationships need to be managed both on a point-to-point basis and across the services.

Very little technology is managed directly within the firm since they believe that they are too small to be able to manage it effectively, retain skilled staff and provide adequate support and future development. Some services are run on FinCo 2 infrastructure by an outsourced provider and other services are bought wholly as managed services. This complexity is not visible to the business team who perceive it all as FinCo 2 systems and IT. They do not differentiate between internal IS teams and the external service providers who are located on-site. The internal IS team does not encourage the business teams to draw a distinction but ensures that all relevant service discussions rather than technical discussions are mediated through the IS top team.

The IS team perceives its role as that of brokerage between the firm and its suppliers and between the suppliers themselves.

6.2.3 FinCo 3

This firm is a business unit within a wholly owned subsidiary of a global firm which has a portfolio of interests within financial services and other sectors and employs over 20,000 people. The parent firm continues to reshape its structure and struggles to find a governance model that offers sufficient independence to its subsidiaries so that they can deploy resources appropriately for their sector.

While FinCo 3 is not as large as FinCo1 it is significantly larger than either FinCo 2 or FinCo4. The direct parent of FinCo 3 offers but does not mandate some generic services such as email and FinCo 3 has chosen to use some of the parent company's facilities such as hosting and ERP. For its investment management specific needs, IS is managed independently with the global business teams being serviced by IS teams in 2 locations in the UK and the US. The firm has a small number of services directly outsourced to third party providers and a few managed services.

FinCo 3 IS management reports indirectly to the Executive Board of FinCo 3 with the CIO reporting to the COO. The CIO is invited to make quarterly presentations to

the Executive Board but has no voting authority. A subset of this board exists to make IT investment decisions. The governance structure of FinCo 3 is further complicated since the two primary locations compete with each other for pre-eminence at many levels within the business.

IS has both a local structure for the management of business as usual services and a global structure for the management of new services and projects. FinCo 3 IS has a management structure for business as usual services where there are a location specific IS managers who are part of the IS management team and have responsibility for local IT/ IS decisions and business application support. In contrast, the IS projects team is lead by a single IS manager who has responsibility for staff who are domiciled in either location and who may be working on global projects.

There is perceived to be a tacit or "dotted" reporting line between FinCo 3 IS staff and Group level. However, this is seen only in terms such as purchasing and training.

There is frequently a tension between locations and business as usual versus project ambitions. FinCo management may be located in either location and the proximity of the sponsoring senior management can lead to shifts in priorities. Both business and IS in FinCo 3 express frustration and dissatisfaction with the failure of the parent to provide clarity of the organisational structures, roles and responsibilities.

The IS organisation regards itself as the vital connection between the business and providers from three perspectives : liaison with the parent, oversight of the outsourced relationships and managing the internal teams.

6.2.4 FinCo 4

The parent of FinCo 4 is a large financial services institution with many different financial services interests. The parent firm was created as a group from a series of mergers and acquisitions, Post the global financial crash, the parent company set up FinCo 4 as a new firm with its own regulatory identity.

Initially, this small firm ran in a start up mode while it determined its business model and how it would operate, for example, whether it would have retail customers or focus on providing professional fund servicing. Having established its model, achieved regulatory and board level sign-off, it created a new business model built on fund acquisition. In the future, there will also be fund divestment and so the model needed to be flexible and scalable.

As a condition of the start-up, FinCo 4 was required to buy non-function specific IT such as email provision from the parent company. The parent firm was anxious to provide services wherever it already owned or ran the capability, for example, document processing services. FinCo 4 IS managers believed that this was acceptable and would not negatively impact their operations. In the light of the business model, no function specific applications are either run in-house or by an outsourcer. All core business processes, such as portfolio management, are bought as managed services from sector specific providers. Function specific, non core services are either bought as a managed service, outsourced and under their direct control or run in-house but hosted by the parent company.

FinCo 4 has a very small Executive Board and the CIO is a member of that board. Only the CEO is represented in the parent company management. There are no functional or matrix reporting lines to the parent. The CIO reports to the COO for HR and operational decisions but the full Executive Board makes decisions for IT investments.

The CIO has a lengthy investment management career including business specific professional qualifications. Recruitment to the FinCo 4 IS team is done on the basis of fit and investment management business experience as much as their IT technical knowledge. The CIO argues that such knowledge can be bought as training whereas fit and investment management business experience is more valuable.

The IS organisation is highly embedded within FinCo 4 and regards itself as a purchaser of services from all other sources both external and from the parent level. Despite its size, FinCo 4 is a highly profitable contributor to the parent firm and uses that to argue its case effectively with the parent. In some ways its business model is

different to that of the parent and therefore it perceives that its needs are different. This leads to difficulty in its relationship with the parent IS organisation. During the period of the fieldwork, FinCo 4 IS was attempting to extricate itself further from Group level control since it perceived that control as a blocker to responsiveness and business agility.

The CIO argues that the IS function is a core part of the business but that the role of the IS function is to deliver operational service and to implement strategic decisions but is not a driver of strategy.

Table 6.1 below summarises the characteristics of the firms in terms of their structure, newness, ability to make independent decisions and alignment.

Table 6.1 - Characteristics of firms

Firm	Size	Independent	Recently established	Autonomy	Level of alignment
1	L	N	N	L	L
2	S	Y	Y	H	H
3	M	N	N	L	L
4	S	N	Y	H	H

Key:

Size in terms of staff : L (> 2000), M (500 - 2000) S (<1000)

Independent : wholly independent or part of an overall parent firm

Recently established : whether it has been created since the global financial crisis (i.e. after 2008)

Level of independence : subjective indicator derived from the conversations showing the perceived level of independence from the Group / Parent organisation.

Level of alignment : subjective indicator derived from the conversations showing the perceived level of alignment

6.3 Code analysis

The occurrence of a code does not indicate whether it was discussed in a positive or negative way. For example, when discussing project process and engagement, one business respondent commented

> *"There is a process but I think that it's quite valuable to have a process so that decisions can be talked through."*

That is a reasonably strong and positive view. By comparison, another business respondent remarked

> *"There seem to be lots of forms and each project has lots of meetings. Some of that is really useful so we can really decide what we want but some of it just seems to be meetings for meetings sake. I don't really understand their forms and all that. "*

This implies that part of the process is perceived as beneficial, in terms of deciding the project scope but the interviewee sees a downside in the administration of the project. Simply recording that project process was discussed does not provide sufficient texture to the discussion. The weighting which was discussed in section chapter 5.12.2 is useful to draw some distinctions between whether a response was positive or negative and the intensity of that response. Table G1 in Appendix G details the codes and the number if instances recorded against them. It shows the average score for each code grouped by attribute and dimension. Note: these are the raw scores before weighting.

6.4 Code frequency and intensity

The existence of instances of a code indicate that it generated some interest by the participants even if it is not possible to conjecture the nature or strength of that interest. Figures 6.1 to 6.5 below show the instances of code occurrences for both IS and business interviewees by social capital dimension. The charts show the code

intensity as a percentage of the overall number of interviews to enable a comparison between the two communities.

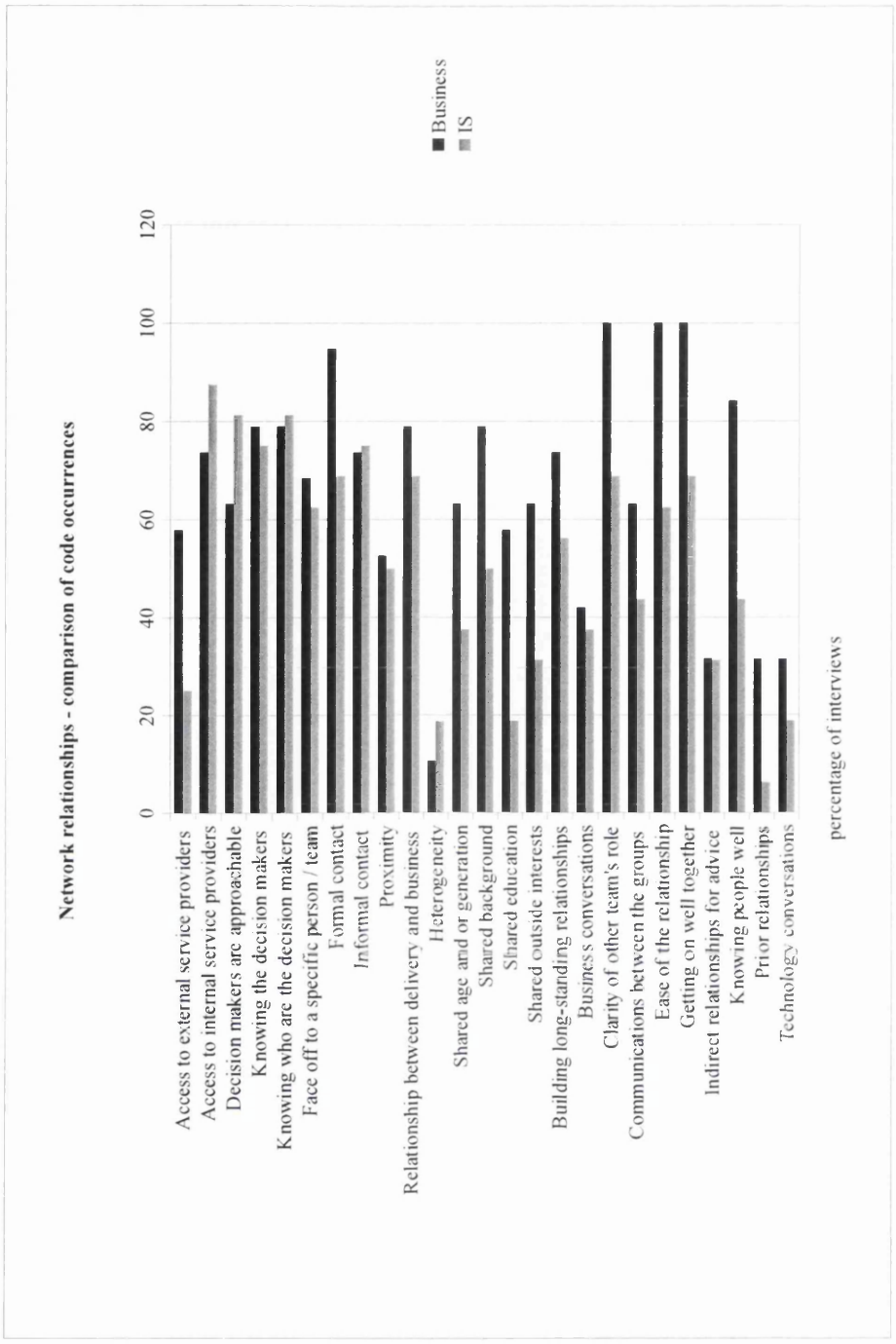

Figure 6.1 Network relationships - comparison of code occurrences

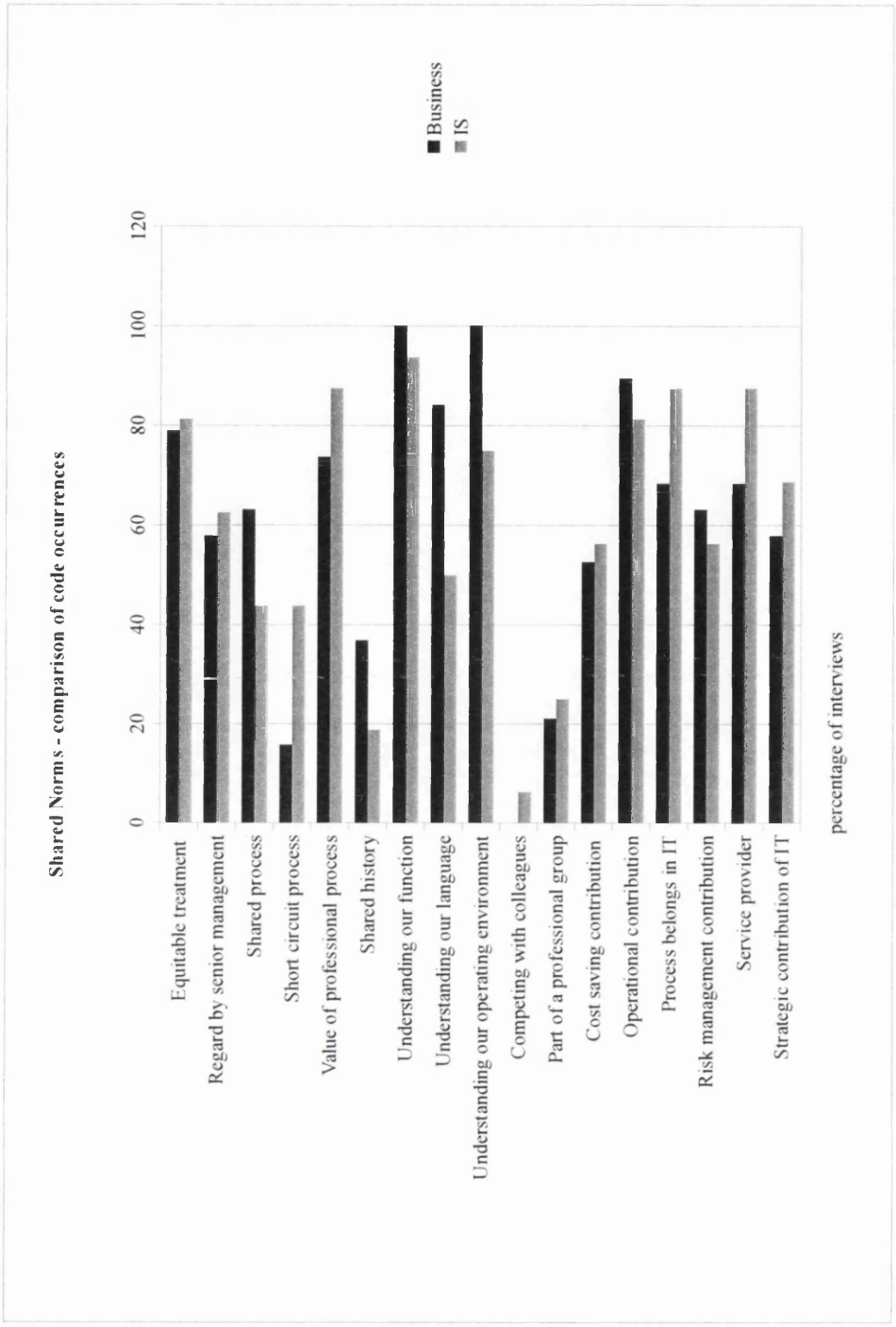

Figure 6.2 Shared norms- comparison of code occurrences

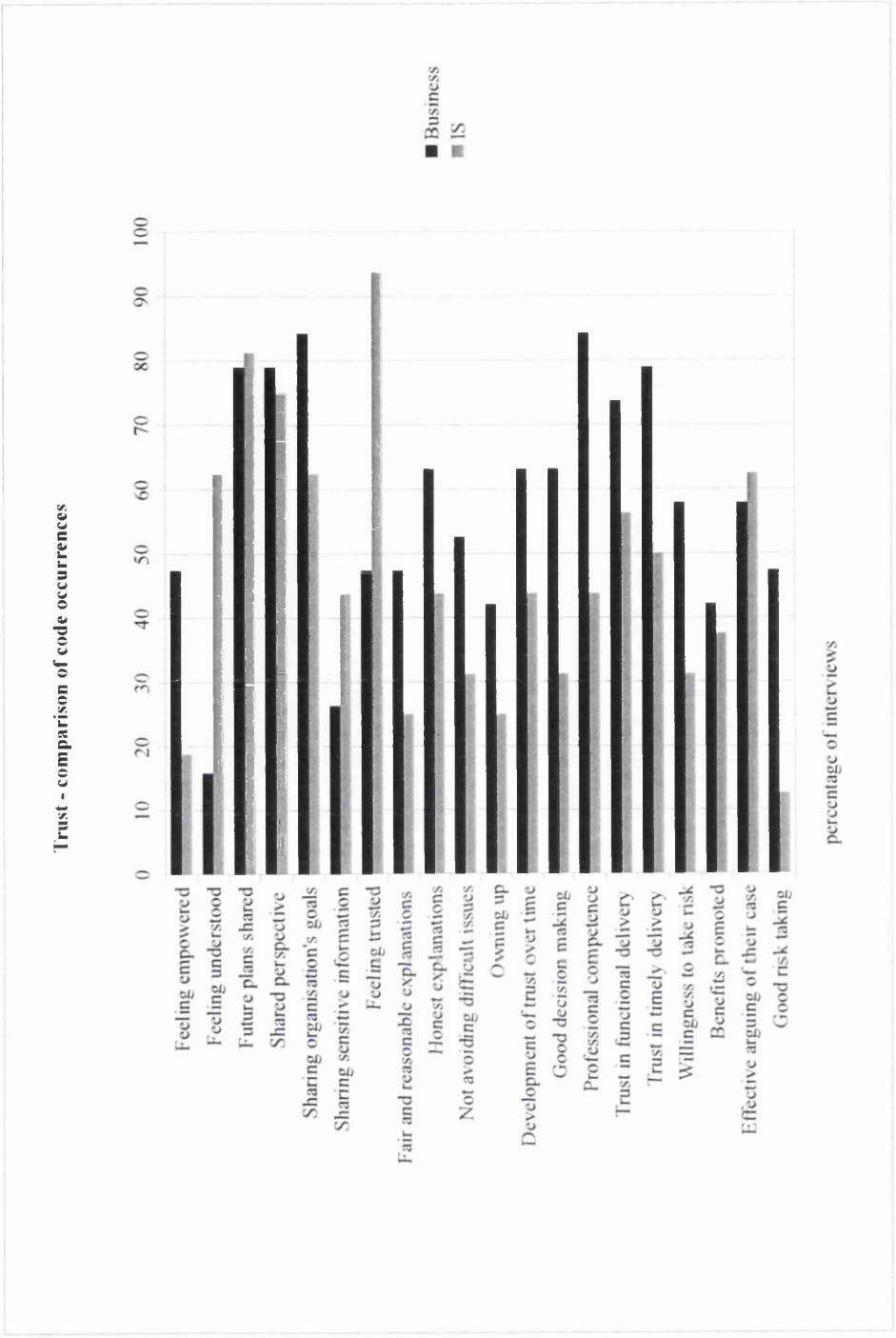

Figure 6.3 Trust - comparison of code occurrences

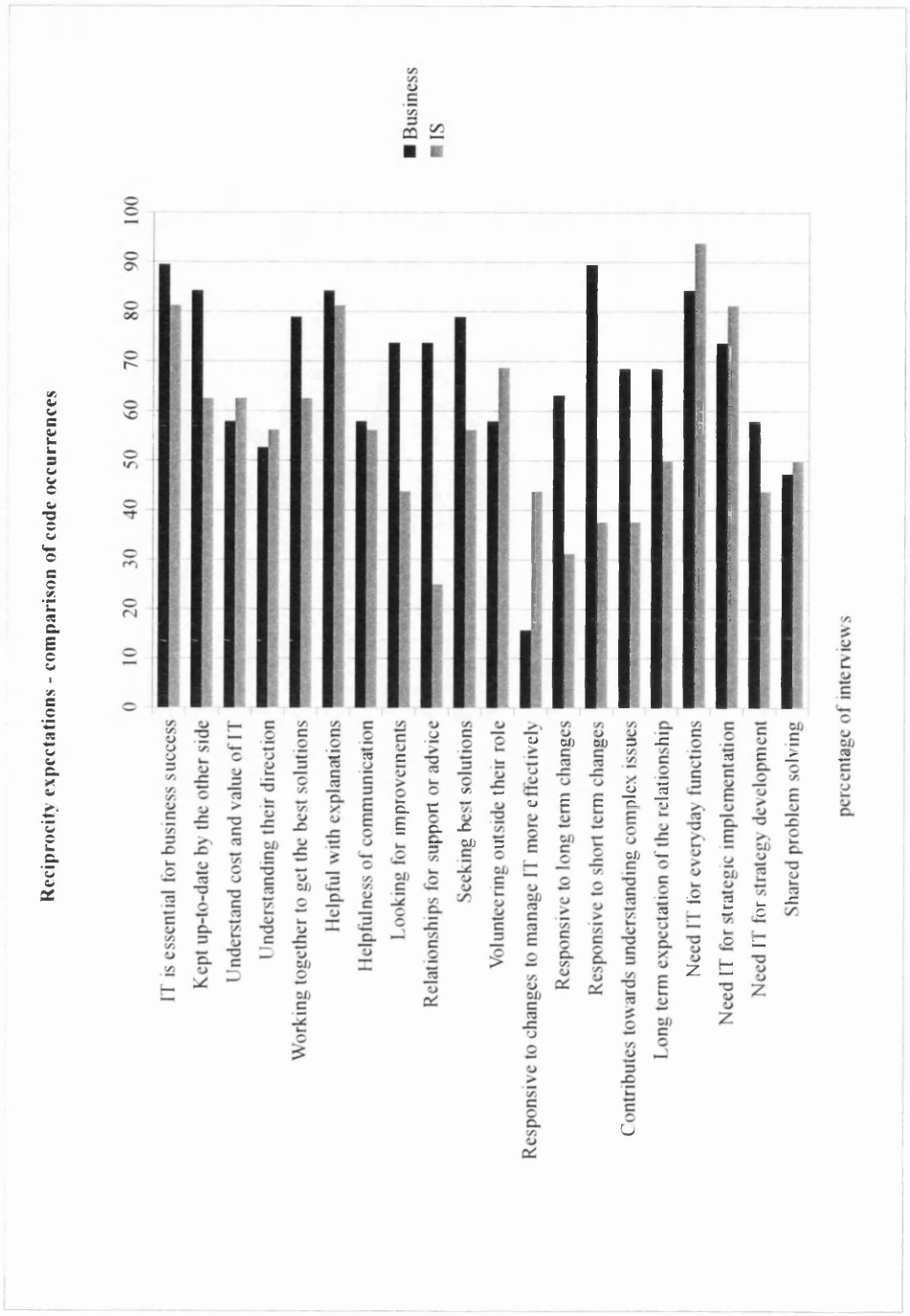

Figure 6.4 Reciprocity expectation - comparison of code occurrences

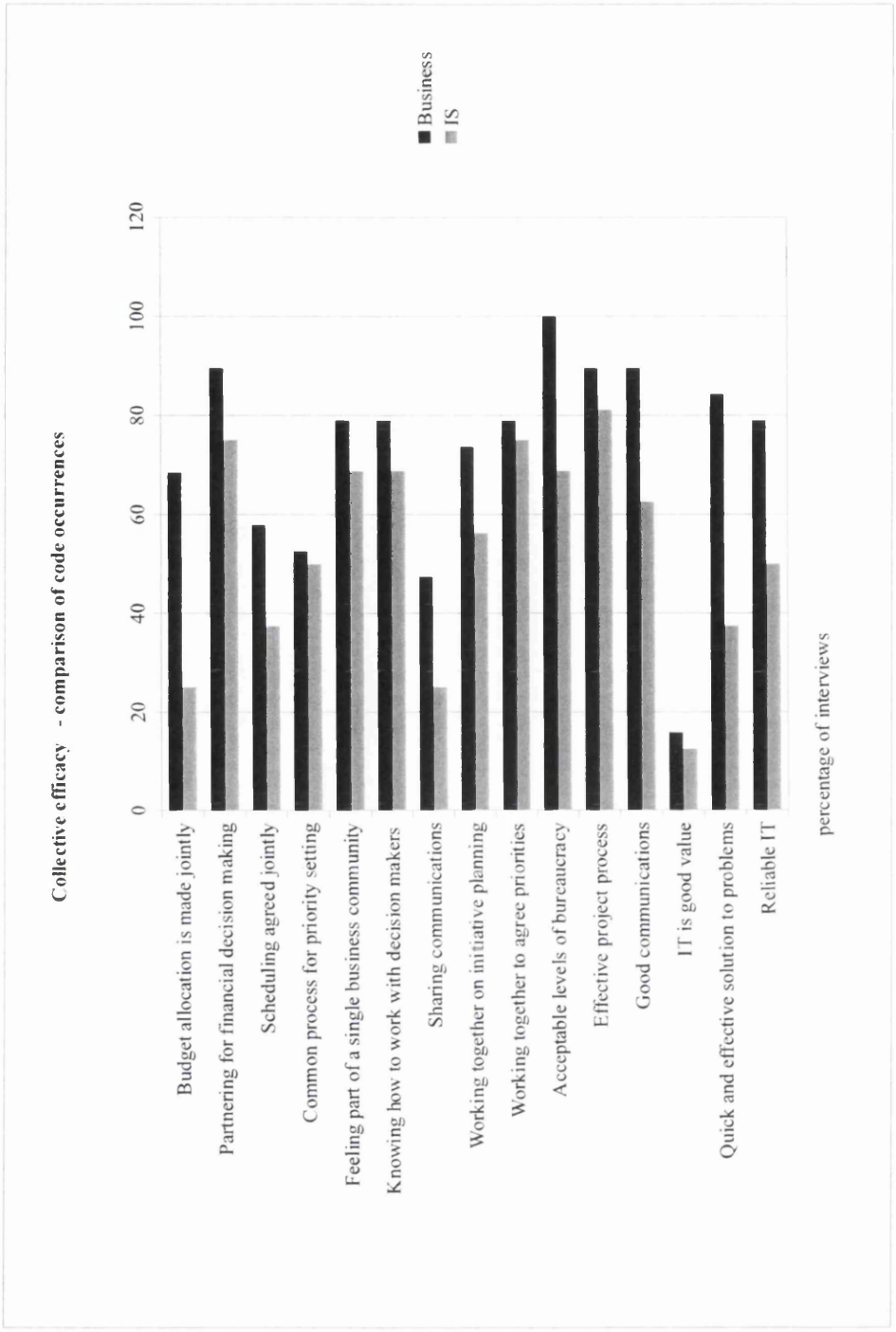

Figure 6.5 Collective efficacy - comparison of code occurrences

However, these charts are of limited use since they do not show whether the interviewee regarded the other team positively or negatively according to any one attribute, simply that they mentioned that attribute during the course of the interview. In most cases the business and IS interviewees tended to remark upon a particular attribute with a similar level of frequency. The following attributes are worthy of note since there was a dissimilarity in the frequency between the two communities.

Table 6.2 Dissimilarities in frequency of response

Coding cluster	Attribute
Network relationships	getting on well together clarity of the other team's role shared background formal contact access to external suppliers
Shared norms	understanding of the operating environment understanding the language used having a shared history value of professional process whether IS is a service provider whether process belongs in IS
Reciprocity expectation	responsiveness to short term changes working together to get the best solutions being kept up-to-date on future plans by the other team knowing people well mutual obligations

Coding cluster	Attribute
Trust	willingness to take risk trust in timely delivery trust in functional delivery professional competence good decision making feeling trusted feeling understood feeling empowered
Collective efficacy	the existence of reliable IT working together in alignment quick and effective solutions to problems acceptable levels of bureaucracy joint budget allocation.

6.5 Code co-occurrence

Figures 6.6 and 6.8 below show the instances of co-occurrences of codes for both IS and business participants by dimension. Where the existence of codes shown in the previous charts is not particularly insightful in themselves, the clustering demonstrated in the co-occurrences show the areas of interest for the interviewees. The charts show those codes where 75% or more of the interviews focused on the cluster, that is, where an attribute was mentioned along with another attributes in the same interview in 75% or more of all cases. This was chosen to distill the responses into a readily understandable cluster.

For the IS interviewees, there were 23,512 instances of code co-occurrences of which 105 were seen in 75% or more interviews, that is, 0.45%. In the case of the business interviewees, there were 39,445 instances of code co-occurrence of which 488 were seen in 75% or more interviews. This is a rate of 1.24%.

In the case of the IS interviews, the mean number of codes was 51 and the median 52 whereas this was 62 for the business interviewees with a median of 64. The IS number of codes ranged from 32 to 78. The business number of codes ranged from 39 to 95. In total, the maximum possible number of code co-occurrences in any one interview was 4753. Each code is mentioned more times by business than by IS participants with a median of code mentions of 68 and 56 respectively.

On average the IS interviews tended to be very closely maintained at about an hour but in some cases, the business interviews ran on to two hours and this may explain why this difference is seen. It is also possible that, in a longer interview, the interviewee would have been more comfortable with the interviewer and therefore happy to be more expansive. The longest interview showed the highest number of co-occurring codes with the next highest frequency being 82 codes. That particular interviewee was a very expansive subject and needed no encouragement to make wide-ranging comments.

Although it is interesting to note the differences between the two charts this is qualitative data, and hence it is not suitable for further statistical analysis. The IS respondents level of co-occurrence show that they were concerned with the way that business understood their function in combination with understanding their operating environment and appreciation of the operational contribution made by IT, the value that professional processes bring to the organisation as seen, for example in having an effective project process and the location of process within IS. How the business understood their function also reflected on the perception of IS as a service provider, the extent to which they had a shared perspective and whether future plans are shared.

They were interested in how internal service providers could be accessed in combination with the business having an understanding of their function, enjoying a shared perspective, the perception of IS as a service provider. Accessing internal service providers was also linked to the extent to which IS felt trusted, found explanations helpful and knew who are the decision makers. This facet was also linked to having an effective project process.

The most strongly expressed set of co-occurrences are related to the need for IT for everyday functions which linked to the need for IT for strategic implementation, the perception of IS as a service provider, belief that the operational contribution of IS is understood, having an understanding of the IS function and access to internal service providers. It is also linked to decision making and prioritisation including knowing who are the decision makers and the approachability of those decision makers, working together to agree priorities, sharing future plans, feeling trusted and partnering for financial decision making

The most commonly occurring themes were cited by over 80% of interviewees. For network relationships access to internal service providers, knowing who are the decision makers and approachability and accessibility of decision makers was key. In considering shared norms there was a great deal of emphasis placed on understanding of the IS function, belief that the operational contribution of IT is understood and seeing IS as a service provider. The value of professionalism as demonstrated through process was regularly discussed and whether the appropriate location for that process was IS. Equitable treatment of IS by the organisation was a frequent theme. When talking about reciprocity expectations, they viewed the satisfaction of mutual obligations as being seen through the need for IT for business success, for everyday functions and the need for IT for strategic implementation. Trust and feeling trusted was also mentioned frequently.

Turning to the business, seventy-five percent of business respondents discussed the necessity of IT for business success in combination with most other themes notably the importance of understanding the business function, operating environment and professional language. There was a strong feeling of the contribution made by the IS function through project process, reliability, the need IT for everyday functions and for IT for strategic implementation and the role of IS as a service provider. Knowing how to work together by having quick and effective solution to problems, acceptable levels of bureaucracy, agreeing priorities and access to decision makers was also important. Knowing people well, getting on well together with a level of ease in the relationship was seen as valuable and building long-standing relationships enhanced trust and a sharing of perspectives. Developing trusted, working together to agree

priorities and partnering for financial decision making were all seen as part of IS contributing to business success.

Other areas with strong co-occurrences are being kept up-to-date by the other team, helpfulness with explanations, helpfulness of communication, looking for improvements, responsiveness to short term changes, communications through formal contact, clarity of the other team's role, ease of the relationship, getting on well together, understanding their function and understanding their operating environment.

Figure 6.6 shows the co-occurrences of themes for the business respondents and Figure 6.8 below shows the co-occurrences of themes for IS participants. Figure 6.7 provides the key for the chart in Figure 6.6. The key for the chart in Figure 6.7 is embedded in the figure. The charts provide insight into the areas which concern the respondents and how those areas of concern are shared. For example, in the case of the business interviewees, when discussing the need for IT for business success, they discussed 32 out of the 37 themes, demonstrating that the theme was key to their view of the necessity for IT / IS. The figures show levels of co-occurrence only and do not indicate the strength of response or the amount of time discussing a particular topic.

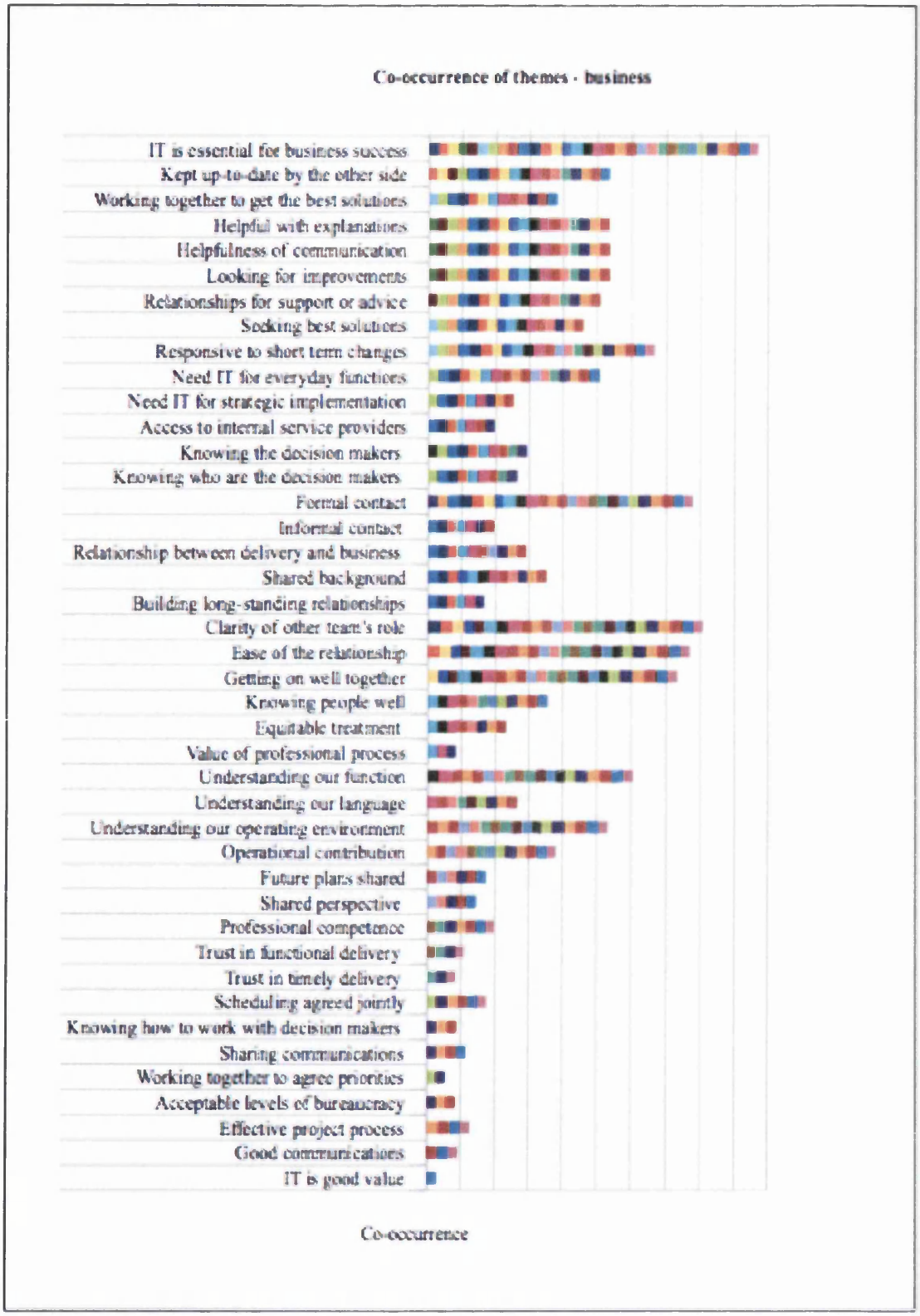

Figure 6.6 Co-occurrence of themes in business interviews

Figure 6.7 Key to Co-occurrence of themes in business interviews (Figure 6.6)

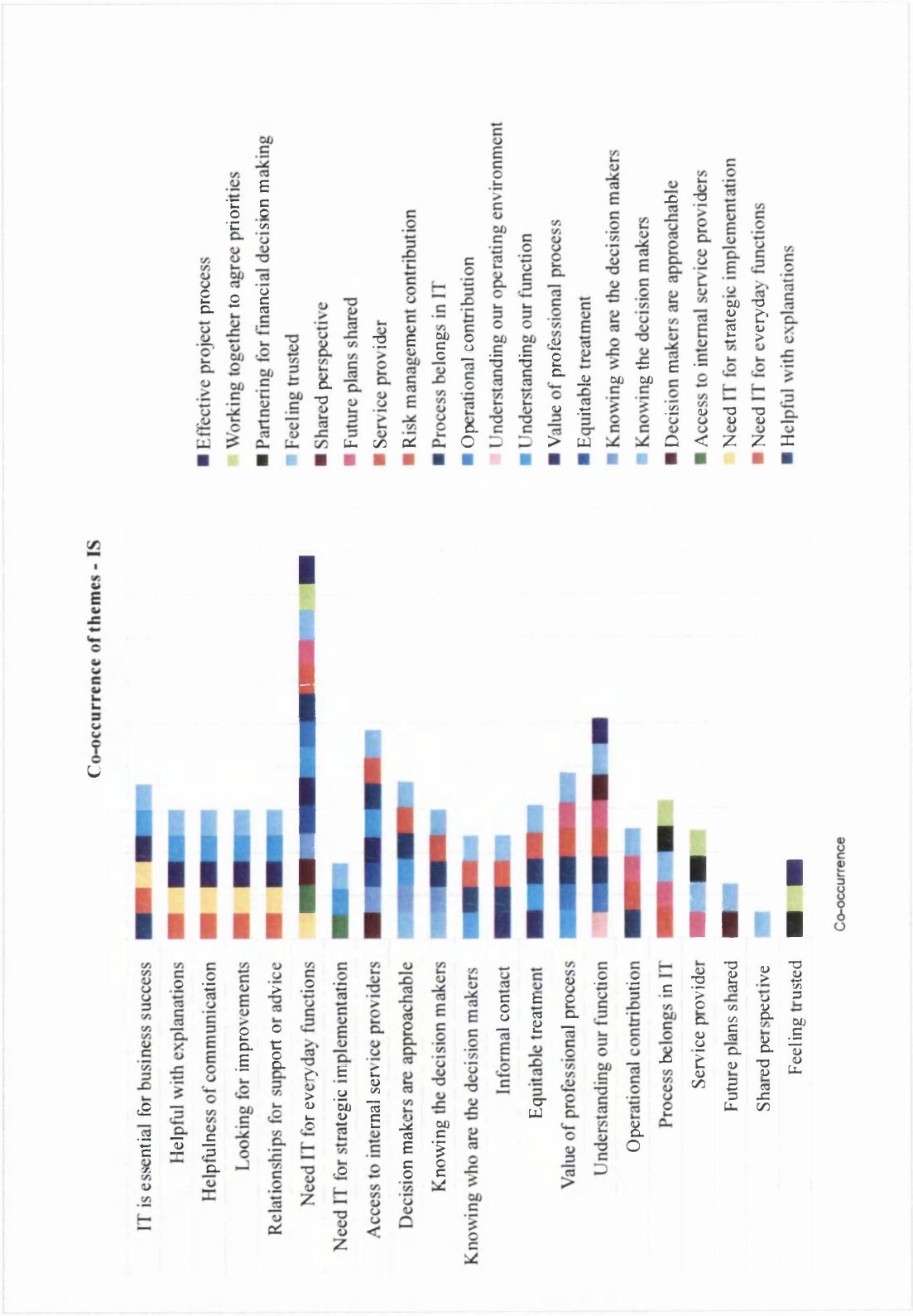

Figure 6.8 Co-occurrence of themes in IS interviews

6.6 Comparison of responses and intensity of remarks

Neither the code co-occurrence data nor the actual numbers of responses offer any insights into whether the participant had either a positive or negative view on the topic or the strength of their reaction. Average scores for each code add some information but this needs to be complemented by the frequency with which the code was discussed.

Figures 6.9 to 6.13 below show the responses by dimension. For each code, the average is weighted according to a frequency factor. The weighted score is calculated thus:

Weighted score = Average score x (Number of responses / Number of interviews)

The number of business interviewees is 19 and the number of IS interviewees is 16.

The findings below describe the responses of the participants according to the themes of network relationships, shared norms, trust, reciprocity expectation and collective efficacy. The findings are not grouped by individual firms but, as discussed in section 6.2 above the IS and business findings are treated as two nominal groups allowing comparison of the two communities.

The individual responses are identified where possible by company and function, bearing in mind the need for confidentiality and anonymity and where such identification adds to the information.

6.6.1 Network Relationships

Figure 6.9 below shows the scores for the codes associated with network relationships.

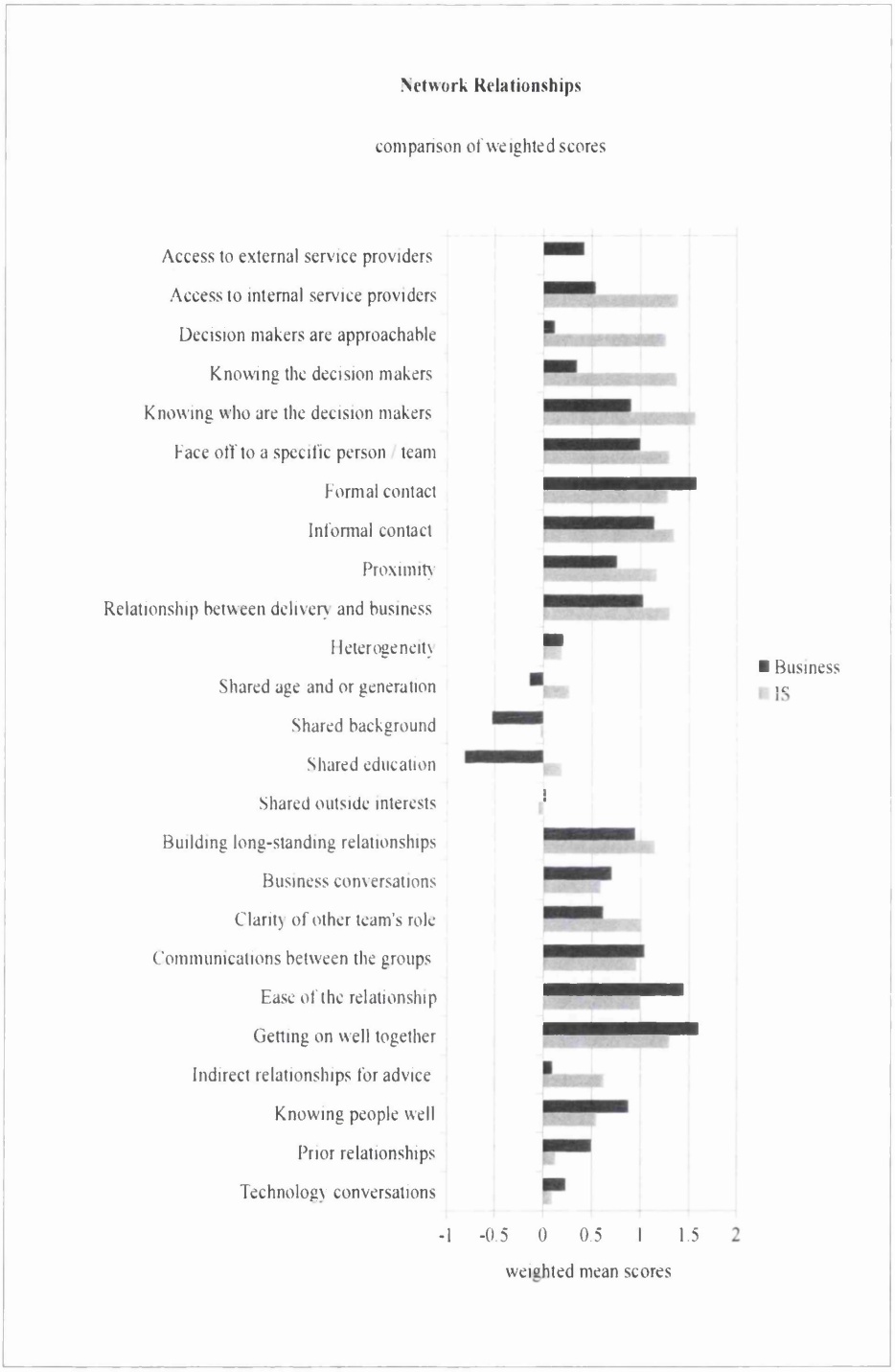

Figure 6.9 Network Relationships - comparison of mean scores between Business and IS

Access to external service providers is a concern for business interviewees in those firms which rely on the parent company for some services (FinCo 1, 3 and 4). The embedded IS team is expected to be the broker in that relationship but it was common for the business respondents to expect to have some level of direct relationship. Interestingly, this was not echoed in their relationship with external service providers, finding that

Perhaps understandably, the IS respondents do not find this such a concern since they are the natural intermediaries with external providers. Both teams recognised the value of a relationship between the delivery organisation and the business.

Access to internal service providers is a matter of concern for both parties but IS mainly felt that they had a good understanding of this since they need to navigate the internal service organisations where a service is provided by Group IS. In contrast the business community often found it confusing as is seen in these remarks from FinCo 1 and FinCo 4 business managers

> *"When it comes to the hierarchy on the other side I don't really bother. I just try to go directly to people with some influence and I depend on them to ... I suppose join up the dots for me"*
>
> *"it's not really worth trying to find out who they are because you're not going to build a long term relationship with them"*
>
> *"I almost don't care about building relationships with the Group IT because it is dysfunctional and whatever I do ... you know I've been introduced to probably about 20 people and I still don't know what they do"*

When considering how to build a relationship with key influencers and decision makers, the IS interviewees were more confident that they knew who were the influencers, that they had some relationship with them, as opposed to simply knowing their place in the organisation and that they were approachable. This approachability could be through formal meetings, informal relationships or proximity. The relationship could be between individuals or to teams of people. In most instances, the perception of IS was that they had clarity of how to relate to their

business counterparts. Business interviewees perceived this in a slightly a less positive light and saw the use of formal communications as more valuable than informal ones.

Creating the right formal and informal contact mix was seen as important so that relationships could be built to be utilised for future benefit. Semi-formal conversations were also valued where there was a regular meeting but without a formal agenda. Informal conversations were seen as useful to set the scene or to expand on a subject which is current, for example, the Head of Fixed Income Investments from FinCo 1 noted

> *"When we meet each other coming into the building or if we're getting a coffee, we do tend to have conversations that maybe follow up on business issues. I think people use that as a good opportunity to raise things with me."*

and found value in the informal interaction:

> *"Sometimes we have the informal stuff when we're all on the train or at the airport. Those are often really productive conversations."*

Proximity was key to building informal relationships for both the business as these remarks from a business manager in FinCo identified

> *"And informally they sit in the same area probably less than 10 metres away so it's inevitable. So yes, informal interaction is very easy. "*

and it was echoed by his counterpart in IS :

> *"A huge factor is that we're all in the same building so we're next to each other screaming across to each other. Proximity matters, absolutely."*

In the larger or more distributed organisations, formal contact was often the only mechanism available to build relationships, for example for this manager in FinCo 4:

> *"There's not such a lot of informal contact with the people because we don't share an office so I don't really see them just in passing. But if they're in the*

building, they always make the time to drop in and say hello. It's nice to be able to put a name to a face."

and reflected on the need for formal meetings for planning and service management:

"We have regular formal meetings with IT to review what's going well and to plan improvements. Of course, it's not all about being happy families. Sometimes we have meeting to complain as well."

In the larger more complex organisations (FinCo1 and FinCo3), simply knowing who the people were was an important factor in how the teams believed that they could relate to each other. This was recognised by both the business and IS, for example, the Head of IT UK for FinCo 1 noted that

"Probably knowing that you exist is probably quite a big chunk of it."

and the same was noted by the Head of IT BAU functions in FinCo 3

"The hook is probably just knowing you."

Business interviewees who had been part of the firm for a long time, prior to major restructuring tended to hark back to a time when people knew each other well with managers from FinCo 1 mentioning that

"In the past, I used to know people, but now most of the people I need to talk to aren't here [in this office or location]"

and that it was less structured

"Everything used to be a bit more informal"

and FinCo 3 managers finding a loss of collaboration

"You no longer get the same quality or willingness to support you like there was in the past".

Beyond the importance of knowing who are the relevant decision makers and influencers, both teams also recognised the advantage of actually knowing those

people. This required a much greater level of engagement as IS managers in FinCo1 and FinCo 3 reflected

> *"Certainly I have the ear of the people that matter with regards to achieving things or getting recognition or seeing the best approach as far as the business is concerned."*

and that

> *"going to physically meet them, striking up regular contact with them, responding in the right way to even the most fundamental day-to-day stuff, that get's recognition and that get's you "air-time" with them"*

Clarity of other team's role played a significant part in how the teams related to each other with the IS team feeling that they had a good understanding of the role and decision making of the business team. This was less certain for the business when considering their relationship with both their embedded IS team and was a major concern in their relationships with the Group IS providers. They were often not confident that they knew the right people with whom to engage and found that the organisations were often going through internal changes which were hard to track leading to frustration. This FinCo 1 manager claimed

> *"Half the time it hardly seems worth bothering trying to work out who to talk to because the next time you want to talk to someone they'll be different or had another reorganisation"*

and in FinCo 4 they subverted the structure by not following

> *"hierarchy and to pick on people who are quite good and to then, sort of find out the politics and then use that to route our conversations and use that to go to the right people."*

but it leaves them frustrated nonetheless by the complexity of both local and Group IS teams :

> *"by the governance of this whole thing. I've got a relationship with two quite different IT organisations".*

IS management in FinCo 1 saw value in building long-term relationships

> *"You also gain a wide network of knowledge about individuals who can achieve, who can get stuff done."*

and that this could be reinforced since

> *"the more I meet with them and the more I exchange information and share with each other, not only information from me to them but also them telling me about how they feel about the service. going to physically meet them, striking up regular contact with them, responding in the right way to even the most fundamental day-to-day stuff, that get's recognition and that get's you 'air-time' with them"*

The interviews explored how much people thought that they were like or unlike members of the other team. Outside interests and age were regarded as fairly neutral by both teams. In each organisation both IS and business interviewees tended to remark that their opposite team was approximately the same age as themselves even though that varied between organisations with some claiming to be 30 - 40, others 35 - 50 or mainly under 40 years old. They tended to perceive themselves as the same age. Age was not seen as a significant factor in building relationships but was regarded as a lubricant in the relationships with this IS manager commenting

> *"People roughly the same age : it does make it easier because you're going through pretty much the same stages in life."*

The business team were more likely to stress the usefulness of an interest in sport as a way of opening conversations and maintaining an easy relationship with IS,

> *"Definitely sport makes a big contribution. I don't mean playing but have a sport that you follow. It's a real ice-breaker on a Monday morning."*

Even this most pessimistic business participant from FinCo 1 who saw almost no commonality with IS remarked

> *"Sometimes we have the footie on the big screen and I suppose they're in there like the rest of us."*

The IS interviewees were less likely to talk enthusiastically about the value of sport as a way of maintaining the relationship with only one interviewee remarking on it in a wholly positive light. One IS respondent noted that sharing the same interest can be a barrier when it is highly competitive and one business interviewee noted that people who did not share the interest might feel excluded.

Neither team saw it as anything more than a way to smooth the relationship and there was no mention of any other extra-mural activities. Occasionally, explicitly arranged social events were discussed, such as Christmas parties, but no respondents saw them as particularly helpful in building or maintaining relationships.

Having similar qualifications and experience as the business was seen to be helpful since there was a general understanding that the business was speaking to someone who they could respect. The IS team saw themselves as fairly like their business counterparts with regard to education and background showing a strong and positive response but this view was not shared by the business team showing a strong and negative response. The business saw little commonality and often professed to have little understanding of the background of the IS team, with this business manager in FinCo 3 noting

> *"I wouldn't say we're from the same background, either socially or educationally. I don't really know so that's just a guess."*

and that they did not see themselves as peers with their IS counterparts

> *"I'd say we're definitely not from the same background. I guess they're all IT grads or engineers or something. We come from really diverse backgrounds. Some of us are Europeans so don't even share the UK education [background]. I don't think that we could be described as part of a peer group with IT."*

and this business manager from FinCo 1 believed that there was a gulf in educational background

"I'd say we're definitely not from the same background. From the IT team ... I guess they're all IT graduates or engineers or something. We come from really diverse backgrounds. Some of us are Europeans so don't even share the UK education [background]. We're all pretty well-educated. Mainly from the ... this is going to sound a bit ... well we tend to have been to the good universities if you know what I mean. I don't just mean Oxbridge but the top class universities from whatever the country we come from. I'd guess that's probably not true of the IT team."

and in FinCo 1, another business manager held a clear perception of that there was little common ground with the IS team

"they're all very tech, aren't they? Sometimes I think it's just like the "IT crowd" [TV programme]. Mainly they're geeks."

In contrast, IS participants remarked that they were often on the same level as their business partners both in terms of education and professional background with the CIO from FinCo 2 stating

"I've got the same qualifications and experience as them, so there's a general understanding that they're not speaking to a developer, they're speaking to an IT person with excellent business background."

and his team were anxious not be be seen as people who had no business knowledge

"We shouldn't been seen as those short-sleeve shirt wearing guys who come in wearing flip-flops and are coding away."

In a small number of cases, the business saw beyond the simple perception of the IS team as being a purely technical service with this remark from a FinCo 4 business manager

"There's a general perception of them being a load of boffins but when you get underneath it's totally different and worth trying to understand them. We do have a really diverse group which is good. I don't think it's by design but has just worked out that way."

but this FinCo 1 fund manager found that coming from a similar professional background was critical

> *"In the business we all obviously come from an investment management / banking kind of background. Not sure about the IT team. The specialists, yes ... they definitely come from an asset management / pension or banking type of thing. "*

and the COO from FinCo 4 believed that it allowed them to build a better relationship

> *"My opposite number in IT has come through quite a varied background including investment management so he's got all that knowledge anyway."*

Both communities remarked on the appeal of heterogeneity to the organisation, irrespective of the scale and nature of the firms

> *"there's quite a bit of diversity within the firm, you know, within the company even though we're quite small we probably have a very good [diversity] profile ... better than you might see in a "normal" kind of organisation."*

and this created a more varied and interesting workplace where

> *"it's ok when everybody is really different, you know, completely different backgrounds and that makes it interesting."*

which was often cross-cultural where

> *"We are not really from the same background. because I come from a different culture it probably helps because, not being born in the UK, you have to learn to adapt to different cultures."*

Being a respected part of a peer group in the organisation was more important than sharing a background, with the CIO from FinCo 2 remarking

> *"Some of them have amazing public school backgrounds. But I am part of their peer group. I am as senior as anybody else here."*

Business interviewees in all firms spoke with respect and admiration for those parts of IS which were seen as directly servicing their needs, for example in specialist technology or relationship management praising

> *"The dedicated IT team is a bit more like us. Some of them came from a background in our speciality."*

again stressing the value of the business background

> *"Most people that are in our firm, 95% of them, will come from an asset management or insurance type of company."*

finding that they

> *" get on well because it's the business focus."*

A number of business respondents identified the wider IS team as having little business knowledge and this was combined with poor social skills, even to the extent of casually remarking, "Perhaps we're different animals. Differently evolved". There was a clear perception that IS draws on a different set of cognitive skills, illustrated by this fund manager from FinCo 1:

> *"I don't think that the same people are attracted to the two [functions]. I think you've got to have a particular kind of mindset to work in IT. I'm not sure we could ever really be exactly the same. "*

Knowing people, building long-standing relationships and communicating within those relationships was considered in a largely positive light by interviewees in both teams with business participants tending to hold a slightly more positive view on aspects of how people related with a relatively easy relationship. Several interviewees from both sides commented that it was not simply a case of liking the other person and perhaps they did not know them well enough to say that they liked each other but there was sufficient ease in relationship to allow them to work well together with this manager from FinCo 1 making the following remark:

> *"On a personal level, soldier-to-soldier level everybody gets on alright."*

Almost all conversations were understood to be business focused and there was very little interaction that was centered on technology, even the technology which was in use within the organisation.

Communications between the groups were recognised as important and valuable by both teams with the business rating them more highly than IS. For IS, it is a way of telling the other team about events and changes by communicating in FinCo 2

> *"on a need-to-know basis".*

while being wary of the need to communicate to the right people at the right time from the Head of IT UK in FinCo 1:

> *"if I'm trying to change something, it can either be deemed a success or a failure if I speak to or I don't speak to the right people in the right timeframes."*

But the business tended to see it as a much more bonding activity, reflective of the quality of the relationship as the COO of FinCo 4 identified:

> *"Having a good relationship or at least a close knit relationship, it makes things better. By communicating very frequently and making sure we share all the right stuff, trust builds up."*

Prior relationships from earlier days were highly regarded by the business. They used these to tap into unclear new organisations and to access advice as this manager from FinCo 1 noted:

> *"when I look at the old [pre-merger] teams, we had a big history together. We went through a lot with two mergers in a few years. You build a history with that. It builds a very different kind of relationship. You don't have it with the people who weren't part of that. You can't really."*

6.6.2 Shared Norms

In looking at whether the participants thought that they were treated equitably and whether their functions were accorded the same regard in the organisations, the interviews covered a range of topics. Figure 6.10 overleaf shows the scores for the codes associated with shared norms.

Considering equitable treatment, they discussed expectations of dress code, time-keeping and sanctions for misconduct. Both sides found that there were equal expectations of behaviour reflecting that sometimes people needed to present a smarter appearance in external meetings and that working hours were dictated by the needs of the job. Not only did they believe that they were treated the same way but they stressed that it was important that this was seen to be the case. Typical of comments are the following from FinCo 1 and FinCo 3 where the business remarked

> *"Same behaviour codes. Absolutely. We have exactly the same standards. It's very important."*

and placed an emphasis that it was part of professional work-place behaviour

> *"it's more than what you wear. I think that they're still expected to be, you know, totally professional."*

and IS saw it in the same light

> *"if someone falls outside of the standards, it doesn't matter who you are" [there are consequences].*

with no tolerance for different standards

> *"I think that behaviour, yeah, the same standards are expected."*

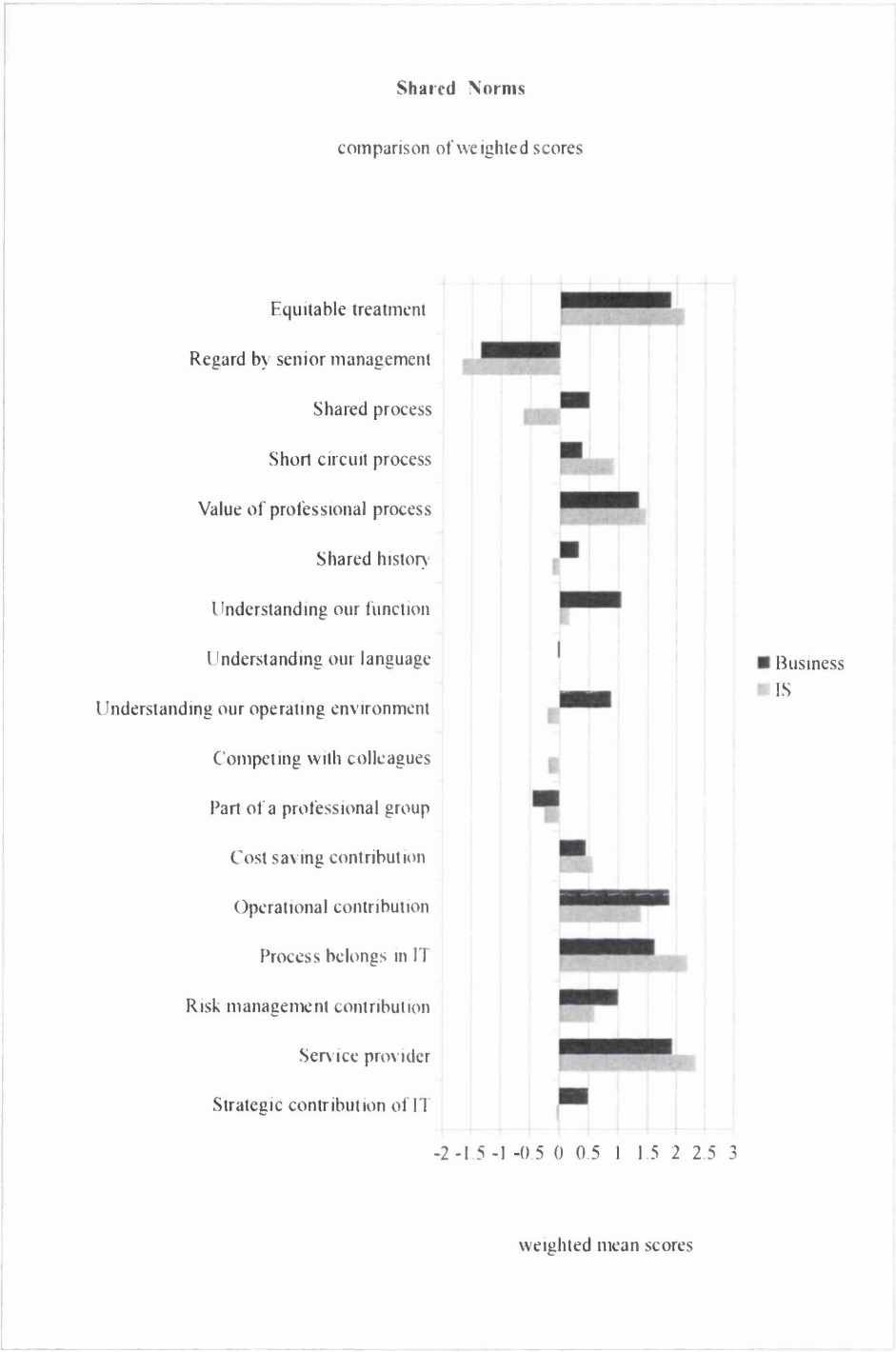

Figure 6.10 Shared Norms- comparison of mean scores between Business and IS

Turning to whether the organisation and, especially, senior management, held the IS in equal esteem to the business, both sides in each firm were in agreement that this was not the case. The business viewed it thus

"I think that the board is focused on client facing and revenue generating [functions]"

and that the difference stemmed from the perceived value to the firm

"We are revenue generators and they aren't. It's the same for all the support services. "

and IS saw it in much the same way

"senior management does not rate us like the business. I work hard not to make it that way but we are seen as a cost."

Exploring the use and sharing of process in firms showed that both sides found the organisational processes fairly opaque especially in the large and complex firms, FinCo 1 and FinCo 3. They frequently remarked that there was process imposed on the organisation for things such as annual budgeting and HR activities. These processes did not really embed themselves into the organisation for other purposes. However, when considering processes which might have a shared benefit, such as the allocation of budget to initiatives or determining priorities, there was still little commonality. The business often equated process to unnecessary bureaucracy and lack of empowerment for example, this FinCo 1 business manager complained:

"people are simply not empowered to say "I'll put a day on it to see what happen". So we don't know whether a job is a million Euros or just fifty thousand. And we're not allowed to guess. We can't say "you're authorised to do up to X amount" because they're not able to tell us what X amount might be."

which is exacerbated by the time taken to achieve IS changes for the COO of FinCo 4

"We have really different timescales. They can take months to mobilise. Then there's the problem of being locked into some ways of doing things. I don't

know how we can speed them up because we sure as hell can't slow ourselves down."

Some business interviewees found process to be more of a burden than a benefit which they believed was not necessary for much of the time as the Head of External Marketing in FinCo 1 noted:

"To be frank, I don't really have the time. We can't really give up too much time to that kind of thing."

but that projects were seen as special cases where process was perceived to be valuable but even then, wholehearted commitment was often absent

"When we have a project going on, then we make sure that enough [business] people get involved so they can explain it all to the rest of us."

but for the Head of Compliance in FinCo 1 the existence of a process was a helpful discipline

"There is a process but I think that it's quite valuable to have a process so that decisions can be talked through."

IS interviewees saw a very different approach to operational processes with this IS manager from FinCo 3 commenting:

"Definitely have different processes even down to finance, even down to time tracking, project management. You don't see project management done in the same way in the business as you do in IT. IT takes a very scientific approach to project management. It uses various toolsets that you just don't see in the business."

In many cases, business interviewees were keen to be able to short circuit process by engaging with people informally and this was seen across all firms:

"So where you would normally have to follow procedures, sometimes you can get stuff done purely by the fact that you know someone and it's a valid request."

which was a factor of knowing people

> *"It's down to the individuals you know and down to the sorts of relationships you have with those individuals. If you're accepted, if you're liked, if you're trusted, then it's easier to follow that route."*

IS found the business side to be disorganised with little formal process and expressed frustration and the need to take the lead on process as the CIO of FinCo 2 observed

> *"They're very undisciplined and it's one of the hardest things that I have to deal with and take disorder and make some order."*

and that IS was often seen as a safe repository of process as noted by the CIO of FinCo 4:

> *"Processes are definitely more IT related. And I think that it's magnified by an organisation like ours because we're quite agile and we've gone through a lot of change and without those things like good process controls it would have been so much more difficult."*

even when the relationship between the business and IS is at its closest, IS management in FinCo 4 believed that

> *" it will be the IT side that manages the changes. It won't be the business."*

Nonetheless, IS management appreciated the frustration experienced by their business counterparts as this IS manager in FinCo 1 reflected

> *"It's the bureaucracy and also I think that the bigger the organisation, then the higher up the chain it has to go. When you're dealing with a corporate of our size, you're operating outside of your division or business unit and have to start going to group level and then the bureaucracy gets multiplied the higher up it goes and it slows things down. And I think that's the element [of their frustration] when all I'm asking for is something that simple and why does it take that long, to then be told 'no you can't have it' ".*

In the two smaller firms (FinCo 2 and FinCo 4) common processes were more likely to exist. In both firms, senior IS was the driver of process into other departments. They were both able to gain consensus for those processes since they were top level managers and there was a vacuum on the other side.

Discussing whether they believed that they shared an understanding of each other's day-to-day function, the technical language employed by each other and the wider competitive or regulatory environment revealed a distinctly different perspective. In those organisations which were served by Group IS functions, the business was very clear that the Group level functions had little or no understanding of the business

> *"No, I don't think they understand what we do at all. But then they're not really there for that. I don't think. I'd like to think that they know which bit of the firm makes money."*

but at least appreciated where the pressure points existed

> *"I think that some of the people really know how important these things are for us but I don't think that they understand what we do."*

although where functions were delegated remotely it remained a problem

> *"As for Group it's difficult because they haven't got a clue about the business. They sub-delegate some of that [work] to an offshore location and they wouldn't have a clue about what we're doing."*

Their appreciation of their dedicated IS organisation was notably different, as might be expected by this Fund Manager in FinCo 1

> *"When you look at the senior level in the fund management relationship management team. Definitely I'd say that they are really capable. The head of that team has a long, long history in fund management and so he has a really good handle on it."*

and their wider environment scanning was valued in FinCo 4:

"These guys facing-off to the fund managers. So they do know .. . they probably could manage a portfolio ... [laughs]. They really are clued in and they know a lot about business trends. The other good thing is that they seem to have connections out there to other firms so we get a lot of feedback on wider trends."

Although some interviewees were surprised that that their IS counterparts had any in-depth business knowledge as this business manager from FinCo 1 noted:

"IT really does understand the business environment. Some people are trained! They have business experience outside of their [IT] specialisation. I can talk to them. I was talking to one of the guys who was managing the servers ... no I don't know what he was doing [laughs]. But he generally knew enough about the business to enable him to talk about it seriously. It was quite surprising but it was good."

From the IS side, there was a markedly different response, with IS management finding that their opposite numbers had frequently had a poor understanding of many aspects of IT as was noted by the CIO in FinCo 2

"They still get a little confused because fundamentally, it's not their job."

but there was a strong perception that the business did not appreciate IT skills as identified by this IS manager in FinCo 2

"Everybody can pick up a PC magazine and read something and say "Oh, that's what we should do at work" because they don't really understand the implications"

without understanding the nuances as commented by the Head of Infrastructure from FinCo 3

"You try and explain that security is an issue. It's about loss of data, loss of information that goes out of the door and they don't get it."

or any complexity beyond that required to do their job which was remarked upon by the CIO from FinCo 2:

> *"They have an understanding of how things hang together but, you know, they probably have say 15 - 20% more understanding than the bare essentials that they actually need to be able to do their jobs."*

which creates problems when FinCo 2 is considering major investments

> *"I could be telling them to buy clothes pegs, they really wouldn't know."*

A small number of IS interviewees in FinCo 1 and FinCo 3 touched on their sense of professional identity, stressing that they saw themselves as part of a wider IS community and that their business was IT not investment management. In one case the interviewee saw himself as competing with his IS colleagues in order to gain respect from IS management.

In looking at shared norms, the interviews sought to capture the extent to which the two communities agreed with each other on the way that IT contributed towards the firm both at an operational level and a strategic level. Business interviewees recognised that their businesses were dependent on IT, irrespective of the business model. It is needed to run operational functions and to manage risk and resilience as considered by the Head of Risk for FinCo 3

> *"IT is really important when it comes to managing operational risk"*

and the FinCo 4 Head of Compliance appreciated the need

> *"for secure IT and understand the disruption caused by security breaches. Reputational loss would be catastrophic."*

Business managers from all firms and functions did not have a clear view on any cost management contribution that IS might make and were not unduly concerned by that fact

"It's important that IT understands that they are here to add value. Everything should be about servicing the users."

since IT services are not regarded as core to the firm and

"Senior management think IT is a bit of a commodity."

Most importantly, in almost all instances they regarded IS as a service

"IT is a service to the business."

and believed it would be inappropriate to think of it in any other way

"IT is really there wholly to support the business. I wouldn't want to see it any other way. "

These views were broadly echoed by the IS interviewees in each firm who believed that the business saw IT as a "necessary evil"

"To be brutally honest, they'd do with out it if they could but they do have an appreciation of its importance."

and saw no paradox in viewing themselves as such

"I am just a service provider. I might be a jolly nice one but I am just a service provider"

Cost and value management were not believed to be well-understood by the business, irrespective of the size and complexity of the organisation with this remark being typical of the views of IS management:

"We cost money, we don't make money so because it's expenditure rather than revenue

They did not comment on the way that IS managed operational risk in this context. Despite the fact that both FinCo 1 and FinCo 3 have been through major organisational reorganisations and consolidations, such focus was on overall cost reduction rather than on achieving cost savings through efficiency

"The business of IT could be making the organisation more efficient or more cost effective to run. It could be around being more cost effective around IT resources or cost effective but we don't have the business buy-in for that."

All IS interviewees reflected on the difficulties in explaining the need for IT and the contribution by IT to the success of the firm

"Significant effort is required to continually educate the business with the IT activities."

while IS management struggled to get the business engaged in planning for change

"Planning is probably one of the biggest bug bears that I have. The organisation isn't terribly structured or disciplined in terms of how they do things."

While IS was seen as essential for operational functions, a contributor to risk management and a key ingredient to strategic implementation, both teams had a clear view that IS is a service provider.

6.6.3 Trust

Feeling well understood and trusted varied between firms and between individuals in those firms. Figure 6.11 illustrates the scores for the codes associated with trust.

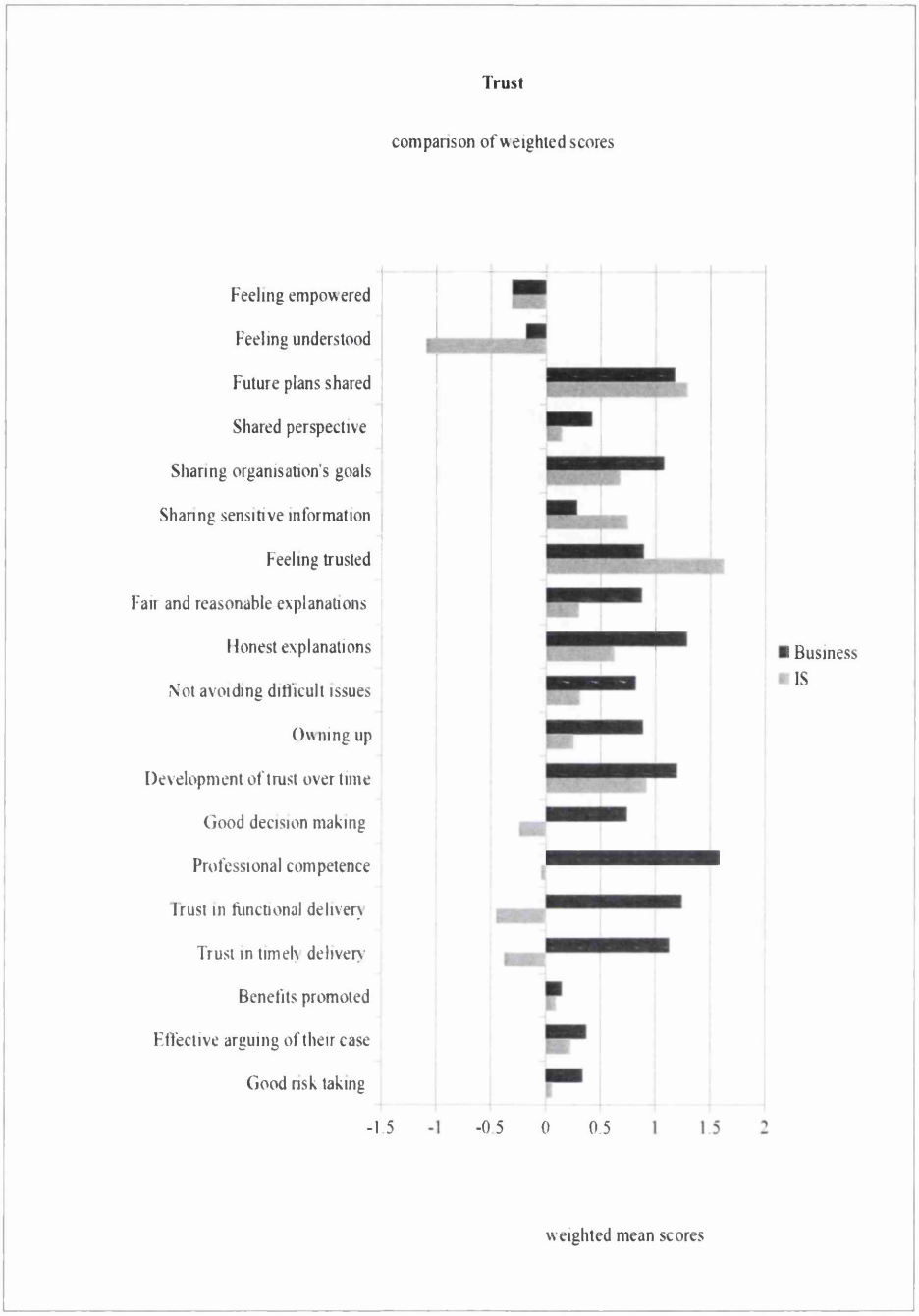

Figure 6.11 Trust- comparison of mean scores between Business and IS

In FinCo 1 and FinCo 3, where a prior relationship existed the business interviewees tended to believe that there was good mutual understanding

"There's a legacy of understanding each other".

but were poorly understood in the wider organisation, especially from Group IS as the Head of Asset and Liability Management in FinCo 1 commented:

"I said I really don't know why certain things are [happening]. When I asked, why do you think that is, then? I got blanked. For 2 reasons : 1) they couldn't be [bothered] to answer me because it's not their job and 2) they don't care."

where they had little clarity on how decisions were made

"Sometimes they de-prioritise certain things with no feedback."

They also appeared to find the situation unresolvable

"And no matter how much we moan about it, it's not going to get fixed quickly."

In FinCo 4, the business tended to feel empowered

"There are no separate agendas. It's all open and honest and frank."

and in FinCo 2 they placed a great deal of faith in their IS organisation to do the right thing as the CEO commented:

"As a business, we always go to the group run by our ITD. We like him providing a one-stop shop. When mistakes happen, we aren't frightened because we get good information either directly [from vendors] or via our ITD."

From the IS perspective, IS interviewees in FinCo 1 and FinCo 3 do not feel empowered or understood

"I think that everyone has an interest and everyone feels that they have a say and has input to the IT world but I don't think it works the other way round. I don't think that I can ask a fund manager explain to me what your strategy is

for the next five years. It just wouldn't happen. They'd probably laugh in my face and say go away. Go away and make the IT work better."

and felt that they were little valued

" IT is very important but treated as a poor relation for the most part. It's always "You need to do a better job, you're not doing a good enough job, you're too expensive".

In FinCo 2 and FinCo 4, the IS interviewees often find their business counterparts are irritated by controls and processes but the IS team feel that it is important that they manage processes because of a lack of maturity in the business

"We agree at our change meetings on Wednesdays. And they're like "It just takes 2 seconds, go on, just turn it on"

and that they needed to protect the organisation

"I must admit, they can't make a lot of changes without us. And that's a control mechanism. They do struggle with it but they're accepting of it. I think that they accept it's reality."

Business felt that being trusted was integral to the relationship with the Head of Compliance in FinCo 4 :

"Having a good relationship or at least a close knit relationship, it makes things better. By communicating very frequently and making sure we share all the right stuff, trust builds up"

and that it combined with loyalty

"Trust and loyalty is integral."

which was underpinned by support and respect

"We give IT a lot of support and we are prepared to listen".

The IS interviewees from FinCo 2 and FinCo 4 remarked that their relationship with the business was generally founded on trust

" I think that we are trusted. I'd like to think so."

which was built over time

"The confidence that I've built up with the business has been quite significant and it removes an awful lot of barriers."

creating greater job satisfaction

"the value is totally appreciated and very fulfilling."

and improving the relationships in the firm

"Everyone feels like a natural fit."

By contrast, the IS interviewees in FinCo 1 and FinCo 3 had a weaker belief in the trust of their business counterparties

"You can explain that lack of funding is down to a business decision at the highest level because they're not giving IT funding. Explaining that to the people on the ground is hard. "

Both parties found that trust was built over time and was engendered by successful interaction. One IS manager from FinCo 1 mused that their opposite number might think

"that comes down to the number of times when I've had experiences when I've approached them and they've been successful experiences, that brings the trust and that brings a level of cooperation and a level of repeat business."

The FinCo 4 Head of Business Change commented that trust was a necessity for business success,

"We have every reason to trust each other and to need that trust to be in place."

Both business and IS participants, irrespective of the firm, reflected on the bi-directional nature of trust and how it is built over time. This business manager from

FinCo 1, who is concerned about major organisational changes affecting the provision of IT to his area, commented,

> *"You can end up with a situation where everything is driven by SLAs and that isn't necessarily what you want. The personal relationship is very important. It adds a meaningful, not easily managed or quantifiable effect."*

and another business manager in FinCo 1 felt that long-standing relationships were qualitatively different and more valuable

> *"We went through a lot with two mergers in a few years. You build a history with that. It builds a very different kind of relationship. You don't have it with the people who weren't part of that. You can't really."*

For IS, building those relationships required some effort as remarked by the Head of Equity Investment IT

> *"So I meet regularly with senior managers and I think that you do learn more about each other and I think in those cases, you gain a little bit more trust. And you get a little bit more trust going from you."*

and the CIO of FinCo 2 noted that the business needed to grant trust to IS

> *"The business totally relies on the way that I dictate IT and therefore there is a trust [in me] but it hasn't been earned overnight. There is definitely a trust and I get a lot of support relating to that."*

Both communities respected the honest interaction from the other team with the business tending to have a slightly higher regard for the IS team. The business interviewees all found a readiness to own up when a problem occurred and regarded that as a helpful way of moving towards a solution, irrespective of the firm:

> *"If there's a big foul-up they will put their "hands up", absolutely."*

which was not seen as a personal issue

"Honesty is absolutely there. You know we don't see it as any individual's problem if something happens because there is always some circumstance that's made that error. "

and it was supported by helpful explanations

"Where they can't make a deadline or something, yes, they make a real effort to help us understand what the problem is and why they've, if you like "failed". They're very quick and transparent to say what's gone on and what they're doing about it."

Although the IS interviewees found that the business was mainly honest about problems

"I think, there's definitely no finger pointing"

there were occasions when business errors were still seen as technology problems, as in the case in FinCo 2 where one of the deputy CIOs commented:

"They will grumble at it, a lot. And it's just one of those things. We don't take it personally. It's their view of the technology."

Decision making by IS was generally well-regarded by the business in all the firms when they looked at investment management specific functions:

"Decision making in IT is good, when we're talking about our functional team. They are well able to argue the case for their decisions very effectively."

but the process was sometimes seen as rather opaque as remarked upon by this business manager from FinCo 3:

"I don't really understand how IT decisions are made. I think that the IT side [of decision making] is quite complicated."

The IS view of decision making in the business was much less positive with a perception that the business was often ill-disciplined in each of the firms

"That is the biggest frustration in as much as they want things delivered on time but they actually rather not really be forced to do anything in a structured form."

and even capricious

"It's simple ... they can each give an update and it makes it easier for everybody else to follow and not once have they managed it. They sit there and make things up. And then they get shirty with you when you ask if they've got an update ".

Risk-taking was quite widely discussed by the business interviewees but not by the IS participants. All interviewees stressed that the nature of the sector tended to make people fairly risk averse and that it was appropriate that IS should be reluctant to take on risky activities as noted by this business manager from FinCo 1

"I don't think they take on projects that are risky in the sense that they're unproven [implementing unproven technology] unless there's a very high level of sign-off on it."

But, having taken on an activity, the business found that IS tended to be a overly optimistic and overstate the upside risk and this was seen by the COO of FinCo 4:

"I sometimes have to challenge people. How confident are you? You said you're going to do it but how confident are you that really ... because, let's manage that risk together."

Business respondents tended to be more concerned with appropriate functional delivery rather than timeliness. This was seen more so in FinCo 2 and FinCo 4

"I'm really happy with their ability to deliver on time. Yes. Definitely can trust them to delivery according to expectations."

and where they were not able to achieve they were honest about any problems

"Trusted to deliver? Yes, When they can't they make it clear ... then that is explained."

In FinCo 1 and FinCo 3, the business understood the frustration experienced by their functional IS teams in delivering beyond their direct control

"problems come when they're depending on Group. You know then it's hard. I think that we, the business that is, get the fact that our IT team can only go so far."

IS expected the business to deliver specifications and resources for activities such as testing and spoke of frustration at the lack of engagement in each firm:

"They're not terribly good at doing those sorts of things and this is where I have to drag them kicking and screaming into it."

with little motivation

"The business will just feed into it and take from it but they won't run with it."

and discipline

"That's kind of one of the biggest challenges for me is not to wet nurse these people all the time."

Sharing goals, perspectives and sensitive information was yet another area where trust was demonstrated. In some cases, in FinCo 1 and FinCo 3, the business tended to find that IS did not share their perspective

"Not sure we look at the world the same way. I mean they're IT and we are the business."

believing that they are naturally different

"we just come at it from a really different viewpoint. I know, I just know that they sometimes think that we're just cowboys."

However, IS was generally seen to be business focused

"IT will always go out of their way to promote things for the business."

In considering the way that each team kept the other appraised of sensitive information such as an acquisition or outsourcing, in FinCo 2 and FinCo4 the business believed that IS was kept well informed and in a timely manner, as commented upon by the COO of FinCo 4:

"It's quite complex ... I think that for the Head of IT, I would say yes we do keep him in the loop because he's part of the meetings when we talk about strategy, staffing, products, moves in and out of [the location] and so on."

The CIO for FinCo 4 shared this view

"I'm naturally involved in all discussions about policy making and business meetings"

that they were normally involved

"Basically, they bring us in so that we capture the early issues and requirements from an IT perspective. So, yeah, I believe they do [involve us]".

and understood that they might occasionally be left out for commercial reasons

"If I've been excluded it's because it was a deal negotiated at midnight but I'm included the next day. It is fundamental. It is about being trusted."

However, in FinCo 1 and FinCo 3, they felt that IS was often considered as an afterthought

"From my perspective we sometimes play catch up."

or not wholly engaged

"They do involve us but it's at what level that they choose to involve us."

Trust was seen by both teams as feeling empowered in the relationship, trusted and being well-understood. Honesty and confidence in the other's capacity and intention

to deliver were important. Decision making, the approach to risk-taking and sharing perspectives were important factors in developing mutual respect. Where any of these elements were low or even absent, trust was lower.

6.6.4 Reciprocity Expectation

Reciprocity Expectation comprises mutual obligations and the level of mutual dependency that the teams enjoy and the reciprocal way that they satisfy their expectations of each other. Figure 6.12 the scores for the codes associated with reciprocity expectation.

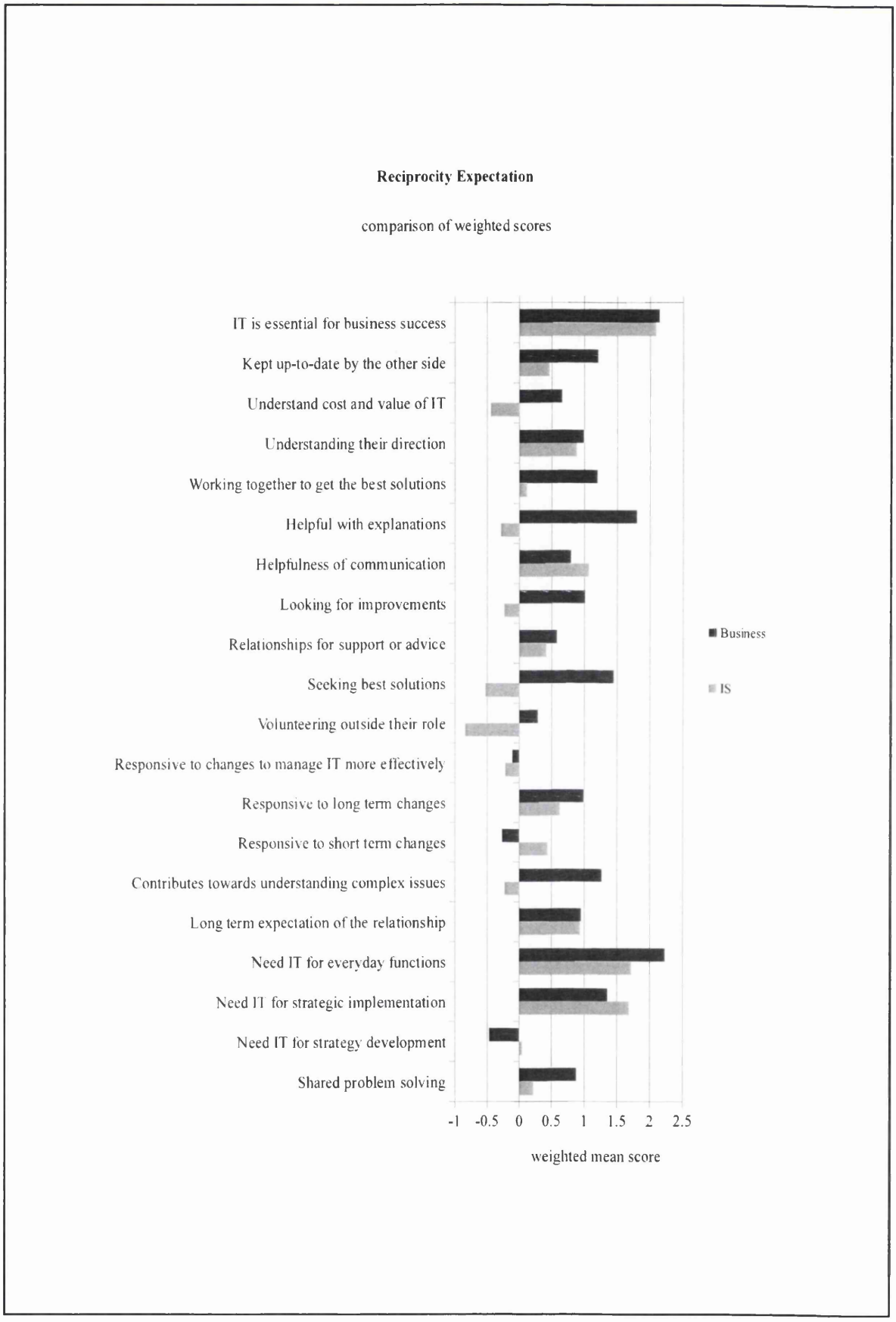

Figure 6.12 Reciprocity Expectation - comparison of mean scores between Business and IS

The need for IT to enable the business to function was recognised by all business interviewees irrespective of firm and across the different functions within those firms. Interviewees in functions such as dealing and risk management tended to have a stronger appreciation of the need for IT but even functions with lower technology needs such as marketing and distribution felt that IT was a fundamental part of the business

> *"It's absolutely essential for our every day operations. We most definitely couldn't carry on without it. It's a cornerstone really to enable us to implement our business strategy."*

and was a fundamental for success

> *"IT is completely essential for our business. Yeah. It covers everything that we do and I'm really aware of our acute dependency on it and I know we couldn't go back to the old days with people running round with bits of paper all over the place."*

The IS interviewees also saw IT as a key component in business success

> *"I think that it's recognised [by the business] that IT is a core requirement in any organisation nowadays. I think that it's fundamental to the successful running of any business."*

Considering the implementation of the business strategy, the business saw itself as the driver of those decisions, such as the COO of FinCo 4

> *"we decide on business strategy and then IT, Ops etc all need to come in behind us."*

IT was considered an essential tool in implementing the firm's strategy

> *"IT is essential so we can implement the business strategy. If we are going to take on more volumes or do things like the integrations that have gone on in the last few years, we can't do that without the IT systems."*

and is key to these implementations

"Without their delivery we wouldn't have been able to deliver over the last ... you know in 12 months we've had 5 major business changes and we couldn't have done it without them"

Business and IS tended agreed with each other's their views on the contribution that IS could make to the definition of defining business strategy. The business was clear,

"I don't look at them and go "you can give me competitive advantage".

and IS management saw it as outside the scope of their role as well,

"even though it makes me look just like a service provider, and not a thought leader, I still think IT should be an enabler."

Looking at Shared Norms above, both teams had a clear view of IS as being a service provider. Examining their expectations of reciprocity, it can be seen that an appreciation of cost and value and future direction was fairly well understood by business interviewees in each of the firms but FinCo 2 and FinCo 4 interviewees had a clearer view of the the cost and value of IT and of the future planning

" the IT team [specialists] are really valuable. They're well briefed and will often come to us with information about new systems and the like. They're really well up on the regulatory side. Very well read and seem to attend industry briefings. Sometimes we go together to seminars and things."

with a good understanding

"even if they don't know all the ins and outs, they understand all the ramifications well enough to understand what we do and what we're trying to achieve."

The business interviewees were all concerned with the commercial implications for their firms looking for

"good value for money."

where the IS team is regarded by the business in FinCo 2 as

> *"good at brokering relationships with external partners. I think that each one is chosen because it has specific skills. We maybe don't get the cheapest deal but the partner seems to get something out of it as well so we aren't always arguing about service. They really listen to what we want to spend but we understand that choosing the cheapest can come back to bite you."*

The IS interviewees in FinCo 1 and FinCo 4 believed that they were much more likely to be scrutinised for the costs that they generate rather than the value that they brought to the organisation

> *"We provide the service and the IT so that's why they would look more closely at us rather than the other way round."*

but all IS departments found difficulty in justifying expenditure to the business:

> *"It's an expense but he [the CEO] does at least acknowledge it's a necessary expense."*

with a poor impression of the business understanding of the constraints which under which IS operated.

> *"They look at it and think that it needs to be cheaper, so it needs to be more integrated."*

and no fellow-feeling or empathy for those constraints

> *"They don't understand. It's not that easy to implement, say, new networks, new server infrastructure and new operating systems. They don't understand, they don't sympathise with how long it takes."*

Unsurprisingly, IS tended have a clear view that IT is necessary to the operational running of the business, albeit with the occasional cynical remark

"They [know] they definitely can't function without IT but they look at it a bit like car insurance : I can't survive without it, I still think it's expensive, I think that most of the time it's a waste of money but actually I need it, I've got to have because I can't function without it"

which occurred irrespective of the firm

"To be brutally honest, they'd do with out it if they could but they do have an appreciation of its importance."

IS interviewees were closely aligned in their views on operational functions, and delivering strategic change and tended to have a positive view on their contribution to the implementation of the firm's strategy

"we have been incredibly successful ... in getting everything in on time and on budget and there's no way we could have done that without us [the IT function] being fit for purpose."

but were under no illusion where they stood in relation to that strategy

"IT is still regarded as a tool, a means to an end. It's a tool that's used to achieve the strategy."

Business interviewees found their IS organisations helpful, straightforward and direct whether in explaining or promoting benefits

"Our IT [specialist] team are very approachable. We can always give them a call and they are keen to be helpful."

but this helpfulness was often tempered by constraints of the way that the firm functioned in FinCo 1 and FinCo 3:

"They are generally helpful within the constraints they have to operate within."

especially where there was involvement by the parent firm

"I would say that they are on the lookout for things that are useful and we could promote into the business. But they've got their hands tied to a certain extent around the Group IT element of it. "

This was seen to be more problematical in FinCo 1 and FinCo3 where they found that the dual pronged IS organisation was difficult to navigate and that people in Group IS did not share their priorities and even saw the other side as wholly uninterested in meeting their needs, as remarked by this business manager in FinCo 1:

"Some people have very clear ideas about what they think their job description is and they will not operate outside of that. And they are very unhelpful!"

Business interviewees sometimes found that IS people, regardless of the firm, were unable to think beyond their functional silo and that made them less able to be helpful, although this was not seen as deliberately obstructive

"Sometimes they don't necessarily see outside their own function and that can make them less helpful. I don't think it's because they don't want to help. It's more that they only see things from an IT perspective and don't see the bigger picture."

The tendency to stay within the silo was commented on many occasions by business interviewees who felt that it prevented the IS team from being more engaged across the firm. In FinCo 1 and FinCo 3 this was seen as a distinct problem for the Group IS

"A lot of them are very very focused inside [Group IT] and there's all kinds of reasons why they may or may not want to help you."

but it was also believed to affect their embedded teams with them seen as reluctant to take the lead or be proactive. However, the FinCo 4 business interviewees found that their IS team made a distinct effort to be engaged

"We ran some seminars last year to talk about some new approaches and they asked to be included even though it wasn't strictly their job."

While this insularity was seen as less of a problem in FinCo 2 and FinCo 4, the business interviewees still remarked on it

> *"Stepping outside their role? No. It is a funny thing actually. IT don't run many forums themselves, do they? Or many meetings. Well they do their own meetings, like meetings with external suppliers"*

The IS team tended to find that helpfulness from the business was variable such as the experience of an IS manager in FinCo 2:

> *"Helpfulness of the business team - Some do, some don't. It's about picking your audience."*

and from FinCo 1, it depended upon the subject being regarded as important

> *"If it's not considered important enough for the business to be bothered, then no I don't find them helpful."*

and in FinCo 3, contingent on that helpfulness being explicitly in their interests

> *"They explain their world and how are things generally working or not working for them."*

Even where they were helpful,as in the case of FinCo 4, it was seen to only be in their own interest

> *"I mean they're all smart, educated people and they know that they need to be helpful. to help us understand, to help us prototype, to help us to deliver a solution for them."*

Where the business saw a direct advantage, IS saw a high level of enthusiasm. This manager from FinCo 2 remarked that a recent implementation had generated a high level of support

> *"50 % want to get engaged - I think that's an amazing percentage. They were scrambling over themselves to be involved."*

In some cases, IS found that the business tended to be reluctant to engage, especially at a senior level leaving information with more junior staff who were not empowered to make informed judgements, for example in FinCo 3:

> *"I sometimes think that the business regards us as a bit of a nuisance when we try do to do that sort of thing. In many cases the business is then represented only by lower level staff who can't really input into decisions*

and there was limited enthusiasm even in FinCo 4:

> *"I've run awareness training for various different groups but actually do they want to have more than that? Not really."*

In looking at each other's perception of responsiveness, business interviewees varied in their views. Business interviewees from FinCo 1 and FinCo 3, where the twin constraints of budget cuts and the need to implement changes driven by regulatory challenges, found that their IS counterparts were often unable to deliver short term initiatives,

> *"We often battle to get small changes put in."*

and there was no perceived appetite for improvement

> *"Improvements? Not at the moment. They're not looking for opportunities to make improvements."*

and the impact of the parent organisation

> *"Sometimes it seems to get hampered by the glue ... the need to check things out with Group or because we're contending for budget."*

Small scale changes tended to be harder to achieve than the large, strategic changes,

> *"They're quite reluctant to do what I call "mini-releases" but they will act if we can persuade them. I think it's easier for them to do their set piece launches than to do these short sharp things that are really good for the business. "*

and the IS response varied in its helpfulness

I could find somebody [from IT] and you'll get a pretty much immediate response along the lines of "I'll let you know what I can do" and you know that he's actually going to follow up not blank you.

One business interviewee held the belief that large scale change was "what they're for". In FinCo 4, they found that IS was capable across many different levels of change

"IT is pretty responsive to implementing business change ... we've got three layers : big change, medium change and small change. They [IT] do get it."

and they believed that IS was sufficiently engaged in the business to be ready for change

"IT for me should be automatically thinking about solutions before we've even talked about the problem."

No business interviewee discussed the need to implement change to enable more effective management of IT.

For the IS interviewees, they were mainly in agreement that responsiveness to change was difficult when budget was under pressure. In FinCo 2 and FinCo, there was less evidence of budget constraint. Both IS teams explained that their operating models allowed them scalability and the ability to implement small changes with low impact. In the cases of FinCo 1 and FinCo 3, governance and process often impeded small scale change

" fundamental criticisms from the business is that IT is too slow to act or react."

The IS interviewees from FinCo 2 envisaged no problems in implementing changes to enable more effective running of IS

"I don't have any problems with that kind of initiative because I am not implementing for fickle reasons."

and they were able to persuade the business of the value

"This builds us flexibility for the future and if you chuck in words like "the cost benefits are ..."

In FinCo 4 the IS management believed that the

"drivers for change are compliance, operations, front office and not really IT, Yeah, there'd be no way I could get that over the line if it were just to manage IT more effectively."

In looking at the way each team saw the way that the future direction of the firm was understood, there was little formal engagement, except at the highest level in each firm, that is, at board level. Each firm relied on the relevant manager cascading information to their teams, such as this remark from a board member of FinCo 4:

"I think that the Head of IT would say yes we do keep him in the loop because he's part of the meetings (SMT) where we talk about strategy and we talk about finance etc. Would I get that [response] from the guys below him ? Do they trust me to keep them informed? ... [long pause] I think they would. I think that's a personal thing."

In FinCo 2 and FinCo 4, there was a reasonable confidence that this information was widely shared

"I think that IT really does understand the business strategy and the future direction of the firm."

The business were happy that their specialist counterparts had good knowledge of the the industry direction and a senior fund manager in FinCo 4 noted :

"These [specialist] guys ... facing-off to the fund managers : they really are clued in and they know a lot about business trends. The other good thing is that they seem to have connections out there to other firms so we get a lot of feedback on wider trends, especially what's happening system-wise.

and the impact for their firm

"IT [specialist team] is well informed about the changes in our area."

However, there was a concern that any similar engagement outside the specialist team would be to a constantly changing team who had no underpinning knowledge of the business and the COO from FinCo 4 pointed out that:

> *"We don't have regular meetings to brief them on the business direction. I suppose we could do that but then it might be different people the next time."*

and technology led conversations was not embedded into their behaviour

> *"Do we talk about new technology or business directions. It's not something that we do that much."*

The IS interviewees were similarly varied in their responses. In FinCo 2 and FinCo 4, they were confident that they were kept up-to-date and could ask

> *"where do you want to go in the next 18 months? to make something happen ... so we can start enabling ideas and strategies."*

while feeling

> *"very comfortable with my knowledge of the direction the business is going"*

and were able to

> *"talk about the challenges they're facing and we see if IT can help them."*

although in FinCo 2, there was a concern that the poor level of technology literacy tended to lead the business to not include IS in their thinking, remarking

> *"I think there is also a level of genuine fear about some of the technology that's deployed."*

FinCo 1 and FinCo 3 managers struggled to understand anything other than the broadest sweep of the business strategy complaining

> *"We're given a steer on the strategy but that's it! There's not that much more information that comes our way"*

and

> *"We're going in that direction but nobody's told us how to get there and no-one is making the decision on how to get over the obstacles which we can see are heading our way."*

Problem solving and the contribution of the other team was raised by the business team who found IS helpful and constructive in FinCo 2 and FinCo 4 commenting

> *"They explain things in lay terms fairly well."*

and

> *"I'd say IT has a good understanding. And that allows them to make a contribution to understanding complex issues."*

and this was helped by the business having a ready knowledge of who to turn to in IS:

> *"I know all the right people internally in the organisation. That's a factor both of size that we are and the structure of the company."*

This was difficult in FinCo 1 and FinCo 3 where frustrated managers grumbled

> *"I'm trying to find out who [to talk to] and I have been passed to 5 different people."*

Equally, IS found the business unlikely to contribute towards problem solving by offering explanations

> *"Not without me going and getting it."*

but in the smaller firms they were able to engage people for problem solving where the CIO of FinCo 4 observed:

"It's not like a big firm where you see faces but can't put a name to them. It's a very social place to be so I will hear quickly that someone is having hell with a problem and I can step in."

They also saw their business having

"a good grounding, a good understanding of the technology that is there and how they can use it."

IS was seen as an enabler of business success but was not always as responsive as either it or the business desired. Size and structure tended to be impediments to mutual understanding, helpfulness and the ability to understand each other's direction or problems. Notwithstanding, the mutual need was recognised with the business view from FinCo 4 was

"There are no separate agendas. It's all open and honest and frank. I think that we've got a high level of trust here. Most definitely. That coupled with common objectives. We have every reason to trust each other and to need that trust to be in place."

and from IS in FinCo 2:

"At the end of the day they also recognise that they need us which it a really good thing as much as we need them.".

6.6.5 Collective Efficacy

Not all business interviewees shared a view on the value or reality of engaging IS in setting priorities, agreeing budgets and scheduling activities. Figure 6.13 below shows the scores associated with collective efficacy.

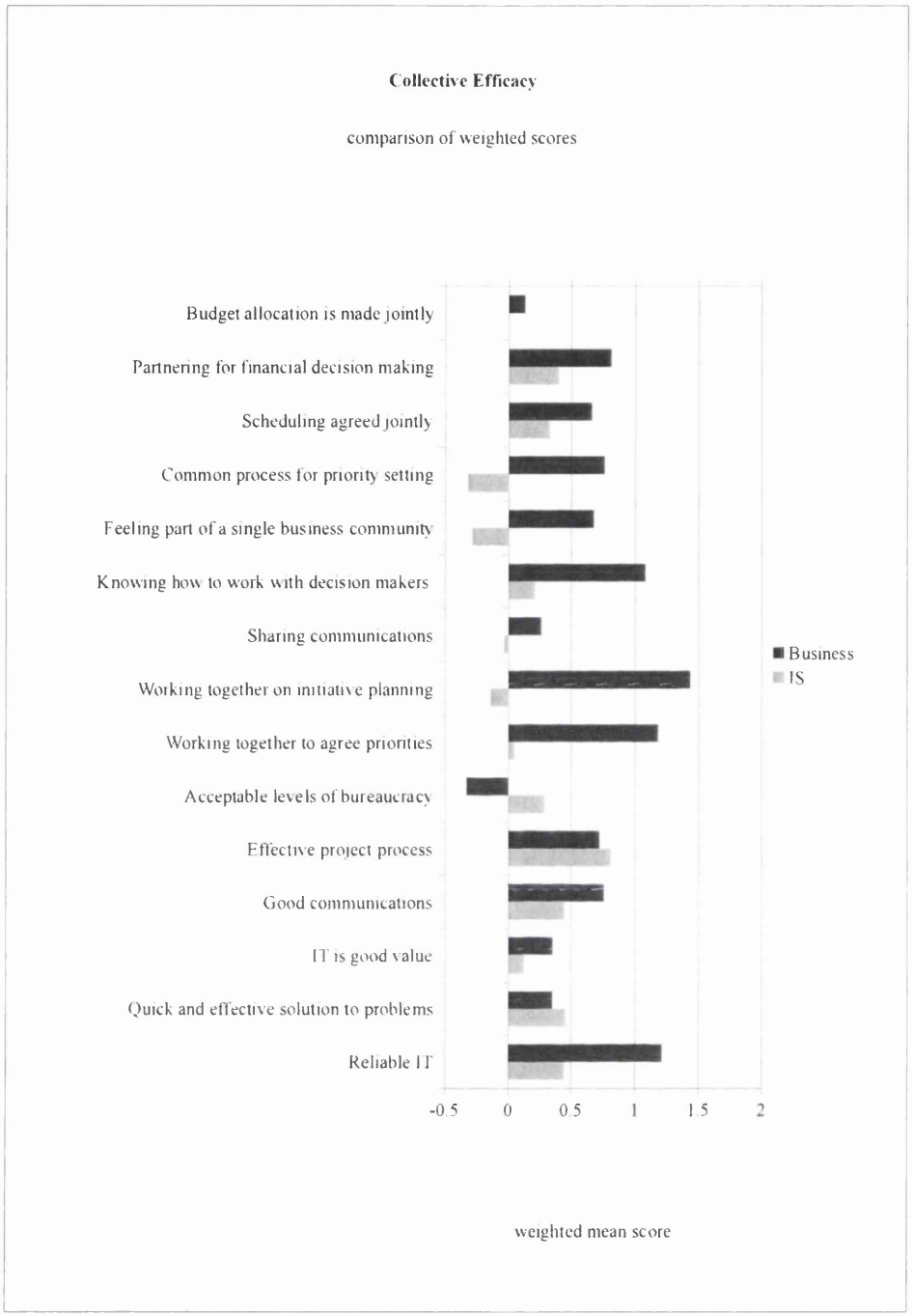

Figure 6.13 Collective Efficacy - comparison of mean scores between Business and IS

In each company, people involved in dealing, trading, research, operations, risk and compliance functions all found it beneficial to have the full participation of their IS team:

> *"Everybody who's got a seat at the table has an equal voice so there's none of this hierarchical thing. It's just, it's all open, it's all conversational."*

combined with a

> *"a positive attitude from IT whereas in the past we had always fought with IT."*

recognising the need to plan together

> *"I just think that we've got to be really careful that we don't just lose sight of actually keeping IT in the loop from Day Dot is really important so they can start to think about the impact."*

especially when considering IT investments

> *"The way that we structure our budgets ... the IT budget is very much determined by the delivery of meeting all the requirements. We do have collaborative planning."*

By contrast, those involved in functions which were less technology intensive such as marketing and distribution saw less need for IS engagement believing that

> *"Priorities are set by the business and IT inputs into that. it's very much business driving IT not IT driving business."*

However, in some cases, the need to partner was not a matter of choice or good practice with the business perceiving that there little choice but not that it was an attractive one

> *"We have no choice but to deal with them and we are their primary customer therefore everybody's got to work together."*

In other cases, the way that organisational budgeting operated meant that there were fewer specific advantages in working together noting in FinCo 1 only that

" IT comes to my team to get info about projects for the budget but we are not really involved too heavily since it doesn't come out of our budget. That's an IT budget thing."

All IS interviewees, even where the relationship with the business was difficult, tended to have a firm belief that there is real value in working together

"We should be able to have an open and direct conversation with them about priorities."

and in FinCo 2 and FinCo 4 how they can even enable collaborative working across their firms

"I can broker conversations, I can look at joint goals and benefits across business line and doing things together."

Again, for the business participants, feeling part of a single community was driven by the nature of their function and its dependence on IT and the level of their regular engagement with IS where some reflected positively

"Well, yes. We are really. Especially, the people who we work with regularly"

but for others, such as marketing and distribution, it was not built into how they felt

"Thinking about sharing a community? We have goals determined at board level that cascade down to everyone. So, I can say we only share goals in that way."

A business manager in FinCo 1 saw that the move of further functions to Group IS as a destroyer of a feeling of common purpose

"They set it up as a service centre to apply economies of scale for resourcing but the actual truth is that people start thinking how they make themselves successful in that [organisation] which is different to being part of one organisation."

This was echoed in FinCo 3 where they were fearful of the outcome

> *"I think that there is a drive to actively distance the IT department from the management side. The downside can't be quantified. It's easy to say "oh, I'm saving some money" but you've no idea what the consequences will be. You won't be able to spend money and fix it."*

In IS, there was not a uniform picture of how the participants felt about being part of the same community. Some felt no close relationship at all describing themselves purely as service providers such as this comment from FinCo 3:

> *"IT is seen in a darker light which I think is a real shame because it's a loss to the organisation if it doesn't treat it us a matching business line."*

and others felt that they were an integral part of the business, for example, in FinCo 2:

> *"I feel I work for the organisation but each one of these guys works for their specific department."*

and some had a view of themselves as managing a role that spanned their organisation, such as in FinCo 4:

> *"I'd describe my role as "transversal" - I'm serving the whole organisation."*

Business interviewees tended to have a higher opinion of the reliability of their IT than did the IS interviewees. This may be because their perceptions are different and that, since the IS team are closer to any problems, they have a greater awareness of them.

In FinCo 2 and FinCo 4, the fact that the IT provision was outsourced was not a concern for the business since they felt that where their internal IS organisation had managed those commercial relationships well and they good control over the quality provided by the external organisations

"We learnt through previous experiences where the IT partner was squeezed that we needed to get good value. I think that we have chosen top-end providers so we have good service."

with acceptable service

"Our IT is pretty resilient and the response time if things aren't working is pretty good."

but needed to manage the visibility

"I think it's control thing. I think we're good at doing it if we can see the relationship that we have to manage."

and control by not handing management responsibility to an intermediate party

"So all of our front office applications and all of our server support, we govern that and we outsource that ourselves."

However, for FinCo 1 and FinCo 3 and where FinCo 4 depended on service from the Group, the business was critical of the service

"It's not about SLAs it's about competence"

and in some cases, such as this remark from a business manager in FinCo 1, bluntly so

"We do have a very good understanding ... [laughs] ... of why it's rubbish!"

Some business interviewees expressed a level of fear of the unknown, even in FinCo 4

"IT is resilient and reliable for us, but it's is always open to technology bugs, nuances, viruses or whatever that are out of our control. I think that is the thing that always scares me with IT. It's the unknown."

In those firms receiving a service from the parent organisation, IS interviewees were equally dissatisfied as the business with the service that they received from Group IS organisations grumbling that

"Group IT manages all of our desktops and security behind and we're all frustrated with it, I wish there were other solutions."

and some parts of one organisation had started to move away from their Group IS provision where they were able and they commented

"Some of our applications are actually hosted outside of Group IT and we're the only one within the Group that actually do that. So we've kind of de-risked connectivity to Group IT that way."

In FinCo 1, FinCo 3 and FinCo 4, the business interviewees expressed frustration with the cumbersome bureaucracy needed to engage with Group IS or where it was imposed by Group IS

"Our parent organisation seems to be so many layers ... layers and layers of people. It's mega-dysfunctional really. But, ... well it's sort of outside our control."

and were exasperated by the lack of responsiveness

"We're a small part of a big company. We need to move quickly : within hours not days. Their whole set up is geared very much towards a company that can and does move slower."

coupled with the loss of control

"I like being in direct control and I'm sure that my opposite number in IT does as well but we get frustrated by the governance, we get frustrated by the rules that don't really seem to gain much advantage."

where the process was driven from inside the organisation, it was seen as acceptable and the business accepted the need to be pragmatic as the Head of Compliance from FinCo 4 remarked :

"The level of process that they've got in place is very much at the appropriate level. So, yes I think it's sensible, you know. Balanced. Not overly bureaucratic. We're certainly able to work together to agree priorities through this process."

All IS teams understood that the business found the bureaucracy irksome:

"they believe that we're too slow and too bureaucratic in our approach."

and that it was perceived to be obstructive

"It takes so long and more often than not the answer is "no, you can't have it".

and that controls are seen as bureaucratic, even when the need for safeguards is understood

"the speed of change has slowed down because we've put controls in place. But, oh god, yes, the business finds that bureaucratic."

Business participants saw projects as being initiated by themselves and mainly using IS to run the control and practical execution of those projects

"Projects start and, end with the business but it's IT that run the projects. You know ... all the projecty stuff."

The exception to this were compliance departments which occasionally ran firm wide projects that needed little IS engagement.

Once a project is approved by the business, the practical running of the project tended to move to IS, managing the project team, allocating a project manager, managing meetings and communications. There was a high dependency on IS for approval to move ahead with IS management seen in a gatekeeper role in FinCo 2:

"We decide on a project and then it has to be agreed by the head man [in IT]."

with control exercised through process in FinCo 3

" Our IT department have a project process. People from outside IT have to map onto that."

and people in FinCo 3

"Usually, when it turns into a proper project, they'll give us a project manager and there'll be lots of meetings."

with the right skills in FinCo 1

"If we get the green light, then the IT team gives us a project team and then they do all the planning."

Although the business is mainly content to hand over the process to IS they find the process frustrating

"Sometimes it feels a bit top heavy with paperwork but there's always competition for resources so it does help sort out the priorities."

and burdened with meetings and paperwork

"There seem to be lots of forms and each project has lots of meetings. Some of that is really useful so we can really decide what we want but some of it just seems to be meetings for meetings sake."

The frustration was particularly acute when the business perception was that the project was relatively small

"It seems to me that they want to apply that old heavyweight project style to something that really could be over and done with without all that aggro."

Nevertheless, they tended to find that projects were a very good at bringing together teams together to manage issues and maintain good communications.

In contrast to the business, IS believed that projects were sometimes started within IS. They saw project management as a formal and professional process, involving clear procedures to initiate and run projects. Like the business, they believed that projects tended to be run out of IS and they perceived that the business regarded that as right and proper.

"That's probably why all the project management tools and methodology is seen on the IT side."

and that, where the business ran projects, they were unlikely to have the same formal approach as commented by this IS manager in FinCo 1:

> *"I don't think that they approach project management in the same way. I don't see a business division presenting something to me and using PRINCE."*

There was limited shared perception that they worked together on planning and priority setting. The business believed that it was a more integrated and successful process than that seen by IS. The business saw partnering a valuable since they were driven by a mutual need and they saw this as symbiotic. A board member in FinCo 4 pointed to the importance of IS

> *"the participation of IT is integral to everything that we do, always has been, always will be."*

IS tended to be more cynical, especially in the larger firms and saw the business as engaging in partnering when there was little other choice.

6.7 Summary

Both teams had a clear perception that IT was essential to the business life of the firm. This was expressed more keenly by some participants than others with some IS people believing that the business saw IT "as a necessary evil" and that, if it were possible, they would manage without it. Chiefly, it was recognised that IT is a core requirement in any organisation and fundamental to the successful running of any business, even though they did not understand the costs and complexity involved.

In most cases, both the business and IS regarded IT as a core component of delivering the business strategy and believed that timely execution could not be achieved without effective IT. But none of the participants saw IT as key to the definition of business strategy. This was as true for the IS teams as for the business.

Both business and IS interviewees described the role to a greater or lesser extent as that of a "service provider", holder of a "business service" or managing a brokerage role to outsourced or group level services. In most cases neither the business nor IS

perceived that to be a problem. This was true of all companies, irrespective of whether they ran their own IT or bought in services from the group or parent level.

In all the firms, there was a lot of work put in to engage with each other, whether in formal meetings, the coffee-machine conversations or the need to create visibility to get "air-time" with the business. From the business side, there was generally a good impression of this interaction. However, this did not translate through to a belief that they were part of the same business community for the two larger firms. This lack of common feeling was echoed the business as well. In the two smaller firms, there was a much stronger feeling of being part of the same community.

The findings above indicate some of the areas where the business and IS see similarities and differences in each other's perception of their relationship. Generally IS is much more concerned about process and managing risk whereas the business finds hierarchy and process overly complicated and an impediment to moving forward.

This chapter began with a short introduction in section 6.1 and went on to offer a short description of the participant firms in section 6.2. The chapter explained the code analysis in section 6.3 and to examine the frequency of code occurrences coupled with the intensity expressed by the weighting attached to the code across the participants and the co-occurrence of themes in section 6.4. Section 6.5 explored the remarks of both sets of participants using the social capital dimensions of network relationships, shared norms, trust, reciprocity expectation and collective efficacy to understand the intensity and intent of both communities.

These findings are discussed in detail in Chapter Eight.

Chapter Seven - Quantitative Findings

7.1 Introduction

This chapter discusses the findings drawn from the supporting survey data. This data was analysed using the statistical methods discussed in Chapter Five. The chapter continues in section 7.2 begins with an examination of the correlations of questionnaire data according to the social capital framework developed in Chapter Three and maps those correlations onto that framework. Section 7.3 gives a brief description of the regression analysis on the data for the both business and IS data to examine the existence of linkages between the dimensions. The chapter continues with the detailed results of the regression analysis for business data in section 7.4 and for IS data in section 7.5. Section 7.6 continues with an analysis of the questionnaire data by each dimension in the framework: network relationships, shared norms, trust, reciprocity expectation and collective efficacy making use of the correlations within the dimensions and the frequency data. The chapter continues with section 7.7 which analyses the findings in the context of the research framework and presents modified and validated frameworks. The chapter concludes with a summary in section 7.8.

7.2 Analysis of correlations of questionnaire data by dimension

The researcher looked for associations between the statements that made up the the attributes. The data was found to be non-normal and therefore Spearman's correlation (Spearman's r) was used since it is a non-parametric measure of the strength and direction of association that exists between two variables (Lund and Lund 2013). Figure 7.1 below shows the Spearman's correlation for each of the relationships both for the business and IS respondents as they map onto the conceptual framework.

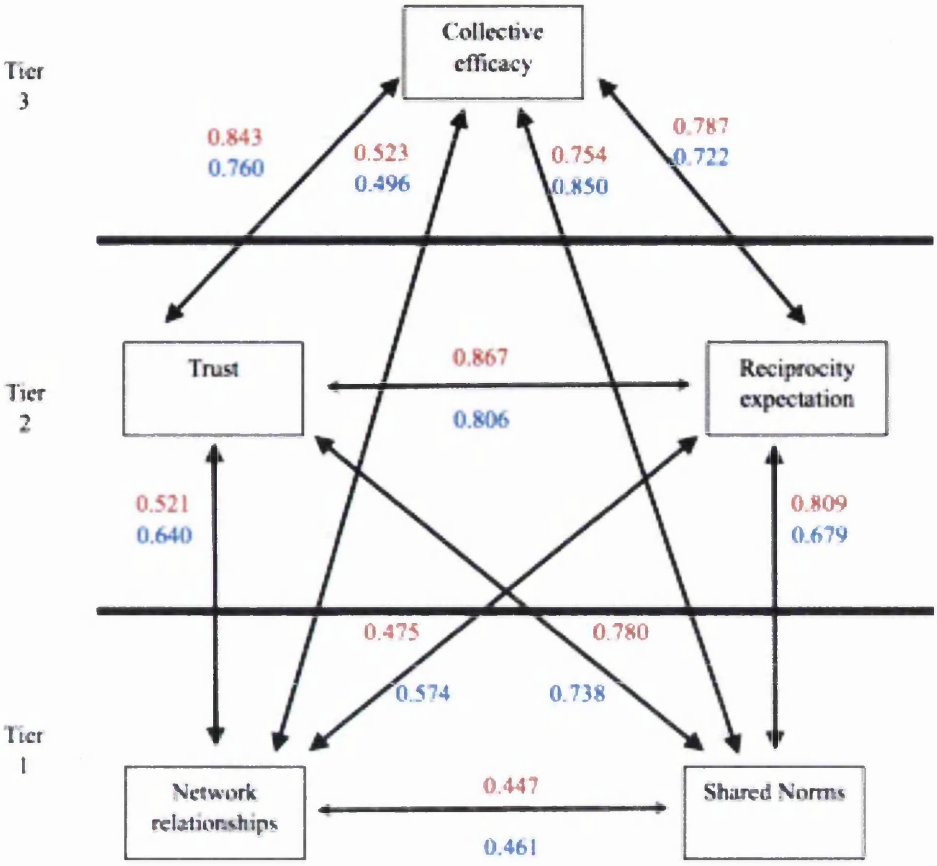

Figure 7.1 Results for IS and Business mapped to the Conceptual Framework

*Key : Business correlations are shown in **blue** and IS correlations are shown in red.*

The Spearman's correlations shown in figure 7.1 are presented below in tables 7.1 and 7.2 and are shown to demonstrate the level of consistency in the overall framework. The data was created by generating the mean for the statements in each attribute and then the mean of each attribute. All are correlated at 99% confidence. The breakdown of correlations within the dimensions is show in Appendix K.

Table 7.1 Business correlations of dimensions

Dimension	Network	Shared Norms	Trust	Reciprocity-Expectation	Collective Efficacy
Network	1				
Shared Norms	0.461	1			
Trust	0.640	0.738	1		
Reciprocity-Expectation	0.574	0.679	0.806	1	
Collective Efficacy	0.496	0.850	0.760	0.722	1

Table 7.2 IS correlations of dimensions

Dimension	Network	Shared Norms	Trust	Reciprocity-Expectation	Collective Efficacy
Network	1				
Shared Norms	0.447	1			
Trust	0.521	0.780	1		
Reciprocity-Expectation	0.475	0.809	0.867	1	
Collective Efficacy	0.523	0.754	0.843	0.787	1

Looking at the tables above, it seems that the business and IS share a view on what makes the organisation tick. They both perceive distinct linkages between having a well-understood and exercised network with the sharing of social norms, the existence of trust, reciprocal expectation and collective efficacy. Shared social norms link to trust and reciprocity expectation, that is, the anticipation of the giving and receiving of mutual benefit. Collective efficacy is highly correlated with shared norms, trust and reciprocity expectation.

As discussed in section 5.13.2, in over 90% of cases for the questionnaire statements, the distributions did not have the same shape and, therefore, in using the Mann-Whitney U test, it is possible to compare only mean ranks and not medians (Lund and Lund 2013). The output from he Mann-Whitney U test is shown in Appendix H but it is nonetheless demonstrated that the two communities are somewhat different in their perceptions.

When looking at the relationship between networks and the other dimensions there are clear and positive associations for both the business and IS. However, the picture becomes much more interesting when looked at in its entirety. Then the correlation for network relations with the other dimensions has a small range for IS (0.447 to 0.523). For the business, the network relationships with shared norms, reciprocity-expectation and collective efficacy are higher and with a slightly larger range (0.461 to 0.574) but with a difference between network relationships and trust at 0.640, compared to the same value for IS of 0.521. This appears to suggest that network relationships might play a greater part for business than for IS and that the existence of such networks may be strongly associated with the development of trust. There may be a subtly different attitude to the utility of networks between the two parts of their organisations.

The connection between networks and shared norms, networks and reciprocity-expectation, shared norms and trust, networks and collective efficacy and reciprocity-expectation and collective efficacy is more strongly expressed for the business. This is true when the correlation is very strong, for example the Spearman's r correlation coefficient for reciprocity-expectation and collective efficacy being shown to be 0.722 or where the correlation is more modest, for example, networks and collective efficacy where the Spearman's r correlation coefficient is 0.496. Linkages between the dimensions are more strongly evidenced for the IS organisation except for that between shared norms and collective efficacy where the correlation is distinctly higher for the business (0.0850) compared to that for IS (0.754). However, across all dimensions, the correlation coefficient is very high for both departments.

An area interest is where the correlation coefficient is different, that is, the correlation between networks and trust. In this case, the correlation coefficient is 0.521 for IS and 0.640 for the business. Thus it may be that the business derives greater trust from simply having and exercising a good network but for IS it appears to be linked to trust in a less compelling manner. Indeed, when correlations for networks with each of the other dimensions of social capital are examined, it seem to be the case that, for the business, these elements are strongly linked to the presence of network relationships. It would appear that the existence of such network connections is not quite enough for the IS community. However, when shared norms are considered, the experience for the IS team shifts and stronger linkages are seen to collective efficacy and reciprocity-expectation. Nonetheless, it should be noted that both correlations are significant at the 99% level.

For IS the very fact of knowing people in the other team leads to a strongly positive association with the belief that they know the person well, but this is not driven out of having either regular conversations with those people or having formal or informal conversations with them. There was no correlation between the existence of formal contacts with decision makers and informal contacts with people who use the technology provided by the respondents' functional area. IS staff both knew overall the right decision makers and could approach them to discuss projects or initiatives and how to make the most effective use of the technology.

Likewise business respondents also found that simply knowing who the relevant people were was good enough to say that they knew the people well. However, having regular conversations with the relevant people was also strongly correlated with knowing people well. Nonetheless, knowing the right people and talking to them were not significantly correlated. In this case, frequent informal contacts were significantly correlated with the existence of formal contacts with decision makers. The business respondents also found that they knew who to engage in the IS team both for projects and initiatives as well as to make effective use of their technology. In a similar way to the IS team, they found that they could approach these decision makers. Thus the data appears to show a similar pattern of perceptions between the

teams with regard to knowing who to approach, the utility of formal and informal communications and the ability to effectively access key decision makers.

7.3 Regression analysis

Having examined the correlations between the attributes and dimensions further analysis was undertaken to examine the linear regression between the different components of the conceptual framework.

In undertaking this regression analysis, it was decided to exclude the data for homophily. Homophily was included in both the *aide memoire* for the interviews and the questionnaires since social capital literature suggests that homophily would be a driver of collaborative working practices. However, neither the quantitative nor the qualitative data reflect that finding so it was decided to exclude it when creating means of data for analysis.

The conceptual framework proposes that there are tiers in social capital and this suggests that there should not be a single dependent variable in the framework if the framework was to make sense, it was necessary to explore if that was indeed the case. Thus, for completeness, the analysis started with the premise that any one dimension could be the dependent variable, that is, it could be caused by the others.

7.4 Linear Regression Results - Business

The initial analysis looked for a dependency between all the dimensions , that is, to discover if any one of the dimensions originated from a combination of the other four. The conceptual framework proposed a tiering effect and, therefore, it was anticipated that the framework would show greater consistency if analysed by tier rather than in its entirety. Table 7.3 below shows the expected pattern for the whole framework.

Table 7.3 Testing social capital tier 1, 2 and 3 - Business

Dependent variable	Independent variables	Expected regression	Regression found
NW	SN, TR, RE, CE	None	TR, RE
SN	TR, RE, CE, NW	None	CE
TR	RE, CE, NW, SN	RE, SN, NW, CE	NW
RE	CE, NW, SN, TR	TR, SN, NW, CE	NW
CE	NW, SN, TR, RE	TR, RE	SN

When the dimensions were all analysed together, that is, each dimension in turn was selected as the dependent variable, with all of the other variables as the independent variables, there was some evidence of regression found but it did not present an over all compelling picture, as anticipated by the conceptual framework. Thus it can be concluded that it is not possible to extrapolate causality for the framework as a complete entity. The detailed statistical data is shown in tables I1 - I5 in Appendix I.

The next step analysed the framework by following the conceptual framework removing each dimension in turn and re-testing with only 3 independent variables. When Collective Efficacy was removed it was possible to analyse the relationship between Tier 1 and Tier 2 and to simply retain the variables in tiers 1 and 2 : Network Relationships (NW), Shared Norms (SN), Trust (TR) and Reciprocity Expectation (RE). Table 7.4 below shows how this was approached to analyse Tier 1 to Tier 2. This analysis was undertaken to assess whether the complex relationship between Tier 1 and Tier 2 existed as suggested in the conceptual framework, that is, all the variables in Tier 1 and 2 were tested together.

Table 7.4 Removal of collective efficacy variable (CE) to test social capital tier 1 to tier 2

Dependent variable	Independent variables	Expected regression	Regression found
NW	SN, TR, RE	None	None
SN	TR, RE, NW	None	None
TR	RE, NW, SN	RE, NW, SN	RE, NW, SN
RE	NW, SN, TR	NW, SN, TR	No

Table 7.5 shows the output when trust (TR) is the dependent variable and table 7.6 shows the output when reciprocity expectation (RE) is the dependent variable.

Table 7.5 Business regression analysis Tier 1 and Tier 2- Dependent variable-Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.175	0.483		-0.361	0.720
	RE	0.325	0.139	0.326	2.346	0.024
	NW	0.209	0.099	0.235	2.121	0.040
	SN	0.409	0.125	0.401	3.272	0.002
Predictors: (Constant), NW, SN, RE			Dependent Variable: TR			
Adjusted R Square				0.705		
F	36.904		Model Significance		0.000	

Table 7.6 Business regression analysis Tier 1 and Tier 2- Dependent variable Reciprocity Expectation (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.531	0.500		1.060	0.295
	NW	0.227	0.103	0.254	2.204	0.033
	SN	0.339	0.137	0.332	2.478	0.017
	TR	0.356	0.152	0.356	2.346	0.024
Predictors: (Constant), TR, NW, SN			Dependent Variable: RE			
Adjusted R Square				0.678		
F	32.618		Model Significance		0.000	

For completeness, Network Relationships (NW) and Shared Norms (SN) were also tested as the dependent variables and no positive and significant correlations were shown in either case.

Moving on to the analysis of the relationship between Tier 2 and Tier 3, regression analysis was carried out omitting both dimensions from Tier 1 as shown in table 7.7 below.

Table 7.7 Tier 2 to 3 regression analysis

Dependent variable	Independent variables	Expected regression	Regression found
CE	TR, RE	TR, RE	TR, RE
TR	RE, CE	RE, CE	RE, CE
RE	CE, TR	CE, TR	CE, TR

Tables 7.8 and 7. 9 and 7.10 below show the detailed output for the tests described in table 7.7.

Table 7.8 Business regression analysis Tier 2 to Tier 3 - Dependent variable Collective Efficacy (CE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.433	0.477		3.002	0.004
	TR	0.422	0.141	0.473	2.998	0.005
	RE	0.300	0.141	0.337	2.132	0.039
Predictors: (Constant), TR, RE			Dependent Variable: CE			
Adjusted R Square				0.569		
F	30.660		Model Significance		0.000	

This suggests that Collective Efficacy is, indeed likely to be an outcome of the existence of both Trust and Reciprocity Expectation. However, when the dependent variable is Trust, the relationships shown are stronger as is seen in table 7.9 below.

Table 7.9 Business regression analysis Tier 2 to Tier 3 - Dependent variable Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.002	0.517		-0.003	0.998
	RE	0.525	0.122	0.526	4.321	0.000
	CE	0.409	0.136	0.365	2.998	0.005
Predictors: (Constant), CE, RE			Dependent Variable: TR			
Adjusted R Square				0.667		
F	46.157		Model Significance		0.000	

Furthermore, when the dependent variable is Reciprocity Expectation, the relationships are stronger as can be seen in table 7.10.

Table 7.10 Business regression analysis Tier 2 to Tier 3- Dependent variable Reciprocity expectation (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.878	0.525		1.674	0.101
	CE	0.319	0.150	0.284	2.132	0.039
	TR	0.577	0.133	0.575	4.321	0.000
Predictors: (Constant), TR, CE			Dependent Variable: RE			
Adjusted R Square				0.636		
F	40.377		Model Significance		0.000	

In each case, clear correlations are shown between Collective Efficacy and Trust, Collective Efficacy and Reciprocity Expectation and Trust and Reciprocity Expectation, demonstrating close linkages between tier2 and tier 3, including evidence of a feedback loop.

7.5 Linear Regression Results - IS

Turning to the findings for the IS respondents, when the dimensions were analysed together, that is, each dimension in turn was selected as the dependent variable, there was no regression found as is shown in table 7.11 below. The details are seen in tables J1 to J5 in Appendix J. The findings for IS were the same as for the Business respondents and thus it can be concluded that it is not possible to extrapolate causality for the framework as a complete entity.

Table 7.11 Testing social capital tier 1, 2 and 3 - IS

Dependent variable	Independent variables	Expected regression	Regression found
NW	SN, TR, RE, CE	None	None
SN	TR, RE, CE, NW	None	TR, RE
TR	RE, CE, NW, SN	RE, CE, NW, SN	RE, CE, SN
RE	CE, NW, SN, TR	CE, NW, SN, TR	CE, SN, TR
CE	RE, NW, SN, TR	RE, TR	RE, NW, TR

Following the same approach as was undertaken for the business, the next step analysed the framework by removing the collective efficacy dimension (CE) and the 4 remaining dimensions were analysed to assess the relationship between Tier 1 and Tier 2 as shown in table 7.12 below.

Table 7.12 Removal of collective efficacy variable (CE) to test social capital tier 1 to tier 2

Dependent variable	Independent variables	Expected regression	Regression found
NW	SN, TR, RE	None	None
SN	TR, RE, NW	None	None
TR	RE, NW, SN	RE, NW, SN	None
RE	NW, SN, TR	NW, SN, TR	None

As expected, no positive and significant correlation was shown when either Network Relationships (NW) or Shared Norms (SN) were used as the dependent variables. Unlike in the business data, there were no similar positive and significant correlations found, either by assessing Trust (TR) against Network relationships (NW) and Shared Norms (SN) or by assessing Reciprocity Expectation (RE) against Network Relationships (NW) and Shared Norms (SN). It is, therefore, not possible to draw any connection between Tier 1 and Tier 2 from this data. However, when the Tier 2 to Tier 3 relationship was examined as shown in table 7.13 below, there was a

positive and significant relationship suggesting that Tier 3, as seen in Collective Efficacy is indeed an outcome of Tier 2.

Table 7.13 - Tier 2 to 3 regression analysis

Dependent variable	Independent variables	Expected regression	Regression found
CE	TR, RE	TR, RE	TR, RE
TR	RE, CE	RE, CE	RE, CE
RE	CE, TR	CE, TR	CE, TR

The detailed output is shown in tables 7.14, 7.15 and 7.16 below.

Table 7.14 IS regression analysis Tier 2 to Tier 3 - Dependent variable Collective Efficacy (CE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.884	0.515		3.657	0.001
	TR	0.316	0.099	0.492	3.188	0.003
	RE	0.371	0.154	0.371	2.403	0.020
Predictors: (Constant), RE, TR			Dependent Variable: CE			
Adjusted R Square				0.673		
F	49.455		Model Significance		0.000	

The same findings are observed in the case of Trust (TR) as was seen in the business data :

Table 7.15 IS regression analysis Tier 2 to Tier 3 - Dependent variable Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.027	0.658		-4.598	0.000
	RE	0.853	0.183	0.548	4.665	0.000
	CE	0.584	0.183	0.374	3.188	0.003
Predictors: (Constant), RE, CE			Dependent Variable: TR			
Adjusted R Square				0.752		
F	72.109		Model Significance		0.000	

And it was also observed when Reciprocity Expectation was the dependent variable, again suggesting a feedback mechanism as seen in the business data.

Table 7.16 IS regression analysis Tier 2 to Tier 3 - Dependent variable Reciprocity Expectations (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.966	0.446		4.404	0.000
	CE	0.307	0.128	0.307	2.403	0.020
	TR	0.382	0.082	0.595	4.665	0.000
Predictors: (Constant), TR, CE			Dependent Variable: RE			
Adjusted R Square				0.730		
F	64.583		Model Significance		0.000	

Since Network relationships do not appear to be as influential in the IS data as in the business data, further analysis was undertaken to examine the dimensions excluding Network relationships. In this case the most significant relationships were found where Trust was the dependent variable and Shared Norms, Collective Efficacy and Reciprocity Expectation were the independent variables.

Table 7.17 - Expected regression excluding Network relationships

Dependent variable	Independent variables	Expected regression	Regression found
SN	TR, RE, CE	None	RE, TR
TR	RE, CE, SN	RE, CE, SN	RE, CE, SN
RE	CE, SN, TR	CE, SN, TR	CE, SN, TR
CE	RE, SN, TR	RE, SN, TR	RE, TR

The results are shown in tables 7.18, 7.19, 7.20 and 7.21 below.

Table 7.18 IS regression analysis excluding Network Relationships - Dependent variable Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.586	0.662		-5.417	0.000
	RE	0.587	0.203	0.377	2.886	0.006
	SN	0.515	0.206	0.306	2.497	0.016
	CE	0.435	0.183	0.279	2.376	0.022
Predictors: (Constant), SN, CE, RE			Dependent Variable: TR			
Adjusted R Square				0.777		
F	55.743		Model Significance		0.000	

Table 7.19 - IS regression analysis excluding Network Relationships - Dependent variable Reciprocity Expectations (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.219	0.551		2.212	0.032
	CE	0.232	0.128	0.232	1.819	0.076
	SN	0.308	0.142	0.284	2.160	0.036
	TR	0.271	0.094	0.422	2.886	0.006
Predictors: (Constant), CE, SN, TR			Dependent Variable: RE			
Adjusted R Square						0.750
F	48.120		Model Significance			0.00

Table 7.20 - IS regression analysis excluding Network Relationships - Dependent variable Collective Efficacy (CE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.488	0.623		2.390	0.021
	SN	0.189	0.168	0.175	1.124	0.267
	TR	0.261	0.110	0.407	2.376	0.022
	RE	0.301	0.166	0.302	1.819	0.076
Predictors: (Constant), SN, TR, RE			Dependent Variable: CE			
Adjusted R Square						0.675
F	33.585		Model Significance			0.00

Table 7.21 - IS regression analysis excluding Network Relationships - Dependent variable Shared Norms (SN)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.815	0.517		3.511	0.001
	TR	0.241	0.097	0.406	2.497	0.016
	RE	0.312	0.144	0.337	2.160	0.036
	CE	0.148	0.131	0.159	1.124	0.267
Predictors: (Constant), TR, RE, CE			Dependent Variable: SN			
Adjusted R Square				0.704		
F	38.314		Model Significance		0.00	

Since there is a strong and positive correlation between Network Relationships and Shared Norms as shown in figure 7.1, it would appear that there may be a different mechanism in operation for IS than for the business which will be discussed later in the chapter.

7.6 Analysis by dimension

The following analysis examines responses by both communities to the questionnaires. Correlations within dimensions are shown in Appendix K. Frequency data is discussed throughout the following sections and shown in full in Appendix L.

7.6.1 Analysis of network relationships

At the attribute level (where the statements are aggregated to give a picture of an attribute within a dimension), there is strong similarity between the views of IS and those of the business.

Network associations relate to how well the respondents believe that they know the other team, know the key influencers in the other team and have regular contact with those key influencers. Key influencers were not necessarily decision makers but they

might contribute to discussions leading to decisions, for example, how to make the most effective use of technology. Respondents were also asked whether they have formal contacts with decision makers and informal contacts with key influencers. Access to decision makers refers to knowing and accessing decision makers or influencers. Homophily describes how alike respondents see themselves with the other team through factors such as age, background and education.

For IS, access to decision makers was particularly strongly correlated with network associations (0.630) and having a level of formal and informal communications (0.588). Both teams believed that they knew the other team well. However, the business did not believe that they knew the IS team as well as the IS team believed that they knew the business (Business 80.4%, IS 97.9%) but they concurred that they knew the key influencers in the other team (Business 95.7%, IS 95.8%). However, these numbers fell markedly for business respondents when "slight agreement" is removed and is less noticeable for for the IS respondents. Knowing the key influencers in the other team dropped (Business 63%, IS 87.5%) and the belief that they knew each other well (Business 65.2%, IS 93.8%).

Looking at the mix of formal and informal communications, IS tended to believe that they had more conversations with the business than the business believed that they had with IS where regular conversations with key influencers were lower for the business (Business 79.4%, IS 98.0%), as were formal conversations between decision makers and key influencers (Business 78.2%, IS 93.8%) and the same pattern was observed for informal contact with key influencers (Business 76.1%, IS 89.7%). When the data is reduced to only include the "agree" and "strongly agree" statements, both sets of responses fall by roughly equal percentages indicating that IS still perceives that a stronger set of conversations exist.

Considering the nature of informal conversations, they shared the view that a high level of these conversations touched on business matters (Business 80.5%, IS 89.6%) in comparison those which touched on technology matters (Business 71.7%, IS 75.0%). When "slight agreement" responses are removed, both sets of data decline in a similar manner, except the perception of IS that the conversations touch on

technology matters which falls to 25.0%.

Access to decision makers is driven by knowing who those decision makers are (Business 89.%, IS 95.8%) and the ability to approach them (Business 89.2%, IS 91.7%) and both teams share a view on their knowledgeability. However, knowing those decision makers or influencers who could promote improvements or more effectiveness was distinctly different : all of the IS team respondents believed that they had this knowledge whereas the business was less certain (Business 80.4%, IS 100%).

The literature on social capital suggests that indicators of alignment can be found in the homophilous nature of the relationships : how alike are the teams in terms of age, education, locality, family background and extra-mural activities. Homophily was not significantly correlated with any other aspect of network relationships for the IS respondents. However, for the business respondents, homophily was correlated with network associations at the 0.01 level and, at the 0.05 level with access to decision makers. Drilling into the data, there is not a uniform picture for homophily.

Neither team believed that they came from predominantly the same area (Business 26.1%, IS 35.4%) and their impression of being the same age was fairly neutral (Business 52.8%, IS 52.2%). Slightly more of the business respondents believed that they shared outside interests (Business 58.7%, IS 48.0%) whereas the IS team believed more strongly in their shared family background (Business 54.4%, IS 70.9%). The main area of difference was in education where the IS team believed that they had a common education background in comparison with the business who were fairly neutral (Business 49.9%, IS 73.0%). When this was examined for the stronger levels of agreement, 56.3% of IS respondents believed that they shared an education compared with 28.3% of the business respondents. It should be remembered that these are perceptions and either could be correct or they may both be wrong. The IS team stress their perception that they have similar educational backgrounds, especially when considering professional education but in many cases the business is not aware of this and, in some cases, is dismissive of their educational

background believing that their background is likely to be wholly technical.

Looking at the overall picture for network relationships, the research is interested in these relationships if they lead to providing powerful access to decision makers and thence to making more effective decisions. Simply having the relationships just makes office interactions simpler and more comfortable. From both perspectives, access to decision makers was strongly correlated with network associations (Business 0.682, IS 0.630) and having a level of formal and informal communications (Business 0.572, IS 0.588).

There was no significant link between the range of formal and informal interaction with homophily for either community. Similarity of background suggests that these may open doors to communication for the business but not for IS. These correlations are interesting since they suggest a stronger link between knowing people, knowing who they are and sharing some common extrinsic factors for the business but not for IS where the critical linkages are through knowing people and their abilities to access resources.

Exploring this further to see if there was a different outcome if the correlations discounted those areas of homophily which do not appear to be contributors (age and locality) while retaining shared education, family background and extra-mural activities. For the business, business access to decision makers was correlated with shared educational background (0.276 not significant) which was expected since the business was fairly neutral on this element but for IS who had a very strong belief that they shared an educational background with the business, the correlation was only 0.116 and also not significant.

Sharing a family background correlated with access to decision makers for the business (0.556 significant at the 0.01 level) whereas it was not significant for IS (0.115). Similarly, having shared interests correlated well with access to decision makers for the business (0.486 significant at the 0.01 level) but there was no significant correlation for IS (0.097).

While there is much in common, there are some interesting differences in perception.

For IS it appears key that strong network associations link to access to decision makers and are not deeply enhanced by the existence of formal or informal communications with the other team nor does being alike. For the business, network associations have a distinct link with both formal and informal communications and accessing decision makers comes along with some elements of homophily.

7.6.2 Analysis of shared norms

The sharing of norms is seen in the use of beliefs, language and the understanding of the way that the organisation functions. A community of purpose is refers to a mutual understanding of what the other team does through taking an interest in their activities, having an appreciation of their function, the complexities of their operating environment and the ability to see their perspective. Processes refer to such things as planning and managing projects. A common understanding of value is built up from understanding how the activities of the other team contribute towards the the running of the organisation. In this case, they are each looking at the contribution of IS to the running of the firm from the operational to the strategic level

There was a shared perception of getting on well with each other (Business 93.5%, IS 100%). 69.6% of the business respondents believed that the IS organisation had a good understanding of the day-to-day business function and this was seen as a level of strong agreement by 45.7% of business respondents. By contrast, only 52.2% of the IS respondents had the same regard for their business counterparts' understanding and this declined to only 10.4% when the "slightly agree" responses were ruled out. In terms of a wider understanding of the operating environment (competitive and regulatory), 58.7% of the business agreed that their IS counterparts had some level of understanding with 26.1% either agreeing or strongly agreeing but this was only believed by 50.0% of the IS team and this drops to 22.9% when only the stronger levels of agreement are considered. For each sample there were some respondents who felt that the other team had a very poor understanding of the wider environment that influenced their function, that is, there was disagreement or strong disagreement (Business 10.9%, IS 14.6%).

When it came to understanding each other's language, the IS respondents felt that 81.3% of their business counterparts explained technicalities well but the business respondents were less positive with only 68.9% tending to agree. As might be expected from the frequency data, getting on well with the IS team is strongly correlated to their perception of whether the IS team has a good understanding of the business function (0.704) and of the operating environment of the business (0.772). The business team's perception of IS showed a strong correlation between IS's understanding the day-to-day activities of the business function and also the business operating environment (0.744).

For IS, getting on well with the business team was not significantly with their perception of the business team having a good understanding of the IS function (0.021) but it did correlate well to the understanding of the wider IS environment (0.450). Understanding by the business of the operating environment also correlated to an appreciation of the day-to-day reality of the IS organisation (0.663).

Examining their understanding of the contribution made to the organisation by IS, the perceived understanding of the business was weaker for each element than for that perceived by IS. The view of the contribution of IS to risk management was well understood by both teams (Business 93.5%, IS 100%). IS believed that they had a complete understanding of the contribution of email and operational services (100%) in contrast to the business perception of 67.8%. The contribution of IS to cost savings (Business 82.6%, IS 91.7%) and towards the firm's strategy was better understood by IS than the business (Business 78.2%, 97.9%). A differential in these statistics would be expected since it is reasonable to expect IS to understand their function's contribution very well whereas the business might be expected to have less of an appreciation since it is not their job.

Processes relate to the practical activities of running the business in terms of financial processes and business initiatives. The two communities appeared to be in close agreement that they shared a process for budgeting (Business 73.9, IS 72.9%) and to manage projects (Business 67.5%, IS 79.1%) but only those responses which express stronger levels of agreement are included a difference is seen: common

budgeting drops roughly equally (Business 56.5%, IS 56.3%) but their views on whether they share a process for project management is markedly different (Business 39.1%, IS 70.8%). This may be driven by a different perception of what makes a project and from whence a project arises.

Fairness and sanctions describe the way that the individual perceives that their function is treated relative to the other function, for example, in the way they are rewarded, standards of behaviour or how they are regarded by senior management. Both teams were in clear agreement on their treatment with regard to operating rules (Business 80.5%, IS 79.2%), standards (business 80.4%, IS 75.0%) and sanctions (Business 78.3%, IS 77.1%). However, when asked whether senior management had the same regard for each team, only 54.2% of business respondents and 47.8% of IS respondents gave some level of agreement with 10.9% of the business respondents and 25.0% of the IS respondents recording serious disagreement ("disagree" or "strongly disagree"). This is a very interesting result since they largely accept that they are treated equally but that does not translate into an equal appreciation of perceived value from the top management team in the organisation.

When the correlations are examined (See Appendix K, table K1), for the IS team there is no significant correlation between their understanding of their contribution to the firm with the any of the other attributes within this dimension : community of purpose (-0.088), the use of process (-0.042) and fairness and sanctions (-0.076). In contrast, the business data revealed links between their understanding of their contribution to the firm with the any of the other attributes within this dimension : community of purpose (0.577), the use of process (0.357 significant at the 0.05 level) and fairness and sanctions (0.455). No particular correlation was expected between these attributes, rather the researcher was looking to compare the results between the two samples. Since their appreciation of the the value of IS is not dramatically different but the correlations are very different, there is clearly something else at play here but, at present, there are no clues in the data. The questions asked if the respondent understood the value of IS to operational functions, risk management, security and strategy. However, it did not examine whether the respondent thought that it was a negative or positive impact. It may be that IS believes it is a positive

impact and sees no link with the other attributes in the dimension and the business believes that it is a negative impact and sees that as linked to the community of purpose, process and fairness and sanctions. This is only speculative and cannot be deduced from the data.

The results show an interesting set of perceptions. The teams appear to mainly get along well with each other and largely agree with each other that this is so although this belief is slightly stronger for IS than for the business. However, neither team has an overwhelmingly high regard for the other's knowledge of the opposite function. The business believes that the IS function understands its everyday activities reasonably well but does not have such a good regard for their understanding of the future direction or regulatory environment. Although it might be argued that at least the score or functional understanding should be a higher score since the business is largely so dependent on IS. There was broad agreement on the sharing of project and financial processes but these were not expressed at the strongest level for projects. Overall the IS functions did not find a strong understanding of the IS world by the business either in daily practicalities or at a strategic level. There were close ties in their belief that they were treated fairly and they both agreed that top management was unlikely to hold the two communities in equal regard.

7.6.3 Analysis of trust

Trust is made up of a belief in the other party's integrity, their reliability in terms of delivering, open engagement of the other party, a perception that their attitude to risk is appropriate and that trust is generated through honesty.

Belief in the integrity of the other party is made up of a complex set of variables relating to how one team believes the other team perceives them, for example, whether they believe that other team trusts them to keep them in the picture regarding future plans. Reliability is an indicator of the level of trust which the respondent sees in the delivery of the other party to do what they claim and on time. Open engagement relates to knowing how to work together, respecting each other's

arguments and sharing assumptions. Willingness to take risk is associated with respecting each other's approach to risk taking. Finally, generating and receiving trust is about perception of honesty and regard for each other, even when dealing with difficult matters.

Table J3 in Appendix J shows the correlations for both parties across the trust dimension and while individual correlations are not particularly interesting, in every case, the IS organisation sees a stronger relationships between the different attributes of the framework than do the business respondents. The areas of noticeable difference occur in their mutual views of the link between reliability and belief in the integrity of the other where the business find a much stronger link than does IS.

Value and integrity refers to the way that each team believes that the other team sees them in terms of honesty and how well they share a perspective in terms of the belief that the other party is confident that they will be kept each in touch with future plans (Business 67.4%, IS 75.0%), putting in significant effort to understand each other's perspective (Business 69.6%, IS 81.2%), the belief that they share the goals of the firm together (Business 91.3%, IS 85.4%) and that they share sensitive information (Business 69.6%, IS 72.9%)

Looking at those statements and only include "agree" and "strongly agree", a much less positive picture is observed with some responses dropping to below 50%. Examples of this are the belief that the other party is confident that they will be kept each in touch with future plans (Business 32.6%, IS 68.8%), putting in significant effort to understand each other's perspective has much less support from each community (Business 32.6%, IS 41.7%), the belief that they share the goals of the firm together (Business 67.4%, IS 64.6 %) and the belief that they share sensitive information (Business 41.3%, IS 50.0%). They largely concur with each other that they communicate well and share information and goals. with the small proviso that the IS teams believe that they go some way further to understand the perspective of the business. Again this may be driven out of the perception that they exist as service providers rather than as partners within the firm.

Reliability refers to how each team regards the other demonstrating reliable behaviour through taking responsibility for failure (Business 67.4%, IS 50.1%), delivery on schedule (Business 45.1%, IS 39.6%), functional delivery (Business 69.5%, IS 43.8%) and confidence in their decision making process Business 58.7%, IS 58.3%). Starting from a fairly poor impression of each other, this looks much worse when when only the "agree" and "strongly agree" responses are included there is a much worse perception: taking responsibility for failure (Business 41.3%, IS 33.3%,), delivery on schedule (Business 17.4%, IS 27.1%,), functional delivery (Business 21.7%, IS 22.9%,) and their decision making process (Business 28.3%, IS 25.0%). Indeed, 17.4% of business respondents disagreed or strongly disagreed that their IS counterparts could be trusted to deliver on schedule. From the IS point of view this was even worse : 25.0% of respondents disagreed or strongly disagreed that the business could be trusted to deliver on schedule and 16.7% disagreed or strongly disagreed that the business could be trusted to deliver on functionality.

Willingness to take the initiative or to take appropriate levels of risk explores the way that they see the other team behaving through their attitudes towards promoting initiatives (Business 69.6%, IS 81.2%) and towards risk (Business 47.8%, IS 64.6%). The business team was seen to be more effective at arguing their case (Business 45.6%, IS 58.4%,).

A similar pattern is seen on removing the "slightly agree" responses. Only one-third of the business respondents and less than one half of the IS respondents believed that the other team had a positive attitude towards any aspect of this attribute including promoting initiatives (Business 32.6%, IS 45.8%), towards risk (Business 32.6%, IS 45.8%). arguing their case effectively (Business 31.3%, IS 30.4%). On a marginally more positive note, there were very few negative responses in this area.

Generating and receiving trust is another area where there is a difference in perception. Although they each believe that the other team does not shy away from difficult issues and their readiness to explain to the other party why their expectations have not been met, they do not share a view on how they interact honestly by offering honest explanations (Business 71.8%, IS 60.0%), not avoiding difficult

issues (Business 63.0%, IS 60.4%) and providing explanations of why expectations have not been met (Business 54.4%, IS 52.2%).

On removal of the "slightly agree" responses, a more negative impression emerges: offering honest explanations (Business 43.5%, IS 39.6%), not avoiding difficult issues (Business 32.6%, IS 35.4%) and explanation of why expectations have not been met (Business 37.0%, IS 37.5%).The business has almost no negative responses in contrast to the IS respondents where 10.4% of the respondents did not find that the business explained things honestly and 27.1% found that no effort was made by the business to explain why expectations have not been met.

Neither team was considered to be very reliable when considering delivery on schedule with about 40% of the respondents believing that the other team did not deliver on schedule. In terms of owning up to failure and functional delivery, the business respondents tended to find their IS counterparts were decidedly more reliable than the IS team found the business. They shared a regard for the effectiveness of each other's decision making. This is a deeply negative picture of each other.

The business appears to find that IS is less engaged in risk-taking: IS is seen as less enthusiastic to promote initiatives even though they are beneficial and does not have an overwhelmingly positive attitude towards risk-taking. By contrast, IS finds the business has a more healthy attitude towards risk, enthusiastically embracing beneficial initiatives. Again the business is perceived as prosecuting their case more effectively than their IS counterparts. Looking back at decision-making, they shared a respect for each other's decision making process so it appears not to be a factor of the process but rather of their persuasiveness.

Both teams show a relatively low regard for the honest interaction of their counterparts. The IS organisation is rated more highly by the business than the business is regarded by IS when considering the level of honest interaction. The negative perception of the IS respondents when considering if their business counterparts take time to revisit a problem or to "close the loop".

However, in the looking at the strength of feeling, the business tends to hold the IS organisation in much higher regard when considering honesty and integrity.

7.6.4 Analysis of reciprocity expectation

Correlations for the two groups (Appendix K, table K4) are quite closely aligned with the most noticeable differences being observed in the link between having a shared understanding of value and the receipt of reciprocal benefits (Business 0.542, IS 0.644) and between having a shared understanding of value and the observed general helpfulness of the other team (Business 0.621, IS 0.731). Following on from this, the link between the observed general helpfulness of the other team the receipt of reciprocal benefits was stronger for IS (Business 0.538, IS 0.673).

Shared understanding of value relates to the way that the two communities regard the importance and value of IS to the activities of the firm and whether it is essential to everyday operations (Business 97.8%, IS 100%), to implementing the business strategy (Business 97.8%, IS 100%) and to defining the business strategy (Business 76.1%, IS 90.6%). Very few of these responses fall into the "slightly agree" category, except in the case of the business respondents' view of the ability of IS to contribute to the definition of business strategy where only 60.9% were in clear agreement and, indeed, 13.0% were in clear disagreement.

Benefits or services received in the long or short term relate to the fulfillment of obligations to each other which may not produce either a short term or transactional benefit but is premised on the basis of assistance or co-operation leading to a long term benefit. Each team perceives responsiveness in the other party through to the need to implement changes to improve short term value (Business 65.2%, IS 87.5%), to create long term or strategic value (Business 87.0%, IS 87.6%), to allow the firm to manage IS more effectively (Business 77.1%, IS 57.4%). Reciprocity is further seen seen by taking responsibility for ensuring the other team is kept in the loop, even if it is *post hoc* (Business 60.9%, IS 83.3%) and the ability to contribute to resolving complex problems (Business 55.3% IS 68.8%,).

Again, a clear and disproportionate fall is seen in the positivity of the responses to some statements when the "slightly agree" responses are removed. Responding to the need to implement changes to create long term or strategic value fell by nearly a half for the business but not for the IS respondents (Business 45.7%, IS 70.8%). Responding to promote more effective management of IS also showed a sharp drop for the business but not for the IS respondents (Business 43.5%, IS 50.0%). Taking responsibility for keeping the other team in the loop drops for the business to almost a half whereas IS has a strong belief in their commitment to this (Business 32.6%, IS 68.8%) and the ability to contribute to resolving complex problems also declines (Business 45.7%, IS 47.9%).

They share a view of each other when looking at long term initiatives, the big strategic projects which aim to move the firm forward in the long term. When it comes to short term value creation, the IS respondents found the business much more focused on these initiatives than they were perceived by the business. Similarly, the IS team did not find the business as responsive to their attempts to improve the management of IS as the business found the IS team.

General helpfulness looks at how members of one group step outside their prescribed role, how opportunities are sought to make improvements or find the best solutions. Overall their perceptions of each other's helpfulness was fairly homogenous by looking for opportunities to make improvements (Business 71.7%, IS 79.2%), getting involved in activities outside their strict role (Business 67.4%, IS 60.5%), explaining how to make the best use of something (Business 82.6%, IS 73.4%) and looking for opportunities to help the other team achieve the best outcome (Business 78.2%, IS 64.7%).

Looking at how strong that agreement is, a rather different picture is seen if the "slightly agree" responses are removed. Seeking opportunities to make improvements dropped by approximately the same amount for both communities and showed a less optimistic picture (Business 39.1%, IS 41.7%). Explaining how to make the best use of something saw the IS team staying more positive about the business than the business were about IS (Business 54.3%, IS 64.6%). Similarly,

looking for opportunities to help the other team achieve the best outcome showed a more positive result for IS (Business 45.7%, IS 45.8%). In very few cases, the business reported a perception of disagreement or strong disagreement with any of these statements unlike the IS respondents of whom 10.4% found that the other team did not look to find the best outcome and 18.8% recorded that the business team were unlikely to volunteer to engage outside their group.

Convergent interests identify where the two parts of the organisation perceive a mutual dependency recognising that reliable IS is essential for the achievement of business goals (Business 97.8%, IS 93.8%), that when problems occur the teams work together (Business 84.8%, IS 85.4%), that IS keeps the business abreast of technology directions (Business 74.0%, IS 89.6%) and understanding the other team's future direction (Business 65.2%, IS 62.6%).

There is a consistently strong picture when looking at the need for robust IS to enable the delivery of business goals with most respondents either agreeing or strongly agreeing. This need does not necessarily percolate through to working together to solve problems. At the stronger levels of agreement concerning working together to solve problems, the IS response is much stronger than that from the business (Business 50.0%, IS 62.5%). There was broad agreement that each team understood the other team's future direction with a similar pattern of agreement and a very low level of disagreement.

The perception of IS keeping the business abreast of new technology directions has a much lower level of "agree" and "strongly agree" responses (Business 37.0%, IS 56.3%). This is a particularly low score which is deepened when considering that 15.2% of the business respondents either disagreed or strongly disagreed that they were kept in touch with new technology directions.

Responses for the two groups are very similar for their perception of working together requiring reliable IS and collaborative problem solving. However, when considering the attempts of the IS side to keep their business counterparts up-to-date with technology advances that affect their business, the IS organisation believes that

they are doing a fairly comprehensive job which is not shared to the same degree by the business.

With such small samples, the difference between their views on everyday operations and implementation of the business strategy represents a single response and so they can be regarded as having a strong mutual appreciation of the contribution of IS to the successful operation of the firm. However, when considering the importance of IS in defining a new strategic direction of the firm, there is a noticeable difference. Neither sample sees IS as significant in this respect as their perception for running the firm but it is much less important to the business respondents and, for some, it is wholly irrelevant.

The business tended to find the IS organisation to be more helpful than the IS organisation found the business with the exception of looking for opportunities to make improvements. This links back to the previous finding where the business did not find the IS organisation as focused on short term solutions as they were themselves. Neither team found the other overwhelmingly keen to step outside the confines of their every day role. The business found the IS very helpful in explaining how to make the best use of a tool or piece of technology whereas IS found the business less helpful in explaining exactly how they would make use of a similar artifact.

7.6.5 Analysis of collective efficacy

In most cases the correlations for the two group are very similar. They both see a strong link between superior, reliable performance and group partnering when considering major decisions. They both perceive a less strong link between superior performance and accessing organisational financial power. However, the business sees a strong link between superior and reliable performance and accessing organisational financial power whereas the IS respondents saw that link as less compelling.

In an organisation with strong alignment, there will be a drive to work together to make the most effective use of resources. Largely, there is a positive view on this aspect of alignment which is seen by working together, transparently by seeing themselves as part of a single community (Business 84.8%, IS 85.5%), knowing how to work with each other (Business 76.1%, IS 93.8%), working together to plan initiatives (Business 71.8%, IS 77.0%), working together to agree priorities (Business 76.1%, IS 89.6%), using common processes to set priorities (Business 67.3%, IS 79.2%) and sharing communications (Business 67.4%, IS 85.4%).

However, when stripping out the "slightly agree" responses a different picture emerges. The business responses are roughly the same, that is, they fall by about one third uniformly but the IS team retains a resolutely more optimistic view of being part of a single community (Business 47.8%, IS 72.9%), having the knowledge to work together (Business 50.0%, IS 77.1%), joint planning of initiatives (Business 37.0%, IS 56.3%), joint agreement of priorities (Business 50.0%, IS 64.6%), setting priorities using a shared process (Business 43.5%, IS 60.4%) and communicating together (Business 26.1%, IS 50.0%). 10.9% of business respondents disagreed or disagreed strongly that priorities were set using a joint process.

An organisation may be well aligned in its intentions but if this does not translate into effective action then the alignment dissolves into just well-meant intentions. In order to make those actions real, it is necessary to tap into financial power, allowing budget and time to be allocated. Access to financial power is seen through joint decision making on scheduling (Business 78.3%, IS 87.5%), the importance of partnering to make effective decisions for IS investments (Business 87.0%, IS 100%) and joint decision making to agree budget allocation (Business 65.2%, IS 77.2%).

Excluding the "slightly agree" responses a different picture emerges. Both team wholeheartedly endorse the view that partnering for decision making is necessary but this does not translate into the making of those decisions. The IS responses fall uniformly by about one third but the business team hold a much less positive view with their perception of joint decision making on scheduling falling to 32.6% and

joint decision making on budget allocation dropping to 28.3%. Neither team evinced either disagreement or strong disagreement.

Perceptions of superior performance is evidenced through reliability of the technology (Business 71.8%, IS 70.9%), the ability to recover quickly from problems (Business 91.3%, IS 70.8%), an effective project process bringing together all stakeholders (Business 67.5%, IS 77.2%) and a well-understood set of processes without unnecessary bureaucracy (Business 52.1%, IS 62.6%). Again, removing the "slightly agree" responses, their shared opinions on the reliability of the technology remains the same (Business 47.8%, IS 52.1%) as do their views on resilience (Business 63.0%, IS 58.3%). However, they diverge on the existence of an effective project process (Business 21.7%, IS 47.9%). They each express frustration at the level of bureaucracy involved in their processes with only 21.7% of the business respondents and 33.3% of the IS respondents either agreeing or strongly agreeing. Disagreement or strong disagreement was expressed by 19.6% of the business respondents and 12.5% of the IS respondents.

The two communities shared a view on the reliability of their technology but in other respects they were quite different in their responses. All organisations encounter problems and it is how they manage recovery from those problems indicates organisational resilience. The business found that the organisation had workarounds and tools to enable a speedy recovery to a much greater extent than did the IS respondents. When looking at their impression of each other when considering projects, process and communications, IS tends to find that process is effective, projects are well run and and communications ensure that everyone is well informed in contrast with the business who tend to have a much gloomier view on each of these attributes.

While they certainly tend to agree that they are part of a single business community, the reality of implementing the way that community functions suggest that there is less mutual understanding. Again, the IS team have a more favourable view on the way that they work together to make plans and agree priorities. The IS respondents have faith in their ability to work together and share process and communications.

The business respondents are less sanguine throughout. It is interesting to see that the business respondents are fairly consistent in their views on all aspects of this attribute without the spikes of optimism experienced by the IS respondents.

While there is wholehearted agreement on the need for partnership, this does not play out in reality with the business again believing that there is less collaboration to decide on the scheduling of projects and initiatives and the way that this is achieved through budget allocation.

7.7 Integrated findings

The Conceptual Framework proposed a relationship between the tiers of social capital where a network of relationships and shared norms set the preconditions for the development of trust and the exchange of mutual obligations. In turn, it was proposed that these would lead to the development of collective efficacy, that is, the organisation would be in alignment and would achieve collectively. This section integrates the qualitative and quantitative findings.

Social capital literature suggests that homophily may be a source of enduring social capital (Burt 2000). The key elements of homophily for Burt were gender and age. Shipilov and Danis (2005) expand this to include a shared level of education, socio-economic standing, career paths, status and group orientation. Gender was not explored in this study since almost all the participants were male. Metrics of homophily were sought in the perceived similarity in age, background, education and the sharing of interests in the questionnaire. Interviewees were asked for their opinion on the existence of homophily. During the interviews, many participants pointed to their similarity to people in their own group, as expected from the literature, but almost never indicated any deep-rooted similarity with the other group. They tended to dismiss any superficial similarity as simply a social lubricant. In talking about whether they saw any similarity in shared external interests, this was not seen as a source of common ground although a number of the business interviewees remarked on a shared interest in sport as an ice-breaker. This was much less discussed by the IS participants. In both cases, it was common for them to discount there being any advantage in perceived homophily. Burt (2000) found that

relationships tended to decay less between homophilous groups but the interviews saw no evidence of the longevity of relationships between the groups being created by similarities. Neither set of findings supports the proposition that these are a source of social capital. Rather, interviewees tended to point to the value of diversity in creating a positive relationship, frequently commenting that they shared a similar span of ages but often found there was no common background or education since they often came from different cultures. There was no evidence to support the case of homophily as an influencing factor in either creating or sustaining relationships.

Shipilov and Danis (2005) argued for shared career paths as a source of social capital and Burt (2000) found secondary findings that path dependency tended to lessen the rate of decay in relations between colleagues where a previous relationship had existed. Both of these findings were seen in the interviews, especially from the business participants. Evidence from the interviews concurs with Shipilov and Danis's (2005) findings that a shared and familiar career background was regarded as important. Burt's findings (2000) were also seen for the business interviewees pointing to a clear difference in the relationship where they had shared experiences with their IS counterparts especially where it was a strong relationship that had been created in a prior incarnation of the organisation and tested through a transformational experience such as integration activities or high profile projects. Business participants often referred to those relationships as being key mediators in helping them to negotiate newer structures where they were perceived as more complex and bureaucratic.

Burt (2000) also found that age and stability created a level of embeddedness which maintained relationships and lessened decay rates. Age did not appear to be significant in either set of findings and the ability to examine stability was limited since each of the firms had gone through a period of turbulence within recent years. Thus this study does not provide any evidence to support the value of homophily on either the creation or maintenance of social capital. However, it provides support for the existence and maintenance of social capital created by building on pre-existing relationships even though such relationships might be difficult to sustain in firms going through dramatic change.

Given that homophily was not found to be a significant contributor to social capital in the context of this study, it was removed from the examination of the correlations between the dimensions for both communities.

Turning to the business findings, in the context of the conceptual framework, the study looked for evidence to suggests that Tier 1 dimensions give rise to Tier 2 dimensions and so on. In the case of the business, looking at whether network relationships lead to trust and reciprocity-expectation, creating the right mix and intensity of formal and informal contacts, accessing decision makers and clarity of each other's role all appeared to lead to good levels of trust with the longevity of the relationship being important to embed higher levels of trust and expectations of mutual obligations. Where this was not in evidence, for example, in the case of the relationships with the Group IS organisations, there was generally a poor level of trust in terms of sharing information and meeting delivery and almost no expectation of a mutual exchange of benefits.

Shared norms evidenced as beliefs, common understanding of what creates value, narratives and processes were often seen to be less relevant for the business with their strong perception of IS as a purely service organisation. Without the effect of bonding, linking and bridging (Ghosh and Scott 2009) developed through shared norms, trust, identification and knowledge-sharing are less likely to grow. The business tended to see that these commonalities were not very important since their over-riding impression was that IS was not a partner in key business relationships. These relationships are shown in figure 7.2 below.

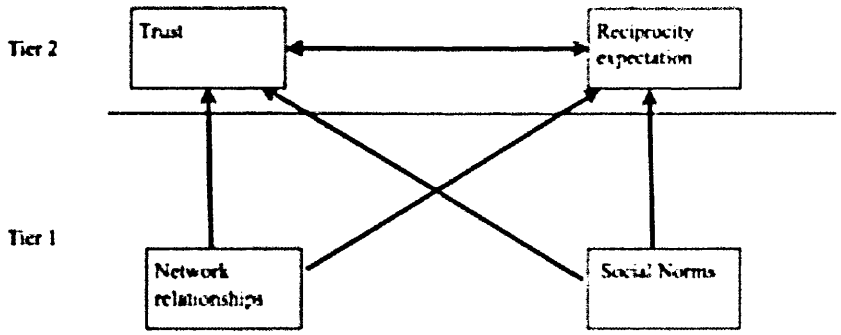

Figure 7.2 Business Tier 1 to Tier 2 social capital linkages

Examining the generation of collective efficacy, that is, working together in partnership to create superior performance for the firm, there is a joint recognition that partnering to agree priorities and scheduling is valuable. Although the business has reservations, finding that process equates to unwieldy and obscure bureaucracy, it recognises the value of group obligations (Collier 1998; Snijders 1999) and that in an enduring relationship this can lead to the development of generalised norms of co-operation, which may lead to an increase in the willingness of participants to engage in social exchange (Putnam 1993). This may, in turn, generate a level of group or collectively owned social capital (Oh *et al.* 2006). Where the business sees a good level of alignment, partnering is seen as a source of successful joint enterprise with trust and reciprocity expectation leading to collective efficacy, and in turn, collective efficacy and reciprocity expectation promoting trust, and collective efficacy and trust generate reciprocity expectation as shown in figure 7.3 below:

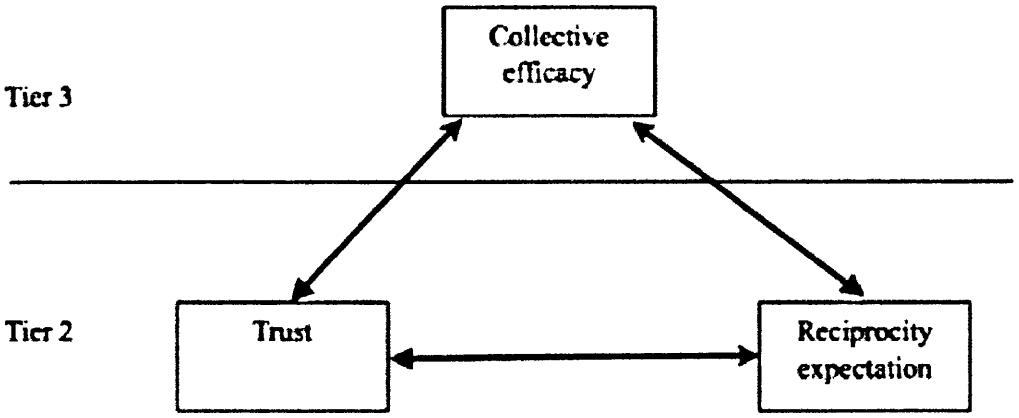

Figure 7.3 Business Tier 2 to Tier 3 social capital linkages

Moving to the findings for the IS respondents, a different picture emerges. As with the business, when the whole framework was analysed as a single entity, no relationship was found so it is not possible to extrapolate any causality for the framework as a whole. This was anticipated since the researcher was seeking evidence of the development of social capital through the tiers. However, when the same approach was taken as for the business respondents, that is, to remove Tier 3 (collective efficacy), the same result did not emerge. Setting aside the linkages between Tier 1 and Tier 2 and simply looking at the relationship between Tier 2 to Tier 3, it appears that the relationships are very similar to those shown in the data from the business respondents so that we see that when trust and reciprocity expectation exist, collective efficacy is the outcome and there is a similar feedback mechanism across those dimensions which is illustrated in figure 7.4 below:

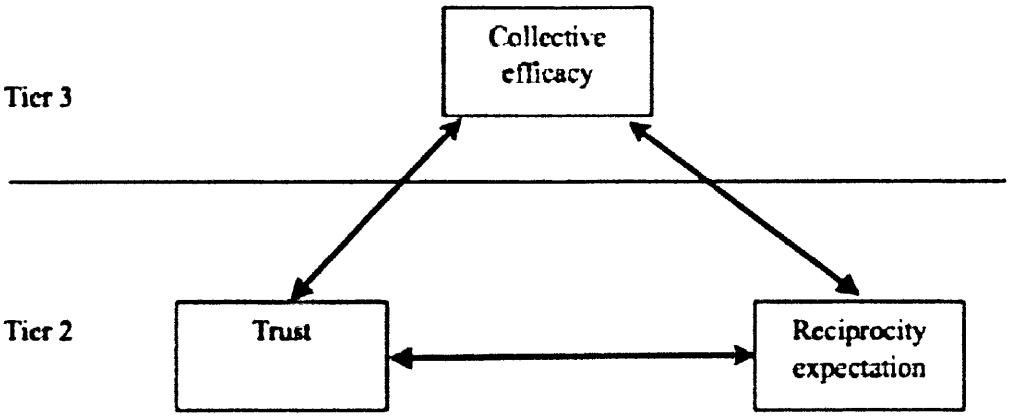

Figure 7.4 IS Tier 2 to Tier 3 social capital linkages

However, this left the connections between Tier 1 and Tier 2 in the framework without any clear explanation. Neither the survey data nor the interview data showed the same pattern of behaviour for IS as for the business. Analysis of the dimensions in the lower tiers did not reveal the same linkages as appeared for the business. There are some apparent contradictions in the IS findings. While the IS participants recognise their position as a service provider, in many cases stressing that is the true nature of their role, they have much higher expectations of engagement by the business to create shared obligations. They place as greater value on shared norms appearing to see that they are an important indicator of belonging to the same firm. Business participants often drew a distinction between themselves and IS. While conceding that specialist staff in roles such as business analysis were more like them in terms of their background, career paths and education, their perception of the wider IS community was that it was wholly different, even to the extent of suggesting that the IS function was likely to attract people with different inter-personal skills. Where business participants place stress on difference, in the smaller firms IS participants tended to believe that they were more like the business, often emphasising their similarities. In these cases, we see the IS organisation asserting their convergence with their organisation whether it be in their shared education, sharing perspectives and sensitive information or attempting to build networks.

Institutional theory (Avgerou 2000; Baptista *et al.* 2010) when applied to IS organisations suggests that IS professionals see themselves more as part of a professional group that may be pan-organisational, where they have more in common with people holding similar positions in other organisations than they do with their peers inside their organisations. This was seen in the larger firms where some IS participants saw themselves as having more in common with either their peers in other parts of the parent company or in outside firms. It is worthy of note that the business tended, even in the smaller firms, to favour this institutional view of IS as something apart and separate. The business has a clear perception of its relationship with IS as transactional and this is also expressed by IS which might be expected if it sees IS solely as a service provider. Nonetheless the IS community frequently expresses frustration with the failure of the business to be sufficiently helpful and to appreciate the IS perspective and priorities while having low expectations that the business will be able to contribute to improve the role and understanding of IS. The IS organisation seems to expect a deeper and higher quality relationship while, at the same time, expecting little reciprocation from the business. Network relationships appear not to yield the expected benefits for IS whereas, selective network relationships were of great value to the business. This ambivalence by the IS community prompted the researcher to further unpack the data for IS.

They share a view that each other is appropriately focused on long term initiatives and large projects which are believed to move the firm along its strategic path. When it comes to short term value creation, the IS respondents found the business much more focused on these initiatives than *vice versa*. Similarly, the IS team did not find the business responsive to, or even aware of attempts to improve management of IT. Perhaps these results are not surprising since neither team could be blamed for being more focused on their own needs. However, they have an almost identical regard for their opposite number's perception of the creation of long term value which may derive from a number of factors such as the orientation of the firm, the way that goals are assigned and the deployment of budget between discretionary and mandatory spend.

The two groups have very similar perceptions of elements of collective efficacy such as collaborative problem solving. However, the areas of reciprocity expectation are problematical, for example, IS considers its attempts to keep the business well informed about technology advances which may relate to the business, to be adequate while this view is not held to the same degree by the business. Each side tends to assert that the other does not have a sufficiently strong understanding of their function. The business puts that down to the innate differences between the teams. IS struggles with their perception of a poor level of IT literacy and knowledge by the business but seems to be partly reconciled to that ignorance and unable to do anything about it. IS believes that they are the major contributors when thinking about promoting shared beliefs, an understanding of the operating environment.

The qualitative data showed a number of differences in perception and these emerged in the quantitative data as well. Since regression analysis of all five dimensions did not reveal any insights into the part played by social capital nor did the corresponding analysis of the Tier 1 to Tier 2 relationships, eventually, the researcher reduced the number of variables being analysed down to 4 and then 3. Each of the five dimensions was analysed as the dependent variable and then the framework was reassessed with that variable discarded. Adding this complexity, forced the researcher to abandon preconceptions of how the mechanism might work. Whereas the business followed the expected framework, in the case of IS, a closer examination of the relationship between trust and reciprocity expectation was undertaken. In this case, there appears to be a feedback loop between the two dimensions since the relationship is present in the quantitative data irrespective of the choice of either as the dependent variable. Following this process of selecting each of the dimensions as both the dependent and discarded variable, it emerged that the "problem" area was with the network relationships. This was deeply counter-intuitive since it would be expected that network relationships were fundamental to the development of social capital. However, removal of the network relationships dimension, resolved the problem shown in the regression analysis. Tier 1, only represented as shared norms, appeared to give rise to Tier 2 in the same way as was seen for the business. However, when Tier 2 and Tier 3 were analysed together as if they were a single tier,

collective efficacy appeared to create a mediating effect. Thus the picture shown in Figure 7.4 above becomes richer and more complex. Greater trust arises when driven by shared shared norms and so does reciprocity expectation. Reciprocity expectation also promotes higher levels of trust, as does collective efficacy. The framework proposed that collective efficacy would be the outcome of both trust and reciprocity expectation but the data suggests that trust is the natural outcome of mutual obligations and working in partnership to achieve goals. Looking more deeply into the interview data, there is evidence that the IS community experiences a much lower level of trust in their business counterparts than vice versa. Generally they have a poor opinion of the business's trustworthiness in terms of reliability (Collier 1998) and openness (Ouchi 1981). Moving on to the generation of collective efficacy, that is, working together in partnership to create superior performance for the firm, the business sees it as a reasonably successful joint enterprise but IS was less enthusiastic.

However, where they have positive experiences of effective collaboration and an exchange of benefits and convergent interests, they are prepared to have a greater belief in the trustworthiness of the business. Where the relationship was mediated by collective efficacy, trust appears to be the ultimate outcome unlike that shown in the case of the business as is shown in figure 7.5 below.

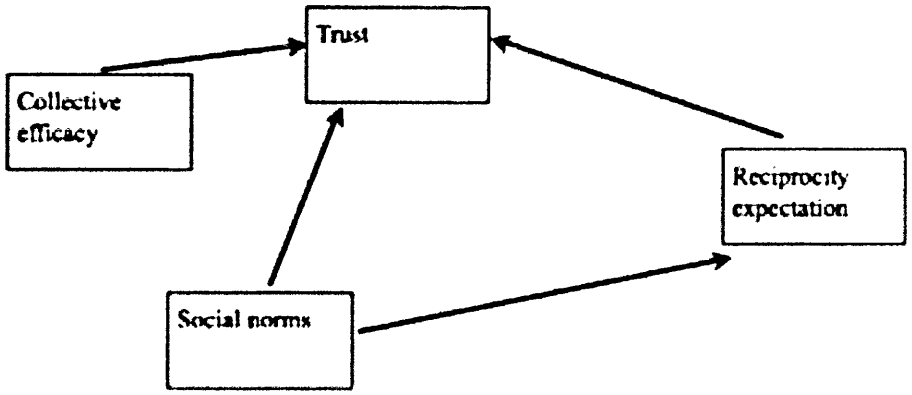

Figure 7.5 IS relationships excluding network relationships

This leaves the problem of the apparently irrelevant dimension of network relationships. It is clearly illogical to allege that network relationships play no part in the framework since they would not be able to function at all without knowing people so it is necessary to look for another explanation. While network relationships did not appear to influence any relationship at all, nonetheless there does exist a positive correlation between network relationships and shared norms in the quantitative data and in the interviewees, IS saw a utilitarian benefit in knowing and accessing decision makers and the ability to work together through regular interaction. Network relationships were valuable because they gave the interviewee clarity of access rather than deepening the social capital by strengthening their shared experience.

In the interviews, both business and IS interviewees found the ability to access long-standing relationships valuable although this was more important to the business participants who often referred to the value of those long-standing relationships in enabling them to access organisational structures which they saw as complex and overly bureaucratic. For IS, there was also clear value in building long-term relationships, knowing decision makers and influencers but only as a means of enabling people to do their job. Burt (1992) suggests that communication is much more than the simple transmission of information at a single point in time. He talks

of information benefits which broaden and deepen social capital as access, timing, and referrals. "Access" is the simplest form of information benefit where an actor receives information and passes on to the relevant person. More complex brokerage occurs at the levels of timing, and referrals. "Timing", rather than timeliness, enables actors in the network to provide information sooner than would be possible to people outside that network. "Referral" describes the flow around the network which deepens the understanding of other, more remote, actors. If communication and information flow only satisfies the first criterion of access then the next steps may not be achieved and the development of trust as an "expectational asset" (Knez and Camerer 1994) may be overlooked. Whereas the business saw it as a means of building bridging social capital, IS saw it in instrumental terms only and it did not appear to add to their stock of trust. For example, when considering communications, inter-group communications were recognised as important and valuable by both communities, especially the business. For the business communications is seen as a bridging activity leading to a deepening quality of the relationship enabling broader access, sharper timing and deeper referral. But for IS, it is simply a way of telling the other team about events and changes while having greater expectations of access, timing and referral. This ambivalence leads IS to often hold two sets of conflicting expectations of the relationship : they say that they are service providers but appear to yearn for another, deeper partnership. Szulanski (1996) identifies this ambivalence as an obstruction where resistance to the dissemination of knowledge throughout an organisation may lead to a failure to optimise timing and referrals.

Setting the findings in the context of the conceptual framework, it can be seen that alignment is far more than the two teams getting on at an acceptable level. It goes beyond the goodwill discussed by Adler and Kwon (2002). Network relationships are more important to the business than to IS and are critical to their ability to work effectively with IS. Where there is poor clarity of roles and responsibilities in IS, the business depends on network relations to guide them through that complexity often falling back on the long-standing connections even if they are not the most appropriate people to help. Portes (1998) explains that simply because a formal network link exists it will not necessarily be be used and beneficial social capital

effects may not be realised. These benefits need to be regularly reinvigorated through social exchange (Bourdieu 1986; Granovetter 1992) and without such effort they will tend to go unused and fall into disuse. IS placed greater emphasis on the more formal and structural aspects of their relationship.

Seeing the world similarly by sharing domain knowledge experiences and narratives promotes trust and an anticipation of reciprocity. The absence of these shared experiences led to poor expectations of reliability, delivery and responsiveness. For the business, belief in the reliability, openness and integrity of the IS team existed alongside the development of convergent interests, shared benefits and helpfulness and fed back into each other and onward to an understanding of how they needed to partner with IS to achieve the firm's goals. The business perceived IS as the natural home of process and expected the management of process to fall within the remit of IS. Where alignment worked well through good clarity of roles and responsibility, belief in the reliability and integrity and convergent interests, process was seen as generally beneficial, albeit that they would rather do without the constraints of any process at all. Such norms of co-operation may establish "expectations that bind" (Kramer and Goldman 1995) which may, in turn, have a positive impact on reciprocity expectation. Where the business found the organisation confusing and responsibilities obscure, with a failure to share perspectives and a mutual dependency there was a failure to build on trust and reciprocity expectation. This created poor expectations of partnering mired in bureaucracy and sub-optimal decision making for prioritisation, scheduling and budget allocation.

For IS there is often a low expectation that a well-developed network will give rise to any meaningful level of alignment. Szulanski (1996) found that a poor level of general sociability between the parties produced a resistance to the transfer of knowledge and information but this does not seem to trouble the IS community and they do not see particular value in relationships that do not advance the activities of the firm, so place greater stress on the benefit of more formal meetings and engagement and the structural aspects of their relationship.

IS participants tended to have poor expectations of IT literacy from the business at anything other than a functional level, that is, they have sufficient skills to enable them to do their jobs adequately. In order to make an effective contribution to decisions about IT investments they need to be counselled, guided or even directed. IS expects the business to only engage in conversations about the business and to have no interest in the efficient running of IT despite the significant budget allocated to the function. Even where there is a higher level of partnering, IS still expects the business to have a poor understanding of how IT contributes to the business. However, where they have overcome mutual misunderstanding and IS has taken on a more commercial and business facing role, it appears that this leads to a much higher level of trust, working together in partnership to create superior performance and expectations of mutual obligations, reciprocity and convergence.

Revised frameworks are shown overleaf in figure 7.6 for the business and in figure 7.7 for IS :

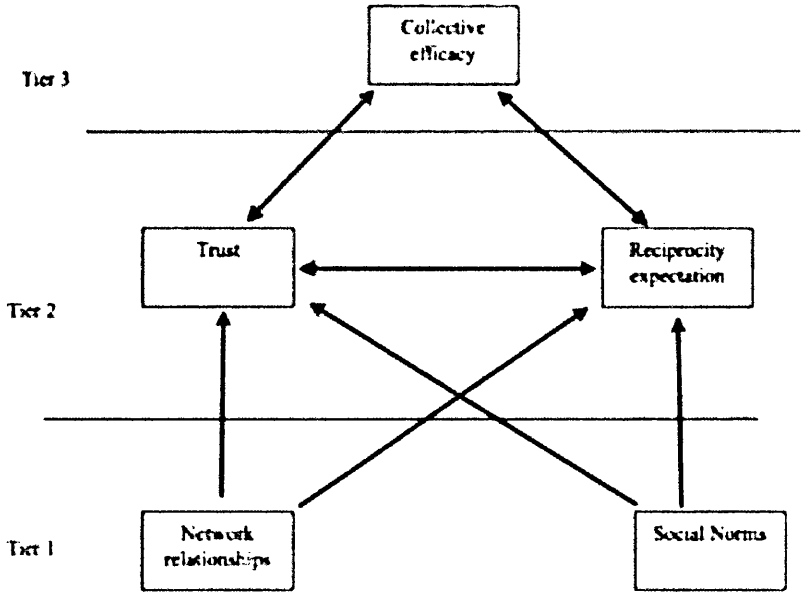

Figure 7.6 Revised business Framework

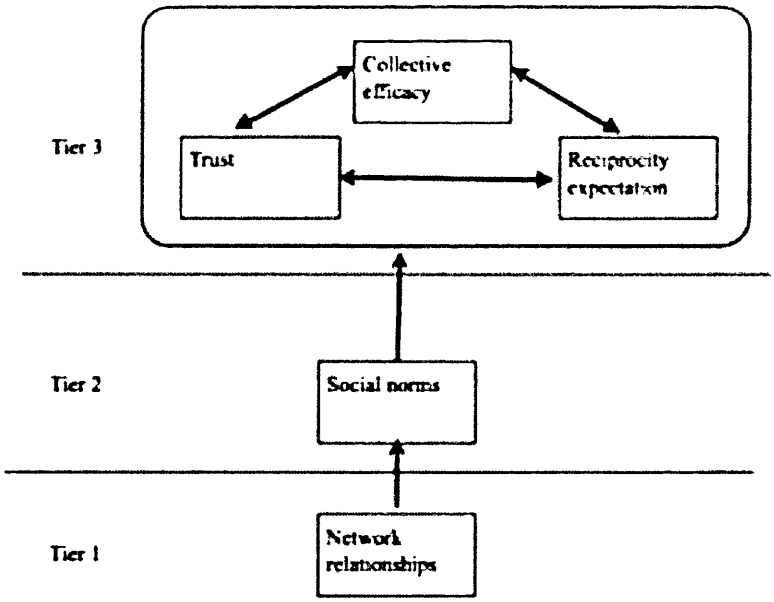

Figure 7.7 Revised IS Framework

7.8 Summary

This chapter has presented the detailed findings of the analysis of the questionnaire data. The chapter began with an introduction to the findings in section 7.1 and continued with an examination of the correlations against to the social capital framework in section 7.2. Section 7.3 offered a short description of the regression analysis carried out on the on the business and IS data. The detailed results of that regression analysis for business data were discussed in section 7.4 and for IS data in section 7.5. An analysis of the questionnaire data for each dimension in the conceptual framework was presented in section 7.6 exploring the correlations which were found within each dimension and the detail to be found in the frequency data. The chapter continued with section 7.7 analysing the findings in the context of the conceptual framework and presents modified and validated frameworks. In many ways the relationship is asymmetrical and the need for alignment only goes in a single direction. There is little belief that the contribution of IT is as a part of the whole organisation. This asymmetry was revealed in the difference between the responses of the two communities to the questionnaires. In the light of this, modified frameworks were presented.

This chapter found that the proposed positive correlations between the dimensions were indeed present for the business respondents but a different mechanism may operate for IS. The data suggest that networks are less strongly correlated with the other dimensions than anticipated which may suggest that, while they are a necessary precondition for the development of social capital, the genuine level of alignment which creates collective efficacy or superior performance, is found in the transformational tier, that is the combination of trust, shared norms and reciprocity expectation. These findings are discussed in detail in the next chapter.

Chapter Eight - Discussion

8.1 Introduction

This study began with an exploration of the perceived alignment divide between the business and IS function and then considered that relationship through the perspective of social capital. Alignment has been widely covered in the literature whether the writers are concerned with performance outcomes, configuration, planning, process, IT as a source of competitive advantage, misunderstanding and the division between business and IS functions. The issue of alignment continues to be recognised as a matter of concern by practitioners.

In Chapter Three, a tiered approach to social capital was proposed with Tier 1, the input tier comprising networks and shared norms. Network relationships were regarded as a fundamental building block of social capital but insufficient on its own to create the greatest value. Similarly, shared norms were proposed as creating the conditions where superior performance could be created. Trust and reciprocity-expectations were conceived as Tier 2 or the transformational tier, that is, once groups both knew each other and shared a base of knowledge, process and norms, they would be equipped to build bridging social capital (Burt 1992, 1997; Granovetter 1973; Knoke 1999) and they would extend trust and mutual obligations to the other team. The transformational tier was suggested as creating the right conditions for the organisation to become much more powerfully effective and would lead to Tier 3 where alignment between the two organisations would lead to a higher level of collective efficacy. A positive experience leading to a highly effective outcome might, in turn, lead to improved networks, greater sharing of norms, trust and the building of even further expectations of the fulfillment of mutual obligations.

The study draws together the concepts of business-IT alignment and social capital into a theoretical framework proposing the presence of social capital as a critical

underpinning for the creation of alignment and, hence, superior performance. The research framework proposed the existence of tiering in social capital, that is networks and norms create a fundamental layer that goes on to create a transformational layer comprising trust and reciprocity expectation and this, in turn leads to collective efficacy. This tiering was used to develop an approach to the empirical study which took the form of case studies. This fieldwork examined four investment management firms with thirty-five interviews of business and IT representatives of senior managers and was supported by a survey exploring their attitudes towards each other.

The findings from the case studies provide empirical evidence of the dimensionality of social capital and its impact on alignment. In this discussion, the results of the study will be examined in the light of its fit with both the existing literature and the research gaps and its practical and theoretical implications.

This chapter continues with section 8.2 with reflections on the findings with regard to the review of current literature. Section 8.3 discusses the theoretical contribution of this study, and section 8.4 reviews the implications of the study for practitioners. The chapter concludes with a summary in section 8.5.

8.2 Reflection on the findings in the light of the literature review

The Literature Review examined the debate on strategic alignment with particular focus on performance outcomes (Cragg *et al.* 2002; Croteau and Raymond 2004; Karahanna and Preston 2013; Pennings 1998; Sabherwal and Chan 2001), how configuration may advance or inhibit alignment through structure and reporting lines (Schmidt and Buxmann 2011; Versteeg and Bouwman 2006; Xue *et al.* 2008), maturity (Earl 1994; Galliers and Sutherland 1991; Karimi *et al.*2000), planning (Cumps *et al.* 2009; Kearns and Lederer 2004) or process (Kearns and Sabherwal 2006; Ouakouak and Mbengue 2012), whether IT is a source of competitive advantage (Baker *et al.* 2009; Carr 2003;), problems of mutual

misunderstanding (Khandelwal 2001; Willcoxson and Chatham 2004) and the boundary between business and IT (Valorinta 2011; van den Hooff and de Winter 2011).

In the literature concerned with alignment there is a widely held view that alignment is a valuable goal and many studies demonstrate its benefits in firm performance (Bergeron *et al.* 2004; Byrd *et al.* 2006; Cragg *et al.* 2002; Croteau and Raymond 2004; Karahanna and Preston 2013; Pennings 1998; Sabherwal and Chan 2001) and observe the negative effect of its absence (Neirotti and Paolucci 2007). While this study does not seek to establish a link between alignment and financial performance through analysis of key financial data such as return on equity, there was a widespread view from both business and IT participants that IT is an essential component for running their businesses and that it is a fundamental to business success. Baker *et al.* (2009, p.3) point to the problem that "the degree of alignment has traditionally been measured as an end state" and so any measurement of performance impact can only be a snapshot. Where their study goes on to view this through a process perspective, this study provides an alternative perspective exploring the impact on performance through the social capital mechanisms that are pre-conditions for alignment so that superior performance might result.

Carr (2003) argues that it is no longer feasible to see IT as a source of competitive advantage and that IT managers should focus in making IT robust and reliable and leave the business of competitive advantage to the business. In this study, there was observed a strongly held perception in both the qualitative and quantitative findings that IT is not a source of competitive advantage *per se* in this sector. This view was held by both the business and IT. Some interviewees drew a comparison between their firms and those which use technology to differentiate themselves from their competitors either in the provision of service to their customers, for example, banks with no high street presence or platform providers such as Fidessa which develop products or services. While stating a clear view that they saw no competitive advantage in their deployment of IT, most respondents nonetheless saw IT as an integral part of their operation and essential to the delivery of their

strategy. However, it was not a significant contributor to the conceptualisation of that strategy and, from the business side, there was not a strong belief in the need to engage IT in the definition of the business strategy. Senior management was likely to follow the argument advanced by Carr (2003) and regard IT as simply a commoditised service which could be provided by any equally skilled provider. In a single case, a business participant suggested that IT could give shape to the business strategy but this was unusual in that the participant was both a senior manager and a sophisticated user of complex IT systems.

Baker *et al.* (2009, p.27) suggest that while "technology itself may not be a source of competitive advantage, the dynamic capability to sustain alignment between IT strategy and business strategy is a source of competitive advantage". In many cases, IT is needed to contribute to the execution of the strategy and successful execution is dependent on the engagement of IT early in the process. If IT is not involved early, then it may be forced to make sub-optimal decisions regarding deployment and capacity. There is evidence from the two smaller participant firms that IT is a contributor to competitive advantage by setting out to create a dynamic capability as discussed by Baker *et al.* (2009) whether it is in their sourcing strategy allowing them to grow the scale of the business or in their deliberate resourcing strategy which has allowed them to distance themselves from traditional IT skills and to focus on specific hybrid skills that are both functionally investment management specific and commercial. Nonetheless, it is interesting to note that none of the respondents in these IT departments saw themselves as contributors to the strategy in this way and went out of their way to stress that strategy setting was not in their remit. However, it is clear that they are able to respond to the needs of their businesses through the way that those IT organisations have deliberately set out to deploy their IT architecture. For example, in the case of FinCo 4, the intention from the parent firm was to use as much of the centrally provided services as possible. However, once it became clear that this would lock FinCo 4 into complex, slow and costly governance, the IT organisation made important business decisions to buy their most significant business process (portfolio management) as a managed service. That fact that the

IT management does not see that as a strategic decision does not make it less of one. Moreover, IT management would not be equipped to make that decision without having a deep understanding of the direction of the business and board-level support. It would not be feasible for IT to make this a unilateral decision. Sponsorship and engagement of senior management is essential to see through decisions of that magnitude.

This study demonstrates that, while the participants generally believe that they get on well with each other, there is nonetheless a level of misunderstanding and miscommunication in their relationship, irrespective of whether the firms are large or small. This is consistent with the discussion in the literature where misunderstanding of the other's function and of their knowledge was frequently seen to be a problem (Khandelwal 2001; van den Hooff and de Winter 2011). Both the qualitative and quantitative findings indicate that, in the larger firms, there is a higher level of mutual misunderstanding. Neither team believes that the other team generally understands their business or the competitive, commercial or regulatory environment, except in a few instances where IS staff have specific business-focused knowledge. The business finds the focus of the IS function on the fine detail of technology and security frustrating and blinkered and bemoans the failure of much of IS to have a good appreciation of the reality of the business both functionally and commercially. The opposite position is a more troubling issue for the IS community. The lack of general IS awareness both at a detailed functional level and at a wider environmental level means that IS finds it difficult to explain the implications of business decisions on IS, for example, in terms of implementation times, cost and value. The study showed evidence of the difference in perceptions of value created by IT/IS which were observed by Chang (2006), Willcoxson and Chatham (2004) and Tallon (2007). Although each side finds this an impediment to the relationship neither side seems motivated to change to close the knowledge gap. To some extent, IS participants even appear to be reconciled to a poor level of IT awareness and literacy in the business while complaining about it.

There was no evidence to suggest that the maturity of a firm as advanced by Earl (1994), Galliers and Sutherland (1991) and Peppard and Breu (2003) promoted greater alignment. Greater process was associated with more complex firm structures, thus it was seen in those firms where there was a complex oversight provided by the parent firm but not with greater alignment. These findings are consistent with those of Karimi *et al.* (2000) who found that the nature of governance structures was driven by the relative sophistication of IS management within a firm rather the overall process maturity of that firm. The findings contradict the classical view of maturity and bear out the assertion by Knights *et al.* (1997) that organisational maturity is not homogenous.

The literature on engagement in the strategic planning process suggests that engagement activities improves the relationship from both sides (Kearns and Sabherwal 2006; Peak *et al.* 2005; Xue *et al.* 2008). Establishing a set of rules to improve alignment and performance, Cumps *et al.* (2009) saw a need to integrate business and IT planning, to build IS performance management and reward into the budget, with the prioritisation of major IT expenditure according to its contribution to the business strategy and the need to have clear business ownership and sponsorship for all IT projects. Competition for resources forced all the participant firms to engage in a prioritisation process and to undertake a certain level of shared planning but there was less enthusiasm for linking IS reward to overall performance. Executive sponsorship for the strategic planning process was evident in the smaller firms, notably when there was no influence from a parent company. Business sponsorship was rare for initiatives emerging from the Group for any activity which did not appear to offer direct benefit to the business unit. The findings concur with those of Kearns and Lederer (2004) on the way that firms approach their dependence on IT for the delivery of core business functions, the participation and inclusion of IS in business planning, the alignment of the IT plan with the business plan and the necessary use of IT for the execution of the business strategy. Each of the firms had been through disruptions either as the result of a takeover, spin-off, management buy-out or merger and all recognised the necessity of IT for the achievement of new operating models,

integrations or consolidations. However, their approaches varied from the highly engaged and integrated approach taken by FinCo 4 to the rigidly enforced formality seen in FinCo 1. Kearns and Lederer (2004) suggest that a pragmatic and adaptive approach mixing formal and informal IT planning methods are most appropriate in uncertain, turbulent environments for information intense businesses. Following their interpretation, it would appear that firms which attempt to follow a prescriptive approach to planning would struggle to achieve the right level of engagement and performance when they operate in unsettled, information-driven competitive environments. This was certainly seen in the case of FinCo 1 where the inflexible approach has led to disillusion with process and a perception that the organisation is hidebound and doomed to fail to deliver in a timely and effective manner.

Caution was urged by Ouakouak and Mbengue (2012) who found that simple engagement in the strategic planning process was insufficient without the mediating effect of a comparable level of strategic alignment of employees. This was borne out by the findings of this study where process was seen as a useful way to ensure that decisions were made in an orderly fashion allowing the setting of priorities and scheduling to take place but was often seen as weighty and a source of unnecessary red tape rather than as a way of bringing the teams together, even where the teams tended to believe that they had a good level of alignment. However, where there were individuals or teams located in IS who were perceived to be more aligned, they were seen to be valuable builders of alignment or boundary spanners (Valorinta 2011).

When considering the impact of reporting lines, none of the CIOs reported in a clean, unequivocal structure between themselves and the CEO. In the two larger firms the CIO reported to an intermediate manager who sat on the board or its equivalent structure as suggested by Valorinta (2011). In the two smaller firms, the CIO sat on the board but appeared to have a lower level status and reported to the COO for practical and HR purposes, thus confirming the "not quite equal" status consistent with how well the participants believed that the IS function was regarded. In each of the firms, there was evidence of the division into "business

domains" and "areas of accountability" when facing the business (Schmidt and Buxmann 2011; Versteeg and Bouwman 2006). Where IS centric fora existed as discussed by Agarwal and Sambamurthy (2009), they focused on IT needs and decision making to avoid cluttering up other executive council and board meetings with decisions that were perceived to be less important and highly technical.

The findings of this study tend to support the main body of literature, especially the more recent studies which have seen alignment as a more complex phenomenon frequently subject to nuances of environment and size of organisation. However, a perception of alignment was harder to achieve in the larger and organisationally complex firms where process was seen as a contributor to misalignment and failure to deliver.

8.3 Contribution to theory

In addressing the question of theory and business and IS alignment, Baker *et al.* (2009) point to the work of Chan and Reich (2007) suggesting that the study of alignment has largely focused on practical implications and outcomes rather than whether any all-encompassing theories or frameworks could be applied. This belief in the absence of theory overlooks the pragmatic contributions of writers who have addressed the value of configuration, planning and process to a wider understanding of alignment. Indeed, Baker *et al.* (2009), went on to search for insights into alignment through the use of a strategic planning process. Nonetheless, this study has taken a different approach to the understanding of alignment and proposes that organisation are too variable in intent, size and structure to enable any all encompassing theory to be applied through process, planning, configuration or governance. Instead, the study approaches alignment as a social construct and contributes to theory about alignment by revealing the differences between the perception of the business and IS communities.

Chapter Two identified the gaps in the alignment literature noting specifically in 2.13.4 that there was a gap in the understanding of the boundary between business and IS functions. Section 2.13.3 also noted that there was little study of the issue in financial services organisations. These two gaps set the context for this study and led to the development of the conceptual framework.

8.3.1 Misunderstanding

Writers have looked at the problem of the IS function as an institution which has its own professional expertise, norms and codes which may inhibit the development of alignment (Avgerou 2000). Khandelwal (2001), van den Hooff and de Winter (2011) and Willcoxson and Chatham (2004) all observed difficulties of communications, sharing objectives and mutual regard. Van den Hooff and de Winter (2011) find a source of the problem in the IS organisation seeing itself as part of a wide IS community, outside the firm with which it has more commonality.

This study observed that IS managers had very low expectations of IT literacy from the business at every level. Often, the business only had adequate IT skills to enable them to do their jobs but had no understanding of the value which IT did or could create in their firms. The business had no appreciation of future technology directions and little grasp of the complexity of deployment or security. Correspondingly, the business found IS largely wanting in its appreciation of the business strategy and market direction. IS was seen as unlikely to be able to communicate its needs and constraints in a way that was meaningful to senior business decision makers which left significant IT investment decisions deferred to sub-committees. In this sector, this was compounded by the perception of the IS function wholly as a service provider where the business had expectations of the behaviour and knowledge of service providers that was not shared by their IS counterparts.

Examining the detail of misalignment, participants within each firm frequently identified similarity to people in their own group and with little similarity with the other group. This points to a clear gap in their understanding of each other and sets up an expectation of an absence of commonality. In the IS teams, there was evidence of an ambiguous attitude where they identified themselves as part of a wider professional IS cadre but still alleged greater commonality with the business than that experienced by the business.

The conceptual framework sought to examine the underlying issues of alignment in the context of this gap in the literature by examining their perspectives on the components of social capital and by identifying the presence or absence of social capital. While other writers have identified that misunderstanding exists between the communities, this study has addressed this as an absence of social capital rather than as simply an issue of institutional differences.

8.3.2 Relational embeddedness

Social capital was clearly built where relationships were developed over time, that is, they become embedded. In this study, relational embeddedness was seen through two sources : the existence of a shared history within the same

organisation, especially where it has gone through major organisational transformations and the sharing of a career path, even when it was not in the same firm.

This embeddedness facilitated the deeper information benefits of access, referrals and timing described by Burt (1992) which were difficult to create in either new or transient relationships.

Business managers saw great benefit in these embedded relationships but their IS counterparts found them less important. This suggests another difference in views which may reinforce the boundaries between the two communities.

8.3.3 Utility of network relationships

The findings demonstrated that network relationships lead to trust where there is the right mix of formal and informal contacts giving access to decision makers and clarity of roles and organisational structures in the IS team appeared to lead to higher levels of trust of the business community. Where this did not exist, for example, where there was opacity in the roles and responsibilities in the IS team, then a poor level of trust tended to been seen illustrated by low levels of information sharing with little expectation of reciprocity expectation.

Another difference in perception was seen in the way that the two communities regarded the value of network relationships. Szulanski (1996) identified resistance to the transfer of knowledge and information where the was a poor level of general sociability. The business community had a higher expectation of the value of a well-developed network than did their IS counterparts. This did not seem a matter of much concern to the IS community and they did not see particular value in relationships that did not advance the activities of the firm and thus placed greater emphasis on formal engagement. For the IS communities, networks tended to be valuable instrumental channels for the communication of information with no anticipation that they were creating an "expectational asset" (Knez and Camerer 1994). The business found the building of such relationships a utility in

their own right not just as an information conduit but also a circuit to be enlivened for, as yet, unspecified future benefits.

The value of network relationships as a dimension of social capital is seen in this study as a source of understanding the differences between business and IS communities in creating alignment.

8.3.4 Norms of cooperation

Sharing domain knowledge tends to promote trust and thence expectation of reciprocity. Where domain knowledge is not shared, there are poor expectations of reliability, delivery, helpfulness and engagement.

The development of convergent interests with shared benefits and helpfulness promotes partnering to achieve the firm's goals. Norms of cooperation are created which tend to establish "expectations that bind" (Kramer and Goldman 1995), that is, a feedback loop develops where trust, reciprocity expectation and collective efficacy impact each other. Where there is an absence of such convergent interests, shared benefits, helpfulness and partnering, the two communities have low expectations of reciprocity. Poor expectations of successful partnering were reinforced by complex governance and decision making.

Even where a higher level of partnering occur, IS still has a low expectation of the business team's understanding of the contribution of IT/IS, although all business managers concede that their business would not be able to continue without it. Where IS has become more business facing, the business reflects positively on this convergence but still does not expect to gain a higher level of IT knowledge.

Differences in the perception of how to engage norms of cooperation provides a further insight into alignment and addresses the gap identified in the literature.

8.3.5 Financial services

As noted in section 2.13.3, there is relatively little study of alignment in financial services and this study complements recent industry research (CoreData Research

2012 and Sullivan 2012) which examined the problems encountered by investment managers.

8.3.6 Other literature gaps

Section 2.13 also identified gaps in the literature relating to the use of a rational-adaptive approach to governance (Kearns and Lederer 2000) and the ability of flexible IS organisations to withstand disruptive and turbulent environments (Navarra, 2005).

This study did not set out to examine those gaps in detail, but the following observations are made:

1) rigid governance appears to stifle decision-making but it appears to be harder to create adaptive governance in large and complex firms

2) flexible organisations may indeed help firms adapt to changing environments but are unlikely to be sufficiently pliable to survive overwhelming changes over which the firm or sub-unit has no control.

8.3.7 The use of social capital

In using social capital as an tool for the analysis of alignment, this study takes a novel approach. Social capital is widely used in development studies and in not for profit organisations but it has been less widely applied in commercial contexts. It has been used to a limited extent in previous work on alignment, for example, van den Hooff and de Winter (2011) looked at the application of social capital concepts to a subset of the business and IS relationship, that is, how knowledge management operated. Karahanna and Preston (2013) used social capital as a vehicle to analyse the relationship between the CIO and their relationship with Top Management Team (TMT) and how social capital had implications for financial performance. They did not extend their study to senior management within IS. This study included both senior business managers and senior IS managers and looked at the way that social capital was built between them rather than simply focusing solely on the TMT. It examines the impact of social capital in business and IS alignment across a wider range of senior managers.

Table 3.4 in Chapter Three brings together the dimensions of social capital and alignment linking the dimensions and themes from both fields of study. via an analysis and synthesis of the literature in both fields. This construct demonstrates a clear relationship between the discourse on social capital and that on alignment which supported the construction of the empirical allowing the researcher to set the study within a rigorous conceptual framework which is meaningful in both social capital and alignment terms.

This study has shown that it is possible to examine alignment at a theoretical level through the dimensions of social capital : network relationships, shared norms, trust, reciprocity expectation and collective efficacy. Networks, as expressed as lateral associations, social interaction and access to decision makers in social capital terms can be seen in similar terms when looking at alignment themes as network connections, formal and informal communications. The existence of social capital's shared norms as seen through a sense of community, fairness and frames of reference are visible in alignment as shared perspective, mutual respect and shared domain knowledge. In social capital, trust emerges as trustworthiness, expectation of trust and openness and is seen in alignment as belief in the other party's value and integrity, expectation of collaboration and understanding and managing risk cooperatively. Reciprocity-expectation in social capital is built on the expectation of future benefit, helpfulness and advice giving and receiving and for alignment it is derived from shared planning, convergent interests and mutual understanding of each other's value. The social capital goal of collective efficacy is seen in the achievement of group obligations and access to power and in alignment terms it leads to superior performance and access to financial decision making.

This combination of social capital is a unique contribution of this study and since no preceding work has attempted to bring these concepts together in such a framework. As such, this study contributes to theory offering future researchers a structure to examine alignment through the lens of social capital either in a broader context or through a single dimension.

The study extends the body of knowledge on alignment by looking inside the firm at the resources that social capital creates in order to look for a resource-based view of alignment as a dynamic capability. Those resources come from the dimensions of social capital.

8.3.8 A dimensional approach applied to alignment through social capital

In applying the concepts of social capital to an IS problem, this research adapts and extends tools and frameworks which have not previously been applied to IS research in this way. The study proposes that there exist dimensions and tiering in social capital when applied to alignment and that these are different when seen from the business and IS perspectives. The two frameworks presented in figures 8.5 and 8.6 show a clear difference in perception between business and IS. This dimensional approach was developed as an original conceptual framework since neither of the other frameworks (Narayan and Cassidy 2001; Nahapiet and Ghoshal 1998) provided the rich, internal view of social capital. The framework formed the basis for an instrument to test the quantitative data and to support the gathering of qualitative data and provides an innovative way of gathering this information in the case of alignment. This framework was tested against a set of empirical data which revealed different relationships for the business and IS communities. The framework could be adopted for other commercial environments and lead to the development of instruments appropriate to the assessment of alignment through social capital in those contexts.

8.3.9 Extending social capital knowledge

Where there is a great body of knowledge on social capital in development studies, government agencies and not-for-profit organisations, its use has been more limited in commercial organisations. In the same way as the frameworks needed to be adapted to suit the language and pressures of business, this study suggests that some of the other effects of social capital may also be context specific.

The study also makes an additional contribution to social capital theory in the examination of the impact of homophily which is found to have less importance than that suggested by Burt (2000) who suggested that homophily was likely to be source of relationships and that homophilous relationships were less likely to decay. This study suggests that, in this context, homophily did not promote strong relationships nor was it a source of long term relationships. In this highly turbulent environment, long-standing relationships were not formed through similarities but through surviving great organisational shifts and therefore, this study suggests that the value of homophily should be seen as context specific.

Trust is a fundamental component of social capital and critical to the achievement of alignment. Where relatively low levels of trust was seen, there was a widely held view that trust had been lost by organisational change. However, in the two newly created firms, there was a higher level of trust expressed by both parties implying that trust can be built in a relatively short time where it is complemented by reciprocity expectation and collective efficacy. This study also extends the knowledge about trust as a social capital asset when seen in combination with reciprocity expectation and collective efficacy.

8.3.10 Comparison of alignment by firm

In looking at how alignment is perceived in the firms as an outcome of social capital, it is necessary to look at other factors which may influence the way that social capital is created since it may be easier to create social capital in some circumstances, for example, it may be easier for smaller firms to build trust and cooperate.

Table 6.1 shows the perceived level of alignment encountered in the firms set against the context of their size, ownership, newness and independence of action. Table 8.1 below expands on that to look at the presence of social capital by dimension:

Table 8.1 social capital by dimension by firm

Firm	NW	SN	TR	RE	CE	Level of alignment
1	L	M	L	L	L	L
2	H	L	H	M	H	H
3	L	M	M	L	L	L
4	H	M	H	H	H	H

Key:

NW = Network relationships

SN = Shared norms

TR = Trust

RE = Reciprocity expectation

CE = collective efficacy

H, M or L = a high medium or low rating for a subjective indicator drawn from the conversations of the perceived level of interaction in that dimension.

Level of alignment : subjective indicator derived from the conversations showing the perceived level of alignment

FinCo 1 and FinCo 3 struggled to achieve alignment with each community finding network relationships difficult to build and maintain, a low level of shared norms and process, little trust or reciprocity expectation and a general belief in suboptimal performance and low collective efficacy. These are the larger firms and each has an external influence which creates constraints which influence the relationships. FinCo 1 has been created out of mergers and acquisitions with new and more formal processes in place emanating from the parent company. Traditional relationships have sometimes been lost in these organisational changes and not been replaced. The formal processes and norms are regarded with mistrust

and there is little expectation of the fulfillment of mutual obligations or superior performance. FinCo 3 has also undergone significant changes, largely driven by the business unit itself. Network relationships are not well established and there is ambiguity in the organisation's structure and processes. Trust is not well established and expectations of mutually fulfilled obligations are often thwarted by confusion over responsibilities and bureaucracy.

The two smaller firms (FinCo 2 and FinCo 4) experienced good or acceptable levels of alignment when discussing their business unit IS organisations. The recent formation of each might suggest that it would not have been possible to build the necessary relational capital but this seems not to have been a barrier. In the case of FinCo 2, the firm sprang from a management buy-out so there was a previous history of working together successfully. For FinCo 4, management had placed particular emphasis on recruitment for "fit" rather than recruitment for technical skills. Network relationships were well developed in each firm as might be expected in smaller organisations. Shared norms were in less evidence with a clear view in FinCo 2 that these were related to a separate departments and largely did not need to be shared. Both firms demonstrated a high level of trust between the communities. Again reciprocity expectation was lower in FinCo due to the perception of different expectations of the separate departments. Nonetheless, both communities in FinCo 2 and FinCo 4 saw their firms as having a high level of collective efficacy seen through superior performance.

Alignment is not simply a factor of size, longevity of the relationships in the firm, relative autonomy but is derived from the social capital which is built through a combination of those factors. It would appear that it is easier to build a high level of social capital and alignment in a smaller firm enjoying a high level of autonomy, irrespective of ownership. Conversely, it is harder to build a high level of social capital and alignment in large business units with a low level of autonomy. This research contributes to the understanding of alignment through social capital by developing a wider understanding of the operating context of each firm.

8.3.11 Alignment as a social experience versus alignment as process

This study started by looking at the way that each team saw alignment through the lens of social capital and, indeed, the study found that they have a different perspective on the relationship. Figures 8.5 and 8.6 lay bare the difference in perception between the business and IS when looking at alignment. For the business, alignment is a social experience which can be tapped into over and over again. It starts with the formation of a beneficial network whose participants share norms and beliefs about the way the organisation functions. That combination leads to trust, the reciprocal expectation of mutual benefits and collaborative and effective working. Both the literature on alignment and the evidence of this study suggest that alignment is a topic that is of explicit concern to IS management whereas the business is only interested in the outcomes of alignment. This represents a fundamentally different point of view.

It is not just the case that one side sees themselves as clients but the other side has an ambition to be a partner. In each of the 4 case studies, there was a commonly held view of IT as a service so the differences were at a deeper level which can be see when the findings are mapped onto the revised frameworks. While knowing that these perceptual difference exist and knowing what they are did not explain why the difference in perception was seen. Knowing the other side well seemed quite important to the business but it was knowing the decision makers that was important to IS. The business talked a lot about having a shared background and a common history but that was not nearly as important for IS. Regular interaction was important for each team but the formal side of progress meetings and steering committees was more significant for IS and they were not concerned to have more informal meetings. Rules and adherence to proper process was more important to IS than to the business. If the business did not have clarity of how to do something or to whom to turn, they were quite happy to short-circuit formal engagement and simply approached the person they knew, irrespective of their position or role even when they knew that person would not be the person to complete or direct the task or make the relevant decision. That person would be an effective guide through the bureaucracy. Forms, bureaucracy and rules of engagement were an

impediment to getting things done for the business whereas they were how you get things done for IS. For IS alignment is characterised by process so rules of engagement, knowing decision makers and having a clear view on the roles of actors were far more valuable than having any particular fellowship with a counterpart. If alignment is a successful process, then it engenders trust, reciprocity expectation and collective efficacy and the sharing of norms. It is different for the business. Alignment is experienced at a social level not a process level and is dependent on the maintenance of personal interactions rather than impersonal ones. If it is a social experience, realised by having a flexible network of trusted colleagues who share norms, collaboration will create collective efficacy for mutual benefit and promote even greater trust. If it is a process then it can be mapped and replicated, if it is a social experience it needs to be nurtured and harvested.

This study advances the work of Granovetter (1992), Nahapiet and Ghoshal (1998) and Moran (2005). Those studies compared individual managerial performance and found that some managers placed value on "structural embeddedness" which is to do with position in an organisation and is essentially impersonal whereas other managers associate greater value with "relational embeddedness" which is personal and related to not just who you know but how you know them. The previous studies looked at individual efficacy not collective efficacy. This study takes that work in a new and innovative direction by comparing the perception of two different groups and identifying that the IS community is more concerned with structural embeddedness having a process perspective and the business is more concerned with relational embeddedness having an experiential perspective. This contribution advances knowledge in both alignment and social capital theory.

8.4 Contribution to practice

This study offers insight and direction to practitioners who are seeking to improve alignment in their organisations and suggests that building social capital to

improve mutual perception and understanding may provide a key to alignment. It throws light onto the problems faced by practitioners in larger firms where organisational structures make alignment more difficult and where they might learn from the intimacy which exists in small organisations. It offers practitioners a perspective on how they can engage in the strategy making process while taking on the role of the service provider. Practitioners fall into two categories: those who are attempting to create organisations aligned to their business' strategy and consultants advising those practitioners. In investment management firms which are creating new governance and operating models, it contributes to the understanding of how the fundamentals of networks, norms, trust, reciprocity and collective efficacy create strategic alignment. Consultants will be able to draw on this study to bring a broader understanding to their work and gaining insights into the successes and problems with different approaches. In practical terms, it offers pointers to senior executives, inside and outside IS departments and consultants on alignment and governance models.

8.4.1 Aligning *with* or aligning *to*

The study points to a dichotomy between the business and IS expectations of alignment. IS has high expectations of alignment, anticipating that the firm will benefit through the development of consensual and collaborative working practices allowing the seamless and expeditious diffusion of information, speedy decision making and efficient use of resources. IS uses the term ***"aligning with"*** and expects alignment effort to come from each party.

The business community also have high expectations of the value that can be achieved by alignment and look for the IS community to have a good understanding of the business functions and the competitive and regulatory pressures it encounters. They hope that this will allow IS to be thinking about the solution as soon as a need is identified. They look for streamlined decision making and effective implementations. However, there exists a key difference in their perspective. In contrast to IS, the business team does not expect to align with

IS but rather expect IS to ***"align to"*** the business. They expect the IS team to make the effort in this asymmetric relationship. This is most clearly expressed in the frequent use of the term "service provider". The business perceives that the hard work and endeavour needed to create alignment needs to come from IS and this would be expected as the natural outcome of a service provider relationship.

Paradoxically, as previously discussed, the IS community also tends to believe that it is a service provider while expecting to be treated as a business partner. If IS is to overcome the problems created by its quixotic understanding of its relationship with the business, it needs to resolve what it means by being a service provider. Grasping this issue is easier in smaller firms. There is greater intimacy between the teams simply by virtue of their proximity. In FinCo 2, the subject was dealt with by IS team occupying a gate-keeper role and intermediating all IS conversations and excluding the business from all conversations except those that required financial approval or negotiation. FinCo 4 managed it through their recruitment policy and their explicit deployment of externally hosted technology so that FinCo 4 itself maintained an arm's length relationship with much of their technology. Neither of these solutions provide complete answers to the problem since the approach taken by FinCo 2 is predicated on keeping the business in a state of relative ignorance and the problems created by the Group IS intrude on the relationship with the business for FinCo 4's own IS team. For FinCo 1 and FinCo 3, the size of the organisations, physical distance and complex governance structures lead to confusion and discontent. Each firm has tried to make inroads into the alignment problem by embedding subject matter specialists into boundary spanning roles with some limited success. The business often talks of them being "their" people in a proprietorial manner but when it looks beyond them into the rest of IS it sees nothing but a myriad of ways of saying "no" to business initiatives. It may, of course, be impossible to find a solution to work for all sizes of firm and, undoubtedly, some firms will have other problems of governance that make it unlikely that any IS solution would resolve their problems. However, it may be that a structural approach may be form part of the solution.

8.4.2 Leaning in

There appears to be no overwhelming concern from IS that it is regarded as a service provider and, in a number of cases, the IS participant offered this as an insight into their perception of their real role within their firm. If they are not troubled by this description and accept that their primary role is that of a service provider, then there should not be a serious concerns that IS is expected to make the effort to align itself with the business. In the same way, it should not expect the business to have more than a sensible understanding of the cost and value of the IT provided to it. Indeed, this expectation was clearly stated by the CIO of FinCo 2.

At the same time the business often held the view that IT was a costly and "necessary evil" obscured by complex processes over which they had limited control. In most cases IS had a very low opinion of how well the business understood IT. Few of the IS survey respondents found that the business had a strong understanding of what the IS organisation actually did for the firm and this was further echoed in the their perception that the business had a very poor understanding of the wider operating environment that influenced their function. This was reiterated many times by the IS interview participants. Both sides of the firm recognise that IT/IS is an essential and expensive contributor to running their business commodity and accounts for approximately 15% of the total operating cost of a typical investment manager (BCG 2013) but still the business shies away from having a good understanding of those costs and their implications. In a number of instances IT investment was seen as too remote or difficult to be discussed at the most senior level. If the business is to have adequate control over its internal environment, it would appear to be necessary that the business should not just understand *what* it spends but should also understand the value of that spend.

If they are to overcome this ambivalence, then this study suggests that since the business is unlikely to make a significant effort to change its behaviour then it is necessary for the IS team to redefine their engagement with the business. If IS

does not have a role beyond that of service provider, then IS management needs to ask itself why would its business customers expend time and effort in understanding something which they perceive to be commoditised and of peripheral relevance. It then becomes a matter for IS to engage with the business in a way that is comprehensible to the business so that the business is well-informed. It should be a matter of paramount importance for IS to make the effort to "lean in" towards the business.

8.4.3 A dog walking on his hind legs

Passive acceptance of the role of service provider places IS management at a disadvantage in its dealings with the business. It does not put IS in a position where it is able to promote the future business whether that is through the the ability to grow into new markets or products or to make itself more efficient and effective by reducing costs and to be innovative in so doing. As the service provider, IS needs to demonstrate its value to the business through business based explanations of value and cost. In order to create the dynamic capability described by Baker *et al.* (2009), it needs to take specific action to engage business through its own training and knowledge of the business and, beyond that, to ensure that the business understands that there is a level of deep knowledge held by all IS management. Simply placing a few boundary spanners on the bridge between the business and IS in the large organisations will not overcome the mistrust and suspicion of that the rest of IS has a poor level of knowledge about the business. Shielding the business from the implications of IT decisions works well enough in small organisations when they are not in a cost-cutting regime but will fail scrutiny when the environment changes. The business has a very poor expectation of business knowledge in the IS team and is largely surprised to find any depth of business understanding in IS except in the subject matter experts in areas such as business analysis. Where they encounter real and comprehensive business based knowledge, they are, like Dr Johnson on encountering a female preacher, not only was surprised to find that the holder of that knowledge might add value to the business but that they are surprised that the person has any

knowledge at all "like a dog's walking on his hinder legs. It is not done well; but you are surprised to find it done at all" (Boswell 1791, p.132).

The business finds IS a good location for process allowing clarity of decision making and effective management of outcomes but that is contrasted with the perception that the level of bureaucracy is superfluous. To overcome that, IS needs to sell the idea of projects and process as bringing benefit to the firm. The studies showed that the business is likely to evade and avoid process and therefore in order to ensure that its value is understood, it is necessary to learn to engage with the business at the right points in the process. In explaining value and cost, IS needs to put this in terms that are readily understood by the business. Cost measures need to be couched in business terms, for example, explaining costs in terms of the impact of decisions on key business ratios or fund costs.

8.4.4 Different views of alignment

Both the literature and the evidence of this study suggest that the is a topic that is of explicit concern to IS management whereas the business is only interested in the outcomes of alignment. This represents a fundamentally different point of view. The business often does not recognise that a problem of alignment exists, whereas it is a matter of focus for IS. Understanding the difference in perception may assist practitioners to define alignment in their own business environments and offer a way for IS to engage business more effectively.

8.5 Summary

This study draws together the concepts of business-IT alignment and social capital in a dimensional framework, proposing the presence of social capital as a critical underpinning for the creation of alignment and, hence, superior performance. It provides empirical evidence of the dimensionality of social capital and its impact on alignment.

This chapter started with an introduction in section 8.1 and continued with a discussion on the findings of the empirical study set against the literature on

alignment in section 8.2. It has found significant agreement with much of the literature but with some caveats around the complexity of alignment, for example, mutual understanding or the lack of a shared belief in the value of process. Section 8.3 discussed the theoretical contribution of this study. Implications for practitioners were examined in section 8.6.

Chapter Nine - Conclusion

9.1 Introduction

This thesis has examined the impact of social capital on business and IT alignment in commercial organisations. The fieldwork provided evidence that where a low level of social capital exists, organisations fail to achieve and engage in blame and discord. Where there is a strong bridging social capital the two teams respect each other and have a strong belief in each other's value.

This chapter draws together the preceding work in this thesis. The chapter continues in section 9.2 with a summary of each chapter and their links to the research aims and objectives established in section 1.3. Section 9.3 goes on to cover the key conclusions that are asserted by the researcher and section 9.4 discussions of the limitations of the study. Suggestions for future research directions are explored in section 9.5 and the thesis concludes with a personal reflection in section 9.6.

9.2 Meeting the objectives of the study

The thesis began with an introduction to the direction and structure of this study in Chapter One and pointed to a research gap in understanding business and IT alignment through an examination of social capital as a contributor to, and precondition of, alignment. Setting the research objectives and scope, it described the choice of the investment management sector for the fieldwork for this study.

Chapter Two provided a review of the current literature addressing business - IT alignment looking at how alignment works in organisations. It also discussed material on alignment in financial services and the competitive external environment. A framework approach was used to identify gaps in the current literature. Chapter Two met the research objective of identifying gaps in alignment literature. This study explores one such gap, that is, the impact of social capital in creating alignment.

The thesis continued with an examination of social capital theory in Chapter Three finding benefit for the application of this theory in a business environment where there are acknowledged differences of viewpoint, disconnects and misunderstandings. The chapter discussed the development of a tiered and dimensional framework of social capital and proposed that these tiers and dimensions could provide insight into alignment. Thus Chapter Three met the objective to develop a framework approach to study alignment.

The conceptual framework was then used to inform and guide the direction of the empirical study, enabling the researcher to develop tools to support that study. Chapter Four continued with an exploration of methodological considerations relevant to this study and established a philosophical and pragmatic rationale for the selection of the interpretative paradigm utilising a mixed-method approach involving both qualitative and quantitative methods. It provided an introduction to the case study, outlining the criteria for the selection of participant firms. Chapter Four thus met the objective to develop a methodology consistent with the research problem and appropriate to the conceptual framework.

The thesis continued with Chapter Five which concerned with the detailed methods which were used in this study, grounding those methods in the methodology and conceptual framework. It examined the practical concerns of the case study including the management and tools for both the interviews and the survey. The method linked the tools to the conceptual framework and the research scope and met the research objective to design a method to enable the research to apply this framework to four cases in the investment management sector.

The findings were discussed in two chapters. In Chapter Six, an exploration of the qualitative findings established that both teams had a clear perception that IS was essential to the business life of the firm but they had a different perspective on how IS fitted into the organisation through trust, the value of network relationships, shared norms, mutual expectation of reciprocity and collective efficacy. Chapter Six met the objective to analyse and report on the qualitative data.

The quantitative findings were presented in Chapter Seven with a detailed analysis of the questionnaire data. The perceptions which were seen in Chapter Six concerning the way that the business and IS related to each other in their use of network relationships, sharing social norms and engaging in trust, the reciprocal fulfillment of mutual obligations and collective efficacy were echoed in the quantitative data. The chapter also examined the data against the proposed relationships in the conceptual framework finding that there was a difference in the findings between the two communities. Chapter Seven met the objective to analyse and report on the quantitative data.

Chapter Eight brought those findings together in a discussion, examining the findings against the literature on business-IT alignment and social capital. The discussion supported both the main body of literature which points to a high level of misunderstanding and miscommunication in the relationship between the business and IS and that the source of those misapprehensions lay within social capital constructs. In discussing the difference between the way that the framework appeared to work for the two communities, the chapter explored those differences and suggested that different mechanisms may operate for business and IS. The chapter presented modified frameworks for both business and IS. The chapter therefore met the research objective to synthesise the findings to establish an understanding of the role played by social capital in alignment.

The final objective, that of drawing conclusions, understanding limitations and suggesting possible future research direction is met by this chapter.

9.3 Key conclusions

Social capital is a multi-stranded but cohesive concept. In organisations, it is achieved through continuous effort by building and renewing network connections, establishing social norms with shared values, language and processes, earning and giving trust, setting and delivering reciprocal expectations of mutual obligations leading to collective efficacy and the achievement of the

organisation's goals.

This thesis argues that collective efficacy is seen when the business and IS organisations are in alignment. Social capital creates value when it reaches collective efficacy otherwise it is simply a way of creating a level of organisational comfort via trust, networks and shared values and mutual obligations. Similarly, alignment between an IS department and its corresponding business only creates value when it is an enabler of superior performance. Alignment and social capital are seen as proxies for each other and that alignment is the product of the two lower tiers of social capital with performance being delivered as a consequence of the highest tier.

The following are the main conclusions which have emerged from this research:

9.3.1 Alignment in turbulent environments

This study brought together the concepts of business-IT alignment and social capital into a conceptual framework proposing the presence of social capital as an underpinning for the creation of alignment with the outcome of superior performance. The research framework proposed the existence of tiering in social capital, that is networks and norms create a fundamental layer that goes on to create a transformational layer comprising trust and reciprocity expectation which, in turn leads to collective efficacy. In the literature review in Chapter Two, it was shown that there exists a large body of literature pointing to the achievement of superior performance through alignment. Most recently, studies have found a link between social capital and performance. It seems reasonable to assert that social capital is a valuable asset in the creation of alignment within an organisation. However, alignment is not static and research chiefly only takes a snapshot of alignment. Good levels of alignment might be found at one time in an organisation but this might all change as its environment shifts. This was seen very clearly in this study where all the firms existed in highly volatile climates. The two smaller and newer firms had arisen as the result of environmental changes and therefore they were presented with a *tabula rasa* when it came to matters of alignment. In contrast, the other two firms were responding to changes

over which they had little control and found regular breaks in network relationships, failures of trust, the inability to share norms, little belief in reciprocity and low levels of effectiveness. This study concludes that alignment is more difficult in turbulent environments where participants experience change but are unable to exercise little control over that change.

9.3.2 Dimensionality of social capital

In the discussion in Chapter Eight, it was seen that the linkages between the tiers were indeed present even if they did not operate in precisely the way that the framework had initially proposed. In both cases, there was a strongly suggested flow from tier 1 to tier 2 and tier 3. There was no evidence to suggest that network relationships and shared norms were triggered by trust, reciprocity expectation and collective efficacy. Moreover, the findings supported a strong level of feedback once there was evidence of trust, reciprocity expectation and collective efficacy suggesting that if organisations put a deal of effort into activities at the lower tiers, this will start to pay dividends in improved performance. The study concludes that the findings from the four case studies provide empirical evidence of the dimensionality of social capital and its impact on alignment.

9.3.3 Differing perceptions of alignment

The study found that the proposed positive correlations between the dimensions were indeed present for the business respondents but a different mechanism appears to operate for IS. The data suggest that networks are less strongly correlated with the other dimensions than anticipated which may suggest that, while they are a necessary precondition for the development of social capital, the genuine level of alignment which creates collective efficacy or superior performance, is found in the transformational tier, that is the combination of trust, shared norms and reciprocity expectation.

The difference in perception is highlighted by the problem that was seen in integrating the quantitative findings for network relationships into the conceptual framework for IS. While the IS teams tried hard to build trust with the business by managing process and risk for the firm, network relationships were only seen as important as conduits to effective delivery and were not perceived to have any value in their own right. This was in sharp contrast to the business where network associations were critical to having and maintaining good relationships. Trust is also an area of where problems of perception arise. The business tends to have a good impression of the reliability and integrity of IS but those impressions are not as deeply held by IS.

The study demonstrates that, while the participants generally believe that they get on well with each other, there is nonetheless a level of misunderstanding and miscommunication in their relationship, irrespective of whether the firms are large or small. This is consistent with the discussion in the literature where misunderstanding of the other's function and of their knowledge was frequently seen to be a problem. This study concludes that alignment is negatively impacted by these differences in perception.

9.3.4 IS as a service provider

The findings uncovered a clear picture of the role of IS being that of a service provider. This view was consistently held by business and IS participants, irrespective of their seniority or whether they had a positive or negative view of IT/IS.

However, although they shared the use of the term, it did not necessarily translate to a common understanding of the role of IS and its contribution to the organisation.

The business held a consistent view that IS was a service provider of a generic and non-strategic service and therefore expected IS to make the effort to understand, service and align with the business. IS management tended to make

the same observation that their role was to provide or broker the provision of services which were not strategic. However, they expected that the business would make an effort to align with IS so that they could make collaborative decisions. This study, therefore concludes that, in this sector there is a strong perception of the role of IS as a service provider.

9.3.5 Alignment as a process or as a social construct

In examining the differences between the business and IS perception of each other when considering how they achieve alignment, there was a great deal of evidence that they did not look at each other in the same way nor did they share the same perspective on a number of issues. This was clear in their views on the way that they saw value in having a good and well maintained network, the way that they viewed the value of processes and their understanding of the organisational norms and their perception of trust and integrity. While there was ample evidence of a difference in views, it was difficult to see why those views were so different.

When this problem is looked at as a fundamental difference in perception, then the study offers a clear and unique insight. For IS, alignment is a process which is managed through structure, formal networks and the management of outcomes. As a process it can be controlled and replicated. When looked at from the business side, alignment is a social construct and is managed less through reporting lines and more through informal relationships and the management of expectations. Thus this study concludes that the business sees alignment as a social and experiential construct whereas it is a regarded as a process by IS.

9.4 Limitations

9.4.1 Selection of cases

This study was highly constrained by the availability of participant firms. Starting with a possible selection of 15 firms, by the time the interviews started in earnest,

this had dropped to four which were prepared to continue with participation. In an ideal scenario, there would have been a greater selection for the final four or five participant firms which may have provided a more representative sample of the sector. If there had been greater choice, the researcher might have chosen to eliminate one of the smaller firms in favour of a medium sized enterprise.

9.4.2 Access

In some cases, there was a skew of participants towards a major functional area which may have been because other functions were unwilling to take part. The researcher was not able to select the interview participants, merely to request a range. Where this was not possible, it may have been because the main contact was unable or unwilling to engage other participants. This may have had an impact on how perception of alignment was reported.

The IS interviews tended to take about one hour whereas business interviews often went on longer. If the interviews were shorter, it is impossible to know if something insightful was missed by not being able to explore the subject for longer. Where the researcher was aware that it was not possible to continue the interview, the *aide memoire* was used to try to cover remaining topics. It was not possible to know if these topics would have been raised if it had been possible to make these interviews longer or if they were not particularly relevant to an individual interviewee.

Greater emphasis fell on the interviews than had been originally anticipated since none of the participant firms provided access to documents, arguing that they were out of date or irrelevant. Similarly, it was difficult to obtain access to meetings. Group interviews were failures since there was a great deal of checking with the most senior person in the interview to make such an interview useful. Thus the supporting survey became a valuable and integral part of the process.

9.4.3 Questionnaire data

Although the questionnaire achieved a 42.5% hit rate for the business and 57% for the IS respondents, it was nonetheless a small sample. In such a small sample, the

data may be skewed. There was also the risk that participants would tend to choose responses which were either clustered around the middle range or which were overly extreme. If the survey hard covered a larger sample, then potential problems such as this might have been overcome.

9.4.4 Mixed method approach

In choosing a mixed method approach, the researcher addressed the issue of paradigm incommensurability but there remains the matter of analysing the qualitative data using semi-quantitative methods. In the same way, the survey data could be regarded as really qualitative data since respondents were asked about their perceptions rather than facts. Since the *aide memoire* was used to support the interviews there was therefore an implicit bias towards the structure and content of the conceptual framework.

9.4.5 Generalisability

Since qualitative study places an emphasis on those individual experiences, it should be expected that there is not necessarily any generalisability. The researcher chose to expand the original scope of the study to include a survey but the respondents of the survey were restricted to the managers within the four in-scope firms. A case for some transferability could be made, since the case studies are all drawn from the same sector and there is a high level of consistency in the responses. Thus it might be reasonable to expect to see the findings relating to the perception of IS as a service provider, the lower value placed on the IS function and the consistency of standards of behaviour and standards replicated in other firms in the same sector. However, there may be insufficient evidence to suggest that other findings are generalisable, for example, the higher level of engagement and alignment seen in the two smaller firms may be a factor of size but there could be other factors at play wholly relating to the individual personalities. Despite the small size of both the interview population and the number of survey participants, there was a great deal of consistency in the results.

Although there is a limited case for some generalisation of the findings to other firms in the same sector, those findings should not be considered transferable to other sectors which have different competitive pressures or dependence on technology.

9.4.6 Interpretation

In an interpretative study operating in a naturalistic environment, it may be difficult to achieve consistency of the interpretation of the findings. The statement of a participant is subject to two perspectives : that of the interviewee and the researcher. The interviewee might have stated a perception using stronger or weaker language. according to their most recent interaction with the other team. The researcher might also have interpreted those perceptions differently. The outcomes are, therefore, highly interpretative and this should be borne in mind when reading the findings.

9.5 Future research directions

9.5.1 Using the conceptual framework for other contexts

This study has focused on a very specific and niche sector and it is possible that no generalisations can be made from the findings or that they are only applicable to this setting. However, framework could be adapted to other industries and similar tools and methods adapted for the needs of those studies.

9.5.2 Studying the impact of homophily

This study did not find any impact of the teams having a perception of similarity through such sources as age, background and education. However, this may be a sector-specific effect since people tend to come from a wide range of national cultures or it may only apply to the firms which are included in this study. Further study of homophily would be a useful deepening of the knowledge within social capital.

9.5.3 Gender

The impact of gender was excluded from this study since the sector has a high level of gender inequality at senior levels both in IS and in the business. There were only 3 female interviewees and therefore, there was no enquiry into the impact of gender in the building of social capital. However, this could be an area of great interest and applicability in other sectors.

9.5.4 Applying the framework to larger samples

Although in the case of this study, the interview samples were small and the number of survey participants was small, the results are sufficiently interesting to point to an opportunity for further research which might provide greater insights or opportunities for generalisation.

9.5.5 Examining underlying reasons for perceptual differences

This study has shown that differences exist in the perception of alignment between the business and IS communities and found that these differences can be described in terms of social capital. However, it was not in the scope of this study to understand why the two groups have this difference in fundamental perceptions. The study did not examine whether the rigours and discipline of one function tends to predispose its practitioners to one set of behaviours and perceptions or whether people who have an inclination to a particular set of behaviours and perceptions are drawn to a particular specialism. An examination of these underlying differences and their impact on social capital would be an interesting direction for further research.

9.6 Reflection

In their comic history of England, Sellar and Yeatman (1930) reflected on the trials of British prime minister W.E. Gladstone as he tried to guess the answer to the Irish Question. Sellar and Yeatman mused, that Gladstone grew angrier as the years passed because

"whenever he was getting warm, the Irish secretly changed the Question".

(Sellar and Yeatman (1930, p.116)

This study began because I found it a compelling subject which had impinged upon my professional life for many years. I had tried many different approaches to achieve alignment with greater or lesser success. None of the techniques and stratagems provided a complete answer and I began to wonder if, perhaps, it was a puzzle that could not be solved. Perhaps, as people like Carr (2003) assert, it was a problem not worth solving no matter how much IS professionals worried about it. This thesis started with a quotation from a Chief Information Officer who desperately wanted to understand the direction of his business so that their team could prepare for whatever changes came along. It seemed that, as businesses metamorphosed from one state to another, IS needed to do more than just keep up with those changes. During the course of this study, it has emerged that just being aware of, and informed about, the business direction was not enough to create alignment. Nor is that alignment necessarily driven from networks and processes. Trust, sharing obligations and mutual dependency all play a role in creating alignment and they may be derived in different ways for the two communities.

Not wishing to spend my declining years as the Gladstone of IS alignment, I found that knowing the answer was not nearly as important as knowing the Question and that Social Capital is vital to knowing the Question. Therefore, I can conclude that in contributing to Alignment, Social Capital is

" a Good Thing"

(Sellar and Yeatman (1930, p.11)

Appendix A - Review Framework

The figure below illustrates a five stage process of refining the choice of literature from an initial broad range of hits through filters to cluster references by logical themes, draw in additional references and finally eliminate references which did not address the scope of the study.

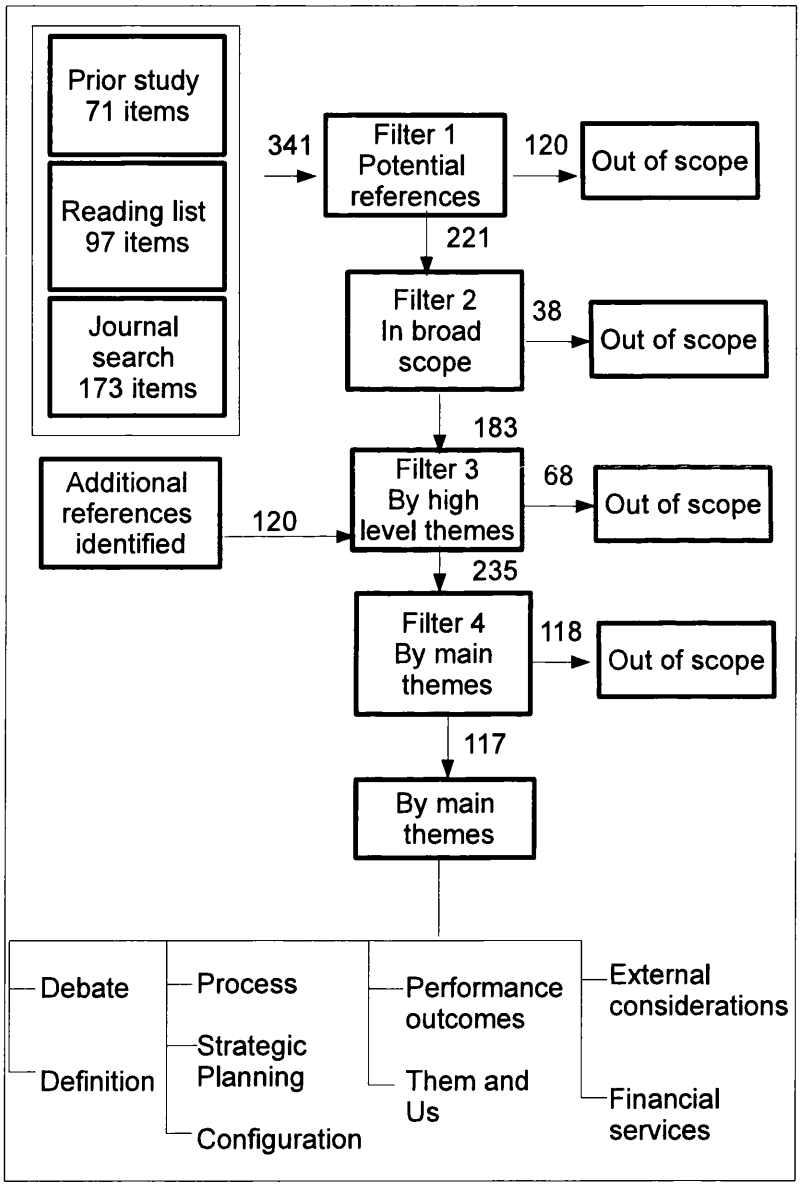

Figure A.1 Review Framework

Review Framework Filter 1

The initial analysis of literature looked at three sources : references from previous study and doctoral proposal, references suggested by the School of Management and the subject librarian, journal searches and conference proceedings conducted using tools such as the Athens portal to access databases such as "Web of Knowledge" to narrow the selection by topic, journal, author, frequency of citation and year of publication.

The table below shows the publications which were discovered in the initial search:

Table A.1 Initial search publications

Publication name	**Type (journal or proceedings)**
Decision Sciences	journal
Decision Support Systems	journal
European Journal of Information Systems	journal
Harvard Business Review	journal
IBM Systems Journal	journal
IEEE Transactions on Engineering Management	proceedings
Information and Management	journal
Information Systems Research	journal
Information Systems Frontiers	journal
Information Systems Journal	journal
International Journal of Electronic Commerce	journal
International Journal of Management Reviews	journal
Journal of Information Technology	journal
Journal of Management Information Systems	journal
Journal of the Association for Information Systems	journal

Publication name	Type (journal or proceedings)
Journal of Strategic Information Systems	journal
Management Science	journal
MIS Quarterly	journal
Strategic Information Systems	journal
Training and Development	journal

This was filtered for general relevance, that is, relating to the broadest theme of strategic alignment. Some references were ruled out at this stage but will be valuable at a later stage, for example, analysing data, others were only tangentially in scope and others were wholly out of scope. This reduced the number of references from 341 to 221.

Review Framework Filter 2

The broadly relevant list was scanned and clustered to further eliminate documents which related to IT and Information Systems but did not impinge on the main topic, for example, project management practices. This reduced the number of references to 183 with the main themes arising at this stage clustering around configuration, process and maturity.

Review Framework Filter 3

Scanning references from Filter 2, uncovered further relevant references in the existing list of journals and other publications. The literature review was refreshed each year and this also brought in references from the existing list and additional publications. The list was therefore expanded to include the following publications.

The table below shows the follow up search publications:

Table A.2 Follow up search publications

Publication name	Type (journal or proceedings)
Cahier de GreSi	journal
Canadian Journal of Administrative Sciences	journal
Critical Perspectives on International Business	proceedings
Innovation Vision 2020: Sustainable growth, Entrepreneurship, and Economic Development	proceedings
International Journal of IT/business alignment and governance	journal
International Journal of Information Management	journal
Journal of Strategic Change	journal
Sprouts : Working Papers on Information Systems	journal
Twenty-Fourth International Conference on Information Systems	proceedings

This increased the number of references to 235.

Review Framework Filter

This more specific list was grouped for ease of management and referencing according to themes. These included hot topics, that is, recent work in the field and suggestions for study. The use of research techniques and methods such as case studies and surveys, irrespective of sector. Literature reviews were examined to benefit from other studies. Further clustering grouped the literature according to organisational design, configurations and structures. power, politics and culture and models and processes. Literature pertaining to financial services was examined to narrow the focus on any potentially relevant work in the sector.

Each reference was scanned to exclude either by theme, for example, financial services risk non-technology risk management and small scale engineering case studies. These initial themes gave rise to 117 references for detailed consideration.

Review Framework Filter 5

The remaining references were grouped using cluster analysis and an overall structure to the literature was derived from this stage. The literature was grouped into the strategic alignment debate and defining strategic alignment. Further clusters brought studies on strategic planning, process, configuration and the performance outcomes of strategic alignment. The apparent division between the business and IS gave rise to a literature grouping known as "Them and Us". Finally, literature relating to external considerations and financial Services were were grouped together.

Initially, maturity seemed to be a theme in its own right but, on further examination, it was clearly formative in the early debate about alignment but no longer held any significant research interest. Two references were deemed to be out of scope for the purposes of a Literature Review but were relevant to later fieldwork.

Analysis of references

The chart below shows the division by type : books, journals and others. Journals were the dominant source, followed by books. Other references were from a variety of sources such as government papers and online research. The main bias is towards journal articles in order to obtain the most recent findings.

The number of books on the subject area peaked in the mid 1990s coinciding with the debate on the resources and competences view of strategy. A resurgence of interest is seen towards the late 2000s. The publication of books tends to lag publication in journals and other sources such as conference papers. However, no books published after 2009 came into the scope of this literature review although there continued to be wide interest in journals.

Clear dominance in the field is seen by *Information and Management*, *Journal of Strategic Information Systems, Journal of Management Information Systems, Information Systems Research* and *MIS Quarterly.* This reflects the intent of the study rather than having a focus on infrastructure, tools and processes.

The number of journal references steadily increased throughout the 1990s. The subject showed a brief decline in interest in the early 2000s with a modest revival in the middle of the decade. There is no clear evidence for the reason for this decline but it may be related to stronger interest in other fields at the time, for example, outsourcing. There is a surge of interest by 2010 reflecting a maturing and broadening field where scholars are looking for evidence of the contribution of IT to the success of the firm in different ways, for example, through process and in different geographies and sectors.

Appendix B - Case study protocol

A case study protocol was prepared as recommended by Yin (2003) covering the following and is drawn from other documents in this study:

Change Record

This lists the main updates to the protocol and the changes embodied in each version of the protocol and (where appropriate), the reasons for these.

Date	Changes	Reason

Background

- previous research on the topic (see Chapter 2 - Literature Review)
- the main research question addressed by this study (see Chapter 1 - Introduction)

Design

- identification of the unit of study, design considerations and the links to the research topic (see Chapter 4 - Methodology chapter and Chapter 5 - Method)
- identify any propositions derived from the research question (see Chapter 3 - Conceptual Framework)
- measures to be used to investigate the propositions (see Chapter 5 - Method)

Data Collection (see Chapter 5 - Method)

- the data to be collected
- the data collection plan
- define how the data will be stored

Analysis (see Chapter 5 - Method)

- criteria for interpreting case study findings
- the analysis should take place as the case study task progresses
- the plan should identify which data elements are used to address which research question and how the data elements will be combined to answer the question
- ensure that you identify alternative explanations of the results and
- identify any information that is needed to distinguish between these

Plan Validity (see Chapter 5 - Method)

- construct validity demonstrated through the use of the Debrief Panel show that appropriate operational measures are planned for the concepts which are being studied.
- external validity – this identifies the domain to which any study finding could possibly be generalized. The use of multiple case studies and the survey provides a direction for generalisability to financial services investment managers.

Study Limitations (see Chapter 5 - Method)

- this specifies residual validity issues that exist inherently within the problem, rather than arising from the plan.

Reporting

Identifies the target audience in the commercial and professional setting.

- The study contributes to the understanding of the strategic alignment debate. It illuminates the areas of difficulty such as creating the conditions for alignment and proving the value of that alignment. This review will contribute to the understanding of strategic alignment and governance models in use for IT in firms existing in turbulent environments, the pressures that create those models and the impact of them, beneficial or otherwise. The study will benefit both the academic community and practitioners.

- Practitioners fall into two categories: those who are attempting to create organisations aligned to their business' strategy and consultants advising those practitioners. In firms which are creating new governance and operating models, it contributes to the understanding of how strategic alignment and governance models can be used to create value, and the appropriateness of different models. Consultants will be able to draw on this body of knowledge to bring a broader understanding to their work and gaining insights into the successes and problems with different approaches.
- For the academic community, the study provides an aggregation of the debate leading to the current state of knowledge setting it firmly within the discussion about the source and nature of strategy within organisations. Additionally, it will give scholars insights into studies for which further in-depth reading may be beneficial. Furthermore, this review identifies research gaps in the existing literature and proposes a research agenda for future investigation.

Schedule

Establish Research Question	:	October 2011	-	January 2012
Review of current literature	:	November 2011	-	April 2012
Develop Conceptual Framework	:	May 2012	-	October 2012
Determine Methodology	:	October 2012	-	December 2012
Determine Method	:	October 2012	-	February 2013
Initial contacts	:	December 2012	-	April 2013
Debrief panel	:	December 2012	-	June 2013
Due diligence	:	February 2013	-	June 2013
Interviews	:	May 2013	-	September 2013
Survey	:	August 2013	-	November 2013
Analysis	:	October 2013	-	January 2014

Appendix C - Debrief Panel assessment of relevance of social capital attributes

Table C1 - Debrief Panel assessment of relevance of social capital attributes derived from the conceptual framework

Dimension	Attribute	Relevance score
Networks	How well they believed that they knew people in the other group	3
	Whether this was formal interaction, for example, through meetings or informal interaction, through such measures as office friendships, proximity of offices, coffee machine encounters or a mixture	3
	If this contact was formal, how frequently did such contact occur. If the formal contact ceased, did they believe would that the network relationship would begin to die away rapidly or would it still remain over some time	2
	If this was informal, how frequently did such contact occur and what kept this contact alive	2
	Did they know who to go to in the other group to find information to support what they needed to do or to obtain advice	3
	If the person was not able to identify the exact person to be able to provide information or advice, did they know enough people to be able to obtain introductions to the right people	3

	Whether there were similarities in the group and how similar they felt to those other people. Were those similarities seen through age, education, beliefs, professional background	2
	Did the person identify that they were closer to people within their own professional group than to grade-level peers in the other groups	2
	What was the nature of this closeness, for example, sharing a professional background or interest	2
Shared norms	Does the respondent share values with people in the other group	2
	Does the respondent understand the language used by people in the other group	3
	Does the respondent feel that they have a specialist or professional language	3
	Does this language confuse people in the other group and does this matter	2
	Does the respondent have a shared history with people in the other group for example stories about what the company was like at some point in the past or when they shared a significant corporate event	3
	Do the groups share processes for example, for budgets, projects or communications	2

	Are these processes the same because this is how this organisation manages a function (for example, it is mandated by a central control group) or because they have seen benefit in each other's processes	2
	Does the respondent feel that the other group's processes are more or less bureaucratic than their group	3
	Does the respondent believe that there good reasons for a different approach to processes in the other group	2
Trust	Did the person feel trust towards people in the other group	4
	Did they feel able to take initiatives or controlled risks in the belief of the support of the people in the other group	4
	Did they feel that the members of the other group were competent in their own sphere of expertise	4
	Did they feel that the members of the other group were knowledgeable in the other area or expertise (for example, did business people know about IT)	4
	Did they feel that they understood the level of competence in the other group	3
	Did the person feel trusted by people in the other group	3

	Did they feel that people in the other group were able to take initiatives or controlled risks in the belief of the support of this person	3
	How did this trust come about	2
	Did the trust grow or develop over time	3
	Was there a time when the person trusted the other group more or less than they do now	2
	What was the reason for that change in trust	2
	Do they trust people in the other group uniformly	2
	If not, why do they trust some people more than others	2
Reciprocity expectation	Did they believe that they have mutual expectations of services or benefits (for example, one group provides requirements and the other provides a service)	2
	Is this a simple transaction or is it more complex	3
	Does a time lag occur, for example, the other team provides some information now for no return but in the knowledge of a return some time in the future	2
	Do people in the other group ask for advice	2
	Does the respondent feel happy to give that advice	2

	Does the respondent ask people in the other group for advice	2
	Does the respondent feel that the other person is happy to give that advice	2
	Does the respondent feel happy with the quality of that advice, for example, depth or breadth	2
	Does the respondent have expectations of people in the other group to the same level	2
	Does the respondent have different expectations of some people than others	1
Collective efficacy	Does the respondent believe share that their group shares the same goals as the other group	3
	How are objectives set within in the organisation, for example are they trickled down the management tiers, are set at group level, or applied to individual groups	2
	How do the groups know that they share the same goals	3
	How does the respondent know that the goals of their group contribute in some but way towards the wider organisation	3
	Does the respondent believe that the groups set about achieving the organisation's goals together	3

Who initiates the process of goal sharing, for example, is it driven out of the business, IT or from some shared or common process	2
Who sets the agenda in conversations (3 faces of power)	4
How does the respondent know that they have achieved their goals, for example, using project reviews, financial reporting, balanced scorecards	2
Does the respondent have examples of when the organisation has been particularly effective	4
Does the respondent have insights into that effectiveness	3
Does the respondent have insights into failures to be effective	4

C2 - Dimensions and attributes derived solely from conversations with the Debrief Panel

Dimension	Attribute	Business frequency	IS frequency
Networks	Communications between the groups was important	2	2
	Communications between different levels was important, for example, ensuring that information was passed to lower levels	1	1
	There was little or no relationship between the technology (delivery) organisation and the business	0	1
	Technology management was poorly represented in the senior management / leadership team	0	2
	No single person or group to face in the other group so conversations were muddled and sometimes misleading	1	1
	There was no supportive structure to enable consensus.	0	2
	Knowing people over a long period was important to create a network and trust	1	1
Shared norms	The respondent had a strong sense of their team being "hated and despised" by people in the other group	0	1

	The respondent had a strong sense of their function being disliked by people in the other group	2	2
	The respondent felt they did not shared values with the other group	1	1
	The respondent felt they regarded as having lower status than the other group	0	1
	They felt that developing a more professional process (for example, for project delivery) is important	0	2
Trust	The respondent valued clear demonstrations of integrity	1	1
	The respondent perceived a lack of information from the other party as a demonstration of an absence of trust	0	1
	The respondent believed that trust is only developed over time and takes a long time to evolve	1	0
	The respondent believed that trust can be generated through recommendation	1	0
	The respondent believed that one side did not need to explicitly trust the other, since they knew that they were implicitly trustworthy	1	0
	The respondent believed that one side did not need to explicitly trust the other, since they did not need to demonstrate trustworthiness	1	0
Reciprocity expectation	The respondent stressed the importance of partnership	1	1
	The respondent believed that there was a lack of capability to deliver business strategy	0	1

	The respondent believed that there was little or no long term view on how IT could or should contribute towards the business	0	2
	The respondent stressed that mutual obligations were not served by simple transactions, each party does things for the other side and that results in future "kickbacks" to each other	1	0
	The respondent stressed the importance of a personal relationship that allowed a partnership to develop and allowed them to short-circuit formal process	1	0
	The respondent liked the ability to call on expertise from the other team for things other than work (for example, buying computers for home use)	1	0
Collective efficacy	The respondent had a sense of the business strategy (execution capability) being effectively throttled by IT because of constraints such as budget and execution capability.	1	1
	Efficacy can often be achieved through by-passing espoused norms and processes	0	2
	The respondent did not feel the need to look back at projects, they simply knew that the project had worked well	1	1

Appendix D - *Aides Memoire*

Table D 1 - Business *Aide Memoire*

Thinking about how you get things done in the firm, through your contacts with the IT team and how well you understand each other, do you	
	know all the right people in IT from the help desk team and application experts who can help with immediate problems and advice on how to do things more effectively
	meet IT staff informally do you chat about the business: how well the application is working, possible changes and about our shared interests/ acquaintances.
	know the right IT decision makers and senior management team for your business area and are able to approach them to discuss initiatives or projects.
	have formal contacts with IT decision makers and senior management: regular meetings, explaining new products and features, consultation, new product training.
	access to the IT management who make decisions: meet regularly, work alongside them, contributing to decisions about IT investments
	think that the IT team understands the day-to-day activities of your business team very well.
	think that the IT team understands the business strategy and future direction of the firm.
	work together with IT to plan new initiatives such as launching a new business line, acquiring a business, moving to a new location.

Thinking about the importance of IT to the business, do you:	
	believe that IT is essential to everyday operations.
	believe that IT is essential to implementing your business strategy.
	believe that IT is essential to defining your business strategy.
	find most people in the IT team explain things in an honest way even if there is a problem and they will make an effort not to avoid difficult issues.
	believe that IT is very reliable: for example, little down time, systems are resilient, reliable fixes exist for occasional problems, back-ups and workarounds are in place.
	understand how functions such as email and operational functions contribute to the business.
	understand how IT contributes towards the safe running, risk management and compliance of the business.
	understand how IT contributes towards cost savings.
	understand how IT contributes to the firm's strategy, for example, through IT architecture and planning.
	believe that IT always looks for opportunities to make improvements, e.g, they are prepared to find information / contacts, take the initiative to promote something useful.
	believe that IT has a good decision making and they will take appropriate (but not foolhardy) risk.
	believe that IT staff argue the case for decisions effectively
	believe that IT takes responsibility for IT-led failures.
	believe that IT can be trusted to deliver on schedule and to meet expectations of functionality.
	believe that where IT is unable to deliver, they make specific efforts to help the business understand why they have failed to meet expectations.

Communicating and sharing information with the business, do you:	
	talk regularly to the IT team who provide the applications which your business area uses.
	talk regularly to the IT team (for example, business analysts or developers) about new technology directions.
	believe that IT trusts the business to keep them included in business plans.
	believe that where the business is unable to keep IT involved in business plans, those plans are explained afterwards.
	believe that IT has an excellent understanding of the business environment and is able to contribute towards your understanding of issues.

Thinking about how you get things done in the firm, through projects, planning and budgeting, do you:	
	use a common planning process for budgeting, sharing all the budget information and assumptions.
	use a common prioritisation process to decide which projects are important for the business.
	have joint decision making to agree priorities, decide on scheduling and how budget is allocated.
	have a common process for managing projects. Does it bring relevant teams together very effectively.
	work together on projects and initiatives in an effective way.
	share communications about activities and changes. Is everyone kept well informed.

Achieving value with IT, do you:	
	believe that IT is very responsive to the need to implement changes to get minor or short term business benefits.
	believe that IT is very responsive to the need to implement changes to get long term or major business benefits
	believe that processes in use in IT are not overly bureaucratic and that the business understands why such processes are needed.
	believe that you work together with the IT team to agree priorities.
	believe that IT is very proactive in implementing changes that allows them to manage the technology more effectively.
	believe that IT communicates well about what is happening and IT staff explain technicalities in terms that you understand.
	believe that It would not be possible to achieve the business goals without having reliable IT.
	believe that it is necessary to partner with IT to make effective decisions about investments in IT.
	believe that IT and the business share the goals and objectives of the firm, agreeing on mutual objectives and working together to enable the success of the firm.

Thinking about the helpfulness of the IT team, do you:	
	find that the IT team is very helpful and explains how to make the best use of the systems. They always look for opportunities to achieve the best solutions.
	believe that the IT team volunteer to get involved in initiatives beyond their strict job descriptions, for example, planning workshops.
Thinking about how well you know the IT team, do you:	
	find it easy to relate to people in the IT team because you come from the same background (for example, education, locality)
	find it easy to relate to people in the IT team because you are from the same generation (for example, same age, have children of similar ages)

Table D 2 - IS *Aide Memoire*

Thinking about how you get things done in the firm, through your contacts with the IS team and how well you understand each other, do you	
	know all the right people in IT from the help desk team and application experts who can help with immediate problems and advice on how to do things more effectively
	meet IT staff informally do you chat about the business: how well the application is working, possible changes and about our shared interests/acquaintances.
	know the right IT decision makers and senior management team for your business area and are able to approach them to discuss initiatives or projects.
	have formal contacts with IT decision makers and senior management: regular meetings, explaining new products and features, consultation, new product training.
	access to the IT management who make decisions: meet regularly, work alongside them, contributing to decisions about IT investments
	think that the IT team understands the day-to-day activities of your business team very well.
	think that the IT team understands the business strategy and future direction of the firm.
	work together with IT to plan new initiatives such as launching a new business line, acquiring a business, moving to a new location.

Thinking about the importance of IT to the business, do you:	
	believe that IT is essential to everyday operations.
	believe that IT is essential to implementing your business strategy.
	believe that IT is essential to defining your business strategy.
	believe that people in the IT team explain things in an honest way even if there is a problem and they will make an effort not to avoid difficult issues.
	believe that IT is very reliable: for example, little down time, systems are resilient, reliable fixes exist for occasional problems, back-ups and workarounds are in place.
	understand how functions such as email and operational functions contribute to the business.
	understand how IT contributes towards the safe running, risk management and compliance of the business.
	understand how IT contributes towards cost savings.
	understand how IT contributes to the firm's strategy, for example, through IT architecture and planning.
	believe that the Business always looks for opportunities to make improvements
	believe that the Business has a good decision making process and they will take appropriate (but not foolhardy) risk.
	believe that the Business staff argue the case for decisions effectively
	believe that the Business takes responsibility for business-led failures.
	believe that the Business can be trusted to deliver on schedule and to meet expectations of functionality.
	believe that where the Business is unable to deliver, they make specific efforts to help the business understand why they have failed to meet expectations.

Communicating and sharing information with the business, do you:	
	talk regularly to the the Business team who use the applications which your business area provides.
	talk regularly to the the Business team about new technology directions.
	believe that the Business trusts IT to keep them included in IT plans.
	believe that where IT is unable to keep the Business involved in IT plans, those plans are explained afterwards.
	believe that the Business has an excellent understanding of the IT environment and is able to contribute towards your understanding of issues.
	share communications about activities and changes. Is everyone kept well informed.

Thinking about being part of the same business community, do you:	
	believe that you are part of one business community with the Business with shared goals
	put effort into understanding each other's perspective even though you are part of different functions.
	believe that business and IT are subject to the same standards, for example, office conduct, rewards, ethical behaviour.
	believe that business and IT are subject to the same operating rules, for example, time-keeping, dress codes, security.
	believe that business and IT are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity.
	believe that Senior management has the same regard for both business and Business.

Achieving value with IT, do you:	
	believe that the Business is very responsive to the need to implement changes to get minor or short term business benefits.
	believe that the Business is very responsive to the need to implement changes to get long term or major business benefits
	believe that processes in use in are not overly bureaucratic and that the business understands why such processes are needed.
	believe that you work together with the Business to agree priorities.
	believe that the Business is very proactive in implementing changes that allows them to manage the the business more effectively.
	believe that the Business communicates well about what is happening and that Business staff explain technicalities in terms that you understand.
	believe that It would not be possible to achieve the business goals without having reliable IT.
	believe that it is necessary to partner with the Business to make effective decisions about investments in IT.
	believe that IT and the business share the goals and objectives of the firm, agreeing on mutual objectives and working together to enable the success of the firm.

Thinking about the helpfulness of the Business team, do you:	
	find that the Business team is very helpful and explains how to make the best use of the systems. They always look for opportunities to achieve the best solutions.
	believe that the Business team volunteer to get involved in initiatives beyond their strict job descriptions, for example, planning workshops.
Thinking about how well you know the Business team, do you:	
	find it easy to relate to people in the Business team because you come from the same background (for example, education, locality)
	find it easy to relate to people in the Business team because you are from the same generation (for example, same age, have children of similar ages)

Appendix E - Questionnaire preparation

Table E1 - Questionnaire preparation for business respondents.

Using the network to achieve organisational ends:					
1 How well do you know the problem solvers (help desk, application experts)	Not at all - it all goes through a central help desk and I am not likely to speak to the same person twice.	Only people who can help me with immediate problems.	I mainly know people who can help with immediate problems and can give me advice on how to do things more effectively.	I know all the people who can help with immediate problems, can give me advice on how to do things more effectively and can help me access other people in IT	I know all the right people in IT from help with immediate problems, advice on how to do things more effectively and the IT decision makers
2 Do you have formal contact with IT staff who are expert in your business area?	Not at all.	Training only for new products and releases.	Interviews / meetings before a new product is developed and training.	Occasional presentations explaining new products and features, consultation before developing a new product and training.	Regular presentations explaining new products and features, consultation before developing a new product and training.
3 Do you have informal contact with IT staff who are expert in your business area?	Not at all.	I see them occasionally to say hello.	We meet about once every 2 weeks and can chat casually about how well the application is working but I don't really know them.	We meet about once a week, and can chat casually about how well the application is working, and changes which may be happening.	We meet most days and regularly chat casually about how well the application is working, any possible changes and about our shared interests and acquaintances.
Using the network to achieve organisational ends:					
4 Do you have access to the IT management who make decisions?	Not at all.	I know who they are but I don't know how to approach them.	I meet them about once a year for budget setting purposes only.	I meet them at least every quarter and I know how to work alongside them.	We meet regularly and I know how to work alongside them, contributing to decisions about IT.

Sharing an understanding of each other's function:					
5 Do you believe that the IT team understands the day-to-day business?	Not at all.	The application experts understand it well but I'm not sure about anyone else.	The application experts and some IT management understand the business well but I don't know about anyone who doesn't work alongside the business.	Application experts I T management, and and some technical experts understand the business very well.	Application experts I T management, and and technical experts all understand the business very well.
6 Do you believe that the IT team understands the business strategy?	Not at all.	The application experts understand the day-to-day business only.	IT management and some application experts understand the business strategy well but I don't know about anyone who doesn't work alongside the business.	IT management and application experts and some technical experts understand the business strategy.	IT management, application experts and technical experts all understand the business as well as I do.
Sharing processes:					
7 Do you share the same planning process for budgeting?	Not to my knowledge.	We each build our budget according to the firm's guidelines but we don't share underlying data.	We share a common process (e.g given to us by the finance team) and they consult us to build their underlying data but we don't get any information from them.	We share a common process (e.g given to us by the finance team) and they consult us to build their underlying data and we get some limited data from them.	We use a single, shared process with and share all information.

Sharing processes:					
8 Do you share the same planning process to choose which projects are important?	Not to my knowledge.	The IT department decides which projects are achievable and can be done in the budget. We have some input on scheduling.	We decide which are the most important projects and the IT department decides which projects are achievable and can be done in the budget.	We have joint decision making to decide which are the most important projects and the IT department mainly decides on the schedule and if it can be done in budget.	We have joint decision making to decide which are the most important projects, to decide on the scheduling and the movement of any budget.
9 Do you share the same process for managing projects?	Not to my knowledge.	Projects are all managed from IT and they provide project management expertise.	Projects are mainly managed from IT when they provide project management expertise but sometimes we run projects jointly.	Projects are mainly run jointly managed with IT providing project management expertise but sometimes we run projects and use IT expertise.	Projects are run jointly with project management expertise provided from a separate team with all teams pulled in to achieve the project's goals as needed.
Sharing common behaviours:					
10 Do you believe that you belong to the same business community?	Definitely not. We don't have anything in common and I relate more to other people in my own function in other organisations	To a limited extent. We don't have much in common and I would find more in common with other people in my own function in other organisations	Some of the time. We have some goals in common but I find it hard to understand them and often feel they don't understand me.	Most of the time. We share goals and mainly understand their perspective and mainly feel they understand me.	Definitely, we are part of one organisation with shared goals and we put a lot of effort into understanding each other's perspective.

11 Do you believe that you share the same operating rules, for example, having the same rewards?	Definitely not. Our functions are very different.	To a limited extent. Because we don't have much in common, there is not much overlap with operating rules.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we have the same rules.	Most of the time. We have have a lot of common ground so most of the time we have the same rules.	Definitely, we are part of one organisation so we are subject to the same rules.
Sharing common behaviours:					
12 Do you believe that you are subject to the same sanctions, for example, discipline?	Definitely not. Our functions are very different.	To a limited extent. Because our functions are so different, we have different codes of conduct.	Some of the time. We only have some common ground, there is limited overlap but where circumstances are the same, we have the same sanctions.	Most of the time. We have have a lot of common ground so most of the time we have the same sanctions, the only difference being where regulatory controls are different.	Definitely, we are part of one organisation so we are subject to the same sanctions.
12 Do you believe that you are subject to the same sanctions, for example, discipline?	Definitely not. Our functions are very different.	To a limited extent. Because our functions are so different, we have different codes of conduct.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we have the same sanctions.	Most of the time. We have have a lot of common ground so most of the time we have the same sanctions, the only difference being where regulatory controls are different.	Definitely, we are part of one organisation so we are subject to the same sanctions.

13 Do you believe that senior management treat you the same?	Definitely not. Our functions are very different.	To a limited extent. Because our functions are so different, senior management treat us differently.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we are treated the same way by senior management.	Most of the time. We have have a lot of common ground so most of the time we are treated the same way by senior management.	Definitely, we are part of one organisation so we are treated the same way by senior management.
The usefulness / necessity of IT:					
14 Do you believe that IT is valuable to the organisation?	IT is only an essential service for basic functions, such as email.	IT is essential for basic functions and operational functions, such as dealing or back-office systems	IT is an essential service for basic functions such as email and operational functions and has some limited strategic value.	IT provides essential services for basic functions such as email and operational functions and is important in implementing our business strategy.	IT is core to both or everyday operations and to defining and implementing our business strategy.
15 Do you believe that IT behaves with integrity, for example, telling you why there is a system problem?	It is a service function and I don't have any expectations of integrity from the function.	My dealings with them are limited but I believe that they are mainly straightforward but sometimes I think that they avoid difficult issues.	I find most people in IT are happy to explain things in an honest way but sometimes I think that they avoid difficult issues.	I find most people in IT are happy to explain things in an honest way and will make an effort not to avoid difficult issues.	I find most people in IT are happy to explain things in an honest way, make an effort not to avoid difficult issues and will own up if necessary.

16 Do you believe that IT is reliable?	Basic functions are reliable but I am not so happy with our operational systems.	Basic functions are reliable but we occasionally have problems with our operational systems.	Basic functions and operational systems are mainly reliable. Occasional problems are fixed fairly quickly.	Basic functions and operational systems are mainly reliable. Fixes for occasional problems are made available quickly and we have back-ups and workarounds in place.	Basic functions and operational systems are reliable with little down time. Systems are resilient with speedy and reliable fixes for problems. Back-ups and workarounds in place
Communicating and sharing information:					
17 Are you able to talk openly to IT about new developments in IT ?	Not really.	To a limited extent. I only talk to the IT team who service the applications.	I talk to the IT team who service the applications which I use but I also talk to the business analysts and development team occasionally.	I talk to the IT team who service the applications which I use and I regularly talk to the business analysts and development team about new directions.	I talk to the IT team who service the applications which I use and I regularly talk to the business analysts and development team about .
18 Do you believe that IT is prepared to take the initiative?	It is a service function and I don't have any expectations of initiative from the function.	To a limited extent. I think that some things seem to be beyond their scope so they don't have the ability to take the initiative.	To a certain extent. Although some things are beyond their scope they are prepared to take the initiative if something is within their area.	To a great extent. Even if something is beyond their scope, sometimes they are prepared to take the initiative.	IT always looks for opportunities to do things better. Even if something is beyond their scope, hey are prepared to take the initiative and find relevant information and contacts.

19 Do you believe that IT is prepared to take risk to further the business?	It is a service function and I don't have any expectations of risk-taking from the function.	To a limited extent. I think that they don't have the authority to take any risk.	To a certain extent. Although some things are beyond their scope they are prepared to take a little risk if everyone else is in agreement.	To a great extent. Even if something is beyond their scope, sometimes they take some risk and argue the case effectively but are unlikely to act without full senior management support.	IT has a good decision making and will take appropriate risk. They will argue the case effectively and take responsibility for failures.
20 Do you believe that IT can be trusted, for example, to deliver on schedule or to meet expectation of functionality?	Not really.	Only for things that have a signed agreement and then they stick to the letter of the agreement.	Only for things that have a signed agreement but they don't stick rigidly to the letter of the agreement.	Most of the time we have good, trust based agreements but sometimes they don't meet expectations and I don't always understand the reason.	Almost all the time we have good trust based agreements and where they are unable to deliver, we understand why they fail to meet our expectations.
Communicating and sharing information:					
21 Do you believe that IT trusts you, for example, to keep them included in business plans?	Our relationship isn't really governed by trust.	Our relationship is mainly contractual and they know that we keep them informed according to those agreements.	Although our relationship is mainly governed by formal agreements, I think that they know that we don't just stick rigidly to the letter of the agreement and keep them fairly well informed.	Most of the time we have good, trust based agreements but sometimes we don't meet their expectations but I don't think that this is a problem.	Almost all the time we have good trust based agreements and where we are unable to keep IT involved, we explain it afterwards.

The importance of IT to the firm:					
22 Do you believe that you understand the importance of IT to the business, for example in operational systems, security, cost savings and strategic advantage?	No, I don't really know what IT brings to the business.	I have a limited understanding of the importance of basic functions such as email and also operational functions but I have limited understanding of the importance of things like security, cost saving or contribution to strategic advantage.	I understand the importance of basic functions such as email and also operational functions and some understanding of the importance of security and cost savings. I have limited understanding of its contribution to strategic advantage.	I have a strong understanding of the importance of basic functions such as email and operational functions and a good understanding of its contribution towards security and cost savings. I have a reasonable understanding of its contribution to strategic advantage through the IT architecture and planning.	I have a strong understanding of how functions such as email and operational functions contribute to the business and a good understanding of its contribution towards security and cost savings. I have a good understanding of its contribution to strategic advantage through the IT architecture and planning.
23 Do you believe that IT understands the business value drivers?	No, I don't really think that IT understands the business needs.	IT has a limited understanding of the business environment with no understanding of issues.	IT has a fair understanding of the business environment with a little understanding of issues.	IT has a good understanding of the business environment and some understanding of issues.	IT has an excellent understanding of the business environment and is able to contribute towards our understanding of issues.
Creating value:					
24 Are you able to get IT to create short term benefits for you?	Not really. We only get the service and products that is on the IT agenda	To a limited extent. We have to fill in extra forms to get additional services and products.	To a some extent. There is some flexibility in the process and we are able to negotiate to get some minor short term benefits but mainly we have to fill in extra forms to get additional services and products.	To a large extent. The process is fairly flexible and we are able to negotiate to get minor short term benefits without a lot of extra forms to get additional services and products.	IT is very responsive to the need to implement changes to get minor short term benefits. Although we have to follow a process, it isn't overly bureaucratic and we understand why we need it.

25 Are you able to get IT to create long term benefits for you?	Not really. We only get the service and products that is on the IT agenda so this can only be done as part of the budget cycle.	To a limited extent. We have to fill in extra forms to explain why additional services and products are important outside the budget cycle	To a some extent. There is some flexibility in the process and we are able to negotiate to get some long term benefits outside the budget cycle with some limited extra form-filling.	To a large extent. The process is fairly flexible and we are able to negotiate to get long term benefits with a limited amount of extra forms. We are able to work together to agree our priorities.	IT is very responsive to the need to implement changes to get long term benefits. We work together to agree priorities. Although we follow a process, it isn't overly bureaucratic and we understand why we need it.
26 Do you work with IT for short term benefits for IT, for example, implementing systems that make it easier for IT to manage the desktop ?	Not really. I don't really understand the IT function.	To a limited extent. They sometimes explain why they are implementing things but I don't really understand the IT function.	To a some extent. They communicate a little about what is happening and some IT staff explain why some things are useful but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and IT staff explain why some things are useful. Although I understand why these activities are important, I am happy to trust that they know what they are doing.	IT is very proactive in implementing changes that allow them to manage IT more effectively. They communicate well about what is happening and IT staff explain in terms that I understand.
Creating value:					
27 Do you work with IT to create long term benefits for IT, for example to make systems implementation simpler ?	Not really. I don't really understand the IT function.	To a limited extent. They sometimes explain why they are implementing things but I don't really understand the IT function.	To a some extent. They communicate a little about what is happening and some IT staff explain why some things are useful but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and IT staff explain why some things are useful. Although I understand why these activities are important, I am happy to trust that they know what they are doing.	IT is very proactive in implementing changes that allow them to manage IT more effectively. They communicate well about what is happening and IT staff explain in terms that I understand.

Helpfulness and sharing interests:					
28 Do you find IT generally helpful?	Not really. I don't really understand the IT function.	To a limited extent. They sometimes explain why they are implementing things but I don't really understand the IT function.	To a some extent. They communicate a little about what is happening and some IT staff explain why some things are useful but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and IT staff explain why some things are useful. Although I understand why these activities are important, I am happy to trust that they know what they are doing.	Almost all the time. They communicate about what is happening and IT staff explain why some things are useful. I understand why these activities are important and I am happy to trust that they know what they are doing.
29 Does the IT team volunteer to participate in initiatives outside the narrow service role?	Never	Rarely	Sometimes	Frequently	Whenever it is feasible
30 Do you share interests with IT?	Not really. I don't really know the business function.	To a limited extent.	To some extent. We have occasional conversations	To a large extent.	We share a lot of interests.
Helpfulness and sharing interests:					
31 Do you share planning activities?	Not really. I don't really understand the business function.	To a limited extent. They sometimes explain why they are implementing things but I don't really understand the business function.	To a some extent. We share a little.	To a large extent.	Shared planning is fundamental to achieving value and making sure we communicate effectively

Contribution of IT to firm performance:					
32 Does IT add to performance in the firm?	Not really. We only get the service and products that is on the IT agenda not to add to the performanc e of the firm.	To a limited extent. We have to fill in extra forms to explain why additional services and products to add things that enhance the performance of the firm.	To a some extent. There is some flexibility in the process and we are able to negotiate to get some long term benefits products to add things that enhance the performance of the firm.	To a large extent. The process is fairly flexible and we are able to negotiate to get long term benefits. We are able to work together to agree our priorities and introduce products to add things that enhance the performance of the firm.	IT is very responsive to the need to implement changes to get long term benefits. We work together to agree priorities. We are able to work together to agree our priorities and introduce products to add things that enhance the performance of the firm.
33 Do you share goals and objectives with IT?	Not really. I don't really understand the IT function.	To a limited extent. We tend to operate separately.	To a some extent. We tend to operate separately for some things but we do have shared high level goals.	To a large extent. We tend to operate together for most things but we do have some separate goals.	To a great extent. We operate together for most things with few separate goals.
Partnering:					
34 Do you believe that you need IT to achieve goals?	Not really. I don't really understand the IT function.	To a limited extent. In the area that I understand, I would say that it is needed.	To a some extent. In the area that I understand, I would say that it is needed for all activities.	To a large extent. It is essential throughout this business.	IT is essential throughout this business and we would be unlikely to achieve any of our goals without it.
35 Do you believe that you need to partner with IT for decisions?	Not really. We could do just as well without them and just buy in what we need.	To a limited extent. I don't really understand the IT function but sometimes we could do just as well without them and just buy in what we need or do it ourselves.	To a some extent. They communicate a little about what is happening and some business staff explain some decisions but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and I mainly understand why decisions are important, I am happy to trust that they know what they are doing.	Completely. we communicate about decisions and share responsibility for those decisions.

Table E2 - Questionnaire preparation for IS respondents.

Using the network to achieve organisational ends:					
1 How well do you know the mainstream users / the power users.	Not at all - it all goes through a central help desk. They are contacted by the Help Desk.	Only people who can help me with immediate problems.	I mainly know people who can help with immediate problems and can give me advice on how to do things more effectively.	I know all the people who can help with immediate problems, can give me advice on how to do things more effectively and can help me access other people in IT	I know all the right people in the business from those who can help with immediate problems, advice on how to do things more effectively and the business decision makers
2 Do you have formal contact with Business staff who use your technology area?	Not at all.	Training only for new products and releases.	Interviews / meetings before a new product is developed and training.	Occasional presentations explaining new products and features, consultation before developing a new product and training.	Regular presentations explaining new products and features, consultation before developing a new product and training.
Using the network to achieve organisational ends:					
3 Do you have informal contact with the Business staff who are the users of your technology area?	Not at all.	I see them occasionally to say hello.	We meet about once every 2 weeks and can chat casually about how well the application is working but I don't really know them.	We meet about once a week, and can chat casually about how well the application is working, and changes which may be happening.	We meet most days and regularly chat casually about how well the application is working, any possible changes and about our shared interests and acquaintances.
4 Do you have access to the Business management who make decisions?	Not at all.	I know who they are but I don't know how to approach them.	I meet them about once a year for budget setting purposes only.	I meet them at least every quarter and I know how to work alongside them.	We meet regularly and I know how to work alongside them, contributing to decisions about IT.

Sharing an understanding of each other's function:					
5 Do you believe that the Business team understands the day-to-day running of IT?	Not at all.	The application users understand what they need but I'm not sure about anyone else.	The application users and some business management understand the IT that they use but I don't know about anyone who doesn't work alongside IT.	Application users and most business management understand IT very well.	Application users and business management have an excellent understanding of IT across the firm.
6 Do you believe that the Business team understands the IT strategy?	Not at all.	The application users understand the day-to-day IT only.	Business management and some application users understand the IT strategy well but I don't know about anyone who doesn't work alongside IT.	Business management and application users an understand the IT strategy.	Business management and application users all have an excellent understanding of the IT strategy across the firm.
Sharing processes:					
7 Do you share the same planning process for budgeting?	Not to my knowledge.	We each build our budget according to the firm's guidelines but we don't share underlying data.	We share a common process (e.g given to us by the finance team) and they consult us to build their underlying data but we don't get any information from them.	We share a common process (e.g given to us by the finance team) and they consult us to build their underlying data and we get some limited data from them.	We use a single, shared process with and share all information.
8 Do you share the same planning process to choose which projects are important?	Not to my knowledge.	The business decides which projects are achievable and can be done in the budget. We have some input on scheduling.	The business decides which are the most important projects and the IT department decides which projects are achievable and can be done in the budget.	We have joint decision making to decide which are the most important projects and the IT department mainly decides on the schedule and if it can be done in the budget.	We have joint decision making to decide which are the most important projects, to decide on the scheduling and the movement of any budget.

Sharing processes:					
9 Do you share the same process for managing projects?	Not to my knowledge.	Projects are all managed from IT and the business provides subject matter expertise.	Projects are mainly managed from IT the business provides subject matter expertise but sometimes we run projects jointly.	Projects are mainly run jointly managed with IT providing project management expertise but sometimes the business runs projects and use IT expertise.	Projects are run jointly with project management expertise being provided from a separate team with all teams pulled in to achieve the project's goals as needed.
Sharing common behaviours:					
10 Do you believe that you belong to the same business community?	Definitely not. We don't have anything in common and I relate more to other people in my own function in other organisations.	To a limited extent. We don't have much in common and I would find more in common with other people in my own function in other organisations.	Some of the time. We have some goals in common but I find it hard to understand them and often feel they don't understand me.	Most of the time. We share goals and mainly understand their perspective and mainly feel they understand me.	Definitely, we are part of one organisation with shared goals and we put a lot of effort into understanding each other's perspective.
11 Do you believe that you share the same operating rules, for example, having the same rewards?	Definitely not. Our functions are very different.	To a limited extent. Because we don't have much in common, there is not much overlap with operating rules.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we have the same rules.	Most of the time. We have have a lot of common ground so most of the time we have the same rules.	Definitely, we are part of one organisation so we are subject to the same rules.
12 Do you believe that you are subject to the same sanctions, for example, discipline?	Definitely not. Our functions are very different.	To a limited extent. Because our functions are so different, we have different codes of conduct.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we have the same sanctions.	Most of the time. We have have a lot of common ground so most of the time we have the same sanctions, the only difference being where regulatory controls are different.	Definitely, we are part of one organisation so we are subject to the same sanctions.

Sharing common behaviours:					
13 Do you believe that senior management treat you the same?	Definitely not. Our functions are very different.	To a limited extent. Because our functions are so different, senior management treat us differently.	Some of the time. Because we only have some common ground, there is limited overlap but where circumstances are the same, we are treated the same way by senior management.	Most of the time. We have have a lot of common ground so most of the time we are treated the same way by senior management.	Definitely, we are part of one organisation so we are treated the same way by senior management.
The usefulness / necessity of IT:					
14 Do you believe that IT is valuable to the organisation?	IT is only an essential service for basic functions, such as email.	IT is an essential service for basic functions such as email and also operational functions, such as dealing or back-office systems but does not give us any strategic advantage.	IT is an essential service for basic functions such as email and operational functions and has some limited strategic value.	IT provides essential services for basic functions such as email and operational functions and is important in implementing our business strategy.	IT is core to both or everyday operations and to defining and implementing our business strategy.
15 Do you believe that the Business behaves with integrity?	IT is a service function and we don't have any expectations of things like integrity.	My dealings with them are limited but I believe that they are mainly straightforward but sometimes I think that they avoid difficult issues.	I find most people in the business are happy to explain things in an honest way but sometimes I think that they avoid difficult issues.	I find most people in the business are happy to explain things in an honest way and will make an effort not to avoid difficult issues.	I find most people in the business are happy to explain things in an honest way, will make an effort not to avoid difficult issues and are prepared to own up if necessary.

The usefulness / necessity of IT:					
16 Do you believe that IT is reliable?	Basic functions are reliable with occasional problems with our operational systems	Basic functions are reliable but we occasionally have problems with our operational systems	Basic functions and operational systems are mainly reliable. Occasional problems are fixed fairly quickly.	Basic functions and operational systems are mainly reliable. Fixes for occasional problems are made available quickly and we have back-ups and workarounds in place.	Basic functions and operational systems are reliable with very little down time. Systems are very resilient with speedy and reliable fixes for occasional problems. Back-ups and workarounds in place.
Communicating and sharing information:					
17 Are you able to talk openly to the business about new developments in IT ?	Not really.	To a limited extent. I only talk to the business team who use the applications that my team provides	I talk to the business team who use the applications that my team provides and also to key decision makers occasionally.	I talk to the business team who use the applications that my team provides and also to key decision makers regularly and we talk about new directions.	I talk to the business team who use the applications my team provides and also to key decision makers regularly. We have a regular forum to talk about new directions.
18 Do you believe that the Business is prepared to take the initiative?	We are a service function and I don't have any expectations of initiative from the function.	To a limited extent. I think that some things seem to be beyond their scope so they don't have the ability to take the initiative.	To a certain extent. Although some things are beyond their scope they are prepared to take the initiative if something is within their area.	To a great extent. Even if something is beyond their scope, sometimes they are prepared to take the initiative.	The business looks for opportunities to do things better. Even if something is beyond their scope, hey are prepared to take the initiative and find relevant information and contacts.

Communicating and sharing information:					
19 Do you believe that the Business is prepared to take risk to further the business?	We are solely a service function and I don't have any view on risk-taking.	To a limited extent. I think that they don't have the authority to take any risk.	To a certain extent. Although some things are beyond their scope they are prepared to take a little risk if everyone else is in agreement.	To a great extent. If something is beyond their scope, they are prepared to take some risk and argue the case effectively but are unlikely to act without full senior management support.	The business has a good decision making and will take appropriate risk. They will argue the case effectively and take responsibility for failures.
20 Do you believe that the Business can be trusted, for example, to deliver on schedule or to meet commitments?	Not really.	Only for things that have a signed agreement and then they stick to the letter of the agreement.	Only for things that have a signed agreement but they don't stick rigidly to the letter of the agreement.	Most of the time we have good, trust based agreements but sometimes they don't meet expectations and I don't always understand the reason.	Almost all the time we have good trust based agreements and where they are unable to deliver, we understand why they fail to meet our expectations.
21 Do you believe that the business trusts you, for example, to keep them included in IT plans?	Our relationship isn't really governed by trust.	Our relationship is mainly contractual and they know that we keep them informed according to those agreements.	Although our relationship is mainly governed by formal agreements, I think that they know that we don't just stick rigidly to the letter of the agreement and keep them fairly well informed.	Most of the time we have good, trust based agreements but sometimes we don't meet their expectations but I don't think that this is a problem.	Almost all the time we have good trust based agreements and where we are unable to keep them involved, we explain it afterwards.

The importance of IT to the firm:					
22 Do you believe that you understand the importance of IT to the business, for example in operational systems, security, cost savings and strategic advantage?	No, I have very limited knowledge of how IT brings value to the business.	I have a limited understanding of the importance of basic functions such as email and also operational functions but I have limited understanding of the importance of things like security, cost saving or contribution to strategic advantage.	I understand the importance of basic functions such as email and also operational functions and some understanding of the importance of security and cost savings. I have limited understanding of its contribution to strategic advantage.	I have a strong understanding of the importance of basic functions such as email and operational functions and a good understanding of its contribution towards security and cost savings. I have a reasonable understanding of its contribution to strategic advantage through the IT architecture and planning.	I have a strong understanding of how functions such as email and operational functions contribute to the business and a good understanding of its contribution towards security and cost savings. I have a good understanding of its contribution to strategic advantage through the IT architecture and planning.
23 Do you believe that the business understands the the value that IT brings?	No, I don't really think that the business understands IT.	The business has a limited understanding of the IT environment with no understanding of issues.	The business has a fair understanding of the IT environment with a little understanding of issues.	The business has a good understanding of the IT environment and some understanding of issues.	The business has an excellent understanding of the IT environment and is able to contribute towards our understanding of issues.
Creating value:					
24 Are you able to use IT to create short term benefits for the business?	Not really. We only provide the service and products that is included in the service agreement.	To a limited extent. We have to fill in extra forms to get additional services and products.	To a some extent. There is some flexibility in the process and we are able to negotiate to get some minor short term benefits but mainly we have to fill in extra forms to get additional services and products.	To a large extent. The process is fairly flexible and we are able to negotiate to get minor short term benefits without a lot of extra forms to get additional services and products.	IT is very responsive to the need to implement changes to get minor short term benefits. Although we have to follow a process, it isn't overly bureaucratic and we understand why we need it.

25 Are you able to use IT to create long term benefits the business?	Not really. We only provide the service and products that is included in the service agreement so this can only be done as part of the budget cycle.	To a limited extent. We have to fill in extra forms to explain why additional services and products are important outside the budget cycle.	To a some extent. There is some flexibility in the process and we are able to negotiate to get some long term benefits outside the budget cycle with some limited extra form-filling.	To a large extent. The process is fairly flexible and we are able to negotiate to get long term benefits with a limited amount of extra forms. We are able to work together to agree our priorities.	IT is very responsive to the need to implement changes to get long term benefits. We work together to agree priorities. Although we follow a process, it isn't overly bureaucratic and we understand why we need it.
26 Do you work with Business for short term benefits to manage IT more effectively?	Not really. The business function doesn't really understand IT.	To a limited extent. The business function has limited understanding of IT.	To a some extent. The business function has some understanding of IT.	To a large extent. Although they understand why these activities are important, they are am happy that we know what we are doing.	The business is interested and supportive when we need to implement changes that allow us to manage IT more effectively. They are happy to discuss the benefits and impact.
27 Do you work with the Business to create long term benefits to manage IT more effectively?	Not really. The business function doesn't really understand IT.	To a limited extent. The business function has limited understanding of IT.	To a some extent. The business function has some understanding of IT.	To a large extent. Although they understand why these activities are important, they are am happy that we know what we are doing.	The business is interested and supportive when we need to implement changes that allow us to manage IT more effectively. They are happy to discuss the benefits and impact.

Helpfulness:					
28 Do you find the Business generally helpful?	Not really. They don't really understand the IT function.	To a limited extent. They sometimes explain why they are doing things but I don't really understand the business function.	To a some extent. They communicate a little about what is happening and some business staff explain why some things are useful but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and business staff explain why some things are useful. Although I understand why these activities are important, I am happy to trust that they know what they are doing.	Almost all the time. They communicate what is happening and explain why some things are useful. I understand why these are important and I am happy to trust that they know what they are doing.
29 Does the Business team volunteer to participate in initiatives outside their role?	Never	Rarely	Sometimes	Frequently	Whenever it is feasible
30 Do you share interests with the Business ?	Not really. I don't really know the business function.	To a limited extent.	To some extent. We have occasional conversations	To a large extent.	We share a lot of interests.
31 Do you share planning activities?	Not really. I don't really understand the business function.	To a limited extent. They sometimes explain why they are implementing things but I don't really understand the business function.	To a some extent. We share a little.	To a large extent.	Shared planning is fundamental to achieving value and making sure we communicate effectively

Contribution of IT to firm performance:					
32 Does IT add to performance in the firm?	Not really. We only provide the service and products that is included in the service agreement so this can only be done as part of the budget cycle.	To a limited extent. We have to fill in extra forms to explain why additional services and products to add things that enhance the performance of the firm.	To a some extent. There is some flexibility in the process and we are able to negotiate to get some long term benefits products to add things that enhance the performance of the firm.	To a large extent. The process is fairly flexible and we are able to negotiate to get long term benefits. We are able to work together to agree our priorities and introduce products to add things that enhance the performance of the firm.	IT is very responsive to the need to implement changes to get long term benefits. We work together to agree priorities. We are able to work together to agree our priorities and introduce products to add things that enhance the performance of the firm.
33 Do you share goals and objectives with the Business?	Not really. I don't really understand the Business function.	To a limited extent. We tend to operate separately.	To a some extent. We tend to operate separately for some things but we do have shared high level goals.	To a large extent. We tend to operate together for most things but we do have some separate goals.	To a great extent. We operate together for most things with few separate goals.
Partnering:					
34 Do you believe that IT is needed to achieve the business goals?	Not really. I don't really understand the Business function.	To a limited extent. In the area that I understand, I would say that it is needed.	To a some extent. In the area that I understand, I would say that it is needed for all activities.	To a large extent. It is essential throughout this business.	IT is essential throughout this business and we would be unlikely to achieve any of our goals without it.
35 Do you believe that you need to partner with the business for decisions?	Not really. We could just be part of a bought in service	To a limited extent. I don't really understand the business function but we could be outsourced.	To a some extent. They communicate a little about what is happening and some business staff explain some decisions but these activities are mainly outside my scope and expertise.	To a large extent. They communicate about what is happening and I mainly understand why decisions are important, I am happy to trust that they know what they are doing.	Completely. we communicate about decisions and share responsibility for those decisions.

Table E3 - Questionnaire preparation for business respondents.

Perspective	Example
Using the network to achieve organisational ends	How well do you know the problem solvers (help desk, application experts)
	Do you have formal contact with IT staff who are expert in your business area?
	Do you have informal contact with IT staff who are expert in your business area?
	Do you have access to the IT management who make decisions?
Sharing an understanding of each other's perspective	Do you believe that the IT team understands the day-to-day business?
	Do you believe that the IT team understands the business strategy?
	Do you share the same planning process for budgeting?
	Do you share the same planning process to choose which projects are important?
	Do you share the same process for managing projects?
	Do you believe that you belong to the same business community?
	Do you believe that you share the same operating rules, for example, having the same rewards?
	Do you believe that you are subject to the same sanctions, for example, discipline?
	Do you believe that senior management treat you the same?
The usefulness / necessity of IT	Do you believe that IT is valuable to the organisation?
	Do you believe that IT is reliable?
Trust	Do you believe that IT behaves with integrity, for example, telling you why there is a system problem?
	Do you believe that IT is prepared to take the initiative?
	Do you believe that IT is prepared to take risk to further the business?
	Do you believe that IT can be trusted, for example, to deliver on schedule or to meet expectation of functionality?
	Do you believe that IT trusts you, for example, to keep them included in business plans?

Perspective	Example
Achieving value with IT	Do you believe that you understand the importance of IT to the business, for example in operational systems, security, cost savings and strategic advantage?
	Do you believe that IT understands the business value drivers?
	Are you able to get IT to create short term benefits for you?
	Are you able to get IT to create long term benefits for you?
	Do you work with IT for short term benefits for IT, for example, implementing systems that make it easier for IT to manage the desktop ?
	Do you work with IT to create long term benefits for IT, for example to make systems implementation simpler ?
Communicating and sharing information with IT	Are you able to talk openly to IT about new developments in IT ?
	Do you find IT generally helpful?
	Does the IT team volunteer to participate in initiatives outside the narrow service role?
	Do you share interests with IT?
	Do you share planning activities?
	Does IT add to performance in the firm?
	Do you share goals and objectives with IT?
	Do you believe that you need IT to achieve goals?
	Do you believe that you need to partner with IT for decisions?

Table E4 - Questionnaire preparation for IS respondents.

Perspective	Example
Using the network to achieve organisational ends	How well do you know the mainstream users / the power users.
	Do you have formal contact with Business staff who use your technology area?
	Do you have informal contact with the Business staff who are the users of your technology area?
	Do you have access to the Business management who make decisions?
Sharing an understanding of each other's perspective	Do you believe that the Business team understands the day-to-day running of IT?
	Do you believe that the Business team understands the IT strategy?
	Do you share the same planning process for budgeting?
	Do you share the same planning process to choose which projects are important?
	Do you share the same process for managing projects?
	Do you believe that you belong to the same business community?
	Do you believe that you share the same operating rules, for example, having the same rewards?
	Do you believe that you are subject to the same sanctions, for example, discipline?
	Do you believe that senior management treat you the same?
The usefulness / necessity of IT	Do you believe that IT is valuable to the organisation?
	Do you believe that IT is reliable?
Trust	Do you believe that the business behaves with integrity, for example, telling you why there is a system problem?
	Do you believe the business is prepared to take the initiative?
	Do you believe that the business is prepared to take risk to further the business?

Perspective	Example
	Do you believe that the business can be trusted, for example, to deliver on schedule or to meet expectation of functionality?
	Do you believe that the business trusts you, for example, to keep them included in business plans?
Achieving value with IT	Do you believe that you understand the importance of IT to the business, for example in operational systems, security, cost savings and strategic advantage?
	Do you believe that the business understands the the value that IT brings?
	Are you able to use IT to create short term benefits for the business?
	Are you able to use IT to create long term benefits the business?
	Do you work with business for short term benefits to manage IT more effectively?
	Do you work with the Business to create long term benefits to manage IT more effectively?
Communicating and sharing information with IT	Are you able to talk openly to the business about new developments in IT ?
	Do you find the business generally helpful?
	Does the business team volunteer to participate in initiatives outside the normal role?
	Do you share interests with the business?
	Do you share planning activities?
	Does IT add to performance in the firm?
	Do you share goals and objectives with the business?
	Do you believe that you need IT to achieve business goals?
	Do you believe that you need to partner with the business for decisions?

Appendix F - Mapping questionnaire statements to the conceptual framework

Table F1 - Dimensions, attributes and statements

Dimension	Attribute	Statement
Networks	Network associations	I know all the right people in the other team who can discuss how to do things more effectively
		I know the other team well.
		I talk regularly to people in the other team who provide / use the systems relevant to my business area.
	Formal / informal communications	I have formal contacts with decision makers in the other team..
		I have frequent informal contact with people in the other team who use/ manage the technology relevant to my area.
		When I meet staff from the other team informally we chat about the business.
		When I meet staff from the other team informally we chat about technology matters.
	Access to decision makers	I know who are all the right decision makers in the other team relevant to my area.
		I can approach relevant decision makers in the other team to discuss initiatives or projects.
		I know all the decision makers who can help me understand how IT can support the business to be more effective.
	Homophily	I share an educational background with people in the other team.
		I live in the same locality as people in the other team.
		I am roughly the same age as most people in the other team.
		We find it easy to talk about our family backgrounds.
		I share outside interests with people in the other team.
Shared Norms	Community of purpose	I get on well with people in the other team.
		The other team understands the day-to-day activities of the my functional area very well.
		The other team has an excellent understanding of the operating environment of my area very well..
		Staff in the other team explain technicalities in terms that I understand.
	Processes	We use a shared planning process for budgeting.
		We use a common process for managing projects.
	Common understanding of value	I understand how functions such as email and operational functions contribute to the business
		I understand how IT contributes towards the safe running of the business.
		I understand how IT contributes towards cost savings.
		I understand how IT contributes to the firms strategy.
	Fairness and Sanctions	Senior management has the same regard for both business and IT.
		We are subject to the same standards, for example, office conduct, rewards, ethical behaviour.
		We are subject to the same operating rules, for example, time-keeping, dress codes, security.
		We are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity.

Dimension	Attribute	Statement
Trust	Value and integrity	The other team trusts us to keep them included in future plans.
		We put a lot of effort into understanding each other's perspective.
		IT and the business share the goals and objectives of the firm.
		We share all the budget information and assumptions.
	Reliability	The other team takes responsibility for failures which originate in their area.
		The other team can be trusted to deliver on schedule.
		The other team can be trusted to meet expectations of functionality.
		The other team argue the case for decisions effectively
	Willingness to take risk or initiative	The other team will take the initiative to promote something which they believe is useful.
		The other team takes appropriate (but not foolhardy) risk.
		The other team has a good decision making process.
	Generating and receiving trust	The other team team explain things in an honest way.
		The other team will make an effort not to avoid difficult issues.
		Where the other team is unable to deliver, they make specific efforts to help us understand why they have failed to meet expectations.
Reciprocity Expectation	Shared understanding of each other's value to the organisation	IT is essential to everyday operations.
		IT is essential to implementing our business strategy.
		IT is essential to defining our business strategy.
		The other team understands the business / technology strategy and future direction very well.
		The other team is able to contribute towards our understanding of complex issues.
	Benefits or services returned in the long or short term	If we are unable to keep the other team involved in future plans, we take care to explain it afterwards.
		IT is very responsive to the need to implement changes to get minor or short term business benefits.
		IT is very responsive to the need to implement changes to get long term or major business benefits
		We understand the need to implement changes that allows the firm to manage the technology more effectively.
	General helpfulness	The other team always looks for opportunities to make improvements.
		The other team volunteer to get involved in initiatives beyond their strict job descriptions, for example, planning workshops.
		The other team is very helpful and explains how to make / achieve the best use of systems.
		The other team always looks for opportunities to help us achieve the best solutions.
	Convergent interests	It would not be possible to achieve our business goals without having reliable IT.
		When we have a system problem, we work together solve it.
		I talk regularly to the other team about new technology directions.

Dimension	Attribute	Statement
Collective efficacy	Superior performance	IT is very reliable.
		When we have a system problem there are speedy and reliable fixes, back-ups or workarounds.
		Our process for managing projects brings all relevant teams together very effectively.
		Processes aren't over bureaucratic and we understand why we need them.
		Everyone is kept well informed about activities and changes.
	Group partnering for major decisions	I know how to work with the relevant decision makers in the other team, contributing to decisions about IT investments relevant to my area.
		We work together with the other team to agree priorities.
		We share communications about activities and changes.
		We are part of one business community with shared goals.
		Business and IT work together to plan new initiatives.
		We use a common process to decide which projects are important for the business.
	Access to financial power	We have joint decision making to decide on scheduling.
		It is necessary to partner with the other team to make effective decisions about investments in IT.
		We have joint decision making to agree the allocation of budget.

Appendix G - Qualitative data : average scores

The table below shows the average score for each code grouped by attribute and dimension. Note: these are the raw scores before weighting.

Table G 1 - average scores (unweighted) by dimension and attribute

Dimension	Attribute	Code	IS score	Business score	Difference
Mutual obligations	Working together	IT is essential for business success	2.57	2.40	0.17
		Kept up-to-date by the other side	0.75	1.44	-0.69
		Understand cost and value of IT	-0.71	1.14	-1.85
		Understanding their direction	1.58	1.89	-0.31
		Working together to get the best solutions	0.18	1.52	-1.34
	Helpfulness	Helpful with explanations	-0.35	2.14	-2.49
		Helpfulness of communication	1.91	1.38	0.53
		Looking for improvements	-0.54	1.38	-1.92
		Relationships for support or advice	1.67	0.79	0.88
		Seeking best solutions	-0.94	1.84	-2.78
		Volunteering outside their role	-1.23	0.50	0.41
	Responsiveness to change	Responsive to changes to manage IT more effectively	-0.50	-0.67	0.17
		Responsive to long term changes	2.00	1.58	0.42
		Responsive to short term changes	1.18	-0.30	1.48
	Mutual need	Contributes towards understanding issues	-0.62	1.86	-2.48

Dimension	Attribute	Code	IS score	Business score	Difference
		Long term expectation of the relationship	1.88	1.40	0.48
		Need IT for everyday functions	1.83	2.65	-0.82
		Need IT for strategic implementation	2.07	1.84	0.23
		Need IT for strategy development	0.10	-0.81	0.91
		Shared problem solving	0.44	1.86	-1.42
Network relationships	Access to decision makers and influencers	Access to external service providers	0.00	0.73	-0.73
		Access to internal service providers	1.58	0.73	0.85
		Decision makers are approachable	1.55	0.19	1.36
		Knowing the decision makers	1.83	0.44	1.39
		Knowing who are the decision makers	1.93	1.15	0.78
	Creating the right formal and informal contact mix	Face off to a specific person / team	2.07	1.46	0.61
		Formal contact	1.86	1.67	0.19
		Informal contact	1.79	1.55	0.24
		Proximity	2.33	1.45	0.88
		Relationship between delivery and business	1.89	1.30	0.59
	How alike they are to the other team	Heterogeneity	1.00	2.00	-1
		Shared age and or generation	0.71	-0.22	0.93
		Shared background	-0.58	-0.67	0.090000000 0000001
		Shared education	1.00	-1.41	2.41
		Shared outside interests	-0.17	0.05	-0.22
	Knowing people	Building long-standing relationships	2.04	1.28	0.76

Dimension	Attribute	Code	IS score	Business score	Difference
		Business conversations	1.56	1.68	-0.12
		Clarity of other team's role	1.47	0.62	0.85
		Communications between the groups	2.18	1.65	0.53
		Ease of the relationship	1.59	1.45	0.14
		Getting on well together	1.88	1.61	0.27
		Indirect relationships for advice	2.00	0.30	1.7
		Knowing people well	1.26	1.05	0.21
		Prior relationships	2.00	1.58	0.42
		Technology conversations	0.50	0.75	-0.25
Shared Norms	Fairness and equal treatment	Equitable treatment	2.63	2.41	0.22
		Regard by senior management	-2.67	-2.33	-0.34
	Usefulness of process	Shared process	-1.44	0.80	-2.24
		Short circuit process	2.10	2.40	-0.3
		Value of professional process	1.67	1.82	-0.15
	Shared community	Shared history	-0.67	0.87	-1.54
		Understanding our function	0.18	1.05	-0.87
		Understanding our language	0.00	-0.04	0.04
		Understanding our operating environment	-0.27	0.88	-1.15
	Shared identity	Competing with colleagues	-3.00	0.00	-3
		Part of a professional group	-1.00	-2.12	1.12
		Cost saving contribution	1.00	0.86	0.14
		Operational contribution	1.70	2.11	-0.41

Dimension	Attribute	Code	IS score	Business score	Difference
		Process belongs in IT	2.51	2.37	0.14
		Risk management contribution	1.07	1.59	-0.52
		Service provider	2.68	2.82	-0.14
		Strategic contribution of IT	-0.05	0.86	-0.91
Trust	Feeling valued	Feeling empowered	-1.67	-0.65	-1.02
		Feeling understood	-1.75	-1.17	-0.58
		Future plans shared	1.59	1.49	0.1
		Shared perspective	0.19	0.53	-0.34
		Sharing organisation's goals	1.08	1.28	-0.2
		Sharing sensitive information	1.71	1.08	0.63
		Feeling trusted	1.73	1.89	-0.16
		Fair and reasonable explanations	1.20	1.85	-0.65
		Honest explanations	1.43	2.04	-0.61
		Not avoiding difficult issues	1.00	1.56	-0.56
		Owning up	1.00	2.11	-1.11
	Reliability	Development of trust over time	2.10	1.90	0.2
		Good decision making	-0.78	1.18	-1.96
		Professional competence	-0.10	1.89	-1.99
		Trust in functional delivery	-0.80	1.69	-2.49
		Trust in timely delivery	-0.75	1.43	-2.18
	Attitude to risk	Benefits promoted	0.25	0.36	-0.11
		Effective arguing of their case	-1.50	0.65	-2.15
		Good risk taking	0.50	0.72	-0.22
Collective efficacy	Accessing financial	Budget allocation is made jointly	0.00	0.19	-0.19

Dimension	Attribute	Code	IS score	Business score	Difference
	power	Partnering for financial decision making	0.53	0.91	-0.38
		Scheduling agreed jointly	0.88	1.14	-0.26
	Making decisions together	Common process for priority setting	-0.64	1.45	-2.09
		Feeling part of a single business community	-0.41	0.86	-1.27
		Knowing how to work with decision makers	0.31	1.37	-1.06
		Sharing communications	-0.14	0.56	-0.7
		Working together on initiative planning	-0.25	1.95	-2.2
		Working together to agree priorities	0.06	1.50	-1.44
	Getting a good performance for the firm	Acceptable levels of bureaucracy	0.42	-0.33	0.75
		Effective project process	1.00	0.81	0.19
		Good communications	0.71	0.85	-0.14
		IT is good value	1.00	2.25	-1.25
		Quick and effective solution to problems	1.22	0.42	0.8
		Reliable IT	0.89	1.54	-0.65

Appendix H - Quantitative data - Mann-Whitney U test

Table H1 - Mann-Whitney U test mean ranks

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
I know all the right people in the other team who can discuss how to do things more effectively	Business	46	40.12	1845.50
	IS	48	54.57	2619.50
	Total	94		
I know the other team well.	Business	46	41.92	1928.50
	IS	48	52.84	2536.50
	Total	94		
I talk regularly to people in the other team who provide / use the systems relevant to my business area.	Business	46	40.97	1884.50
	IS	48	53.76	2580.50
	Total	94		
I have formal contacts with decision makers in the other team..	Business	46	43.84	2016.50
	IS	48	51.01	2448.50
	Total	94		
I have frequent informal contact with people in the other team who use/ manage the technology relevant to my area.	Business	46	41.12	1891.50
	IS	48	53.61	2573.50
	Total	94		
I know who are all the right decision makers in the other team relevant to my area.	Business	46	42.26	1944.00
	IS	48	52.52	2521.00
	Total	94		
I can approach relevant decision makers in the other team to discuss initiatives or projects.	Business	46	44.72	2057.00
	IS	48	50.17	2408.00
	Total	94		
I know all the decision makers who can help me understand how IT can support the business to be more effective.	Business	46	37.20	1711.00
	IS	48	57.38	2754.00
	Total	94		
When I meet staff from the other team informally we chat about the business	Business	46	44.73	2057.50
	IS	48	50.16	2407.50
	Total	94		

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
When I meet staff from the other team informally we chat about technology matters.	Business	46	49.51	2277.50
	IS	48	45.57	2187.50
	Total	94		
The other team understands the day-to-day activities of the my functional area very well.	Business	46	54.47	2505.50
	IS	48	40.82	1959.50
	Total	94		
The other team has an excellent understanding of the operating environment of my area very well..	Business	46	49.71	2286.50
	IS	48	45.39	2178.50
	Total	94		
We share all the budget information and assumptions.	Business	46	45.08	2073.50
	IS	48	49.82	2391.50
	Total	94		
Staff in the other team explain technicalities in terms that I understand.	Business	46	44.09	2028.00
	IS	48	50.77	2437.00
	Total	94		
We use a shared planning process for budgeting.	Business	46	48.21	2217.50
	IS	48	46.82	2247.50
	Total	94		
We use a common process for managing projects.	Business	46	42.64	1961.50
	IS	48	52.16	2503.50
	Total	94		
We put a lot of effort into understanding each others perspective	Business	46	44.11	2029.00
	IS	48	50.75	2436.00
	Total	94		
I get on well with people in the other team.	Business	46	43.52	2002.00
	IS	48	51.31	2463.00
	Total	94		
I share an educational background with people in the other team.	Business	46	40.43	1860.00
	IS	48	54.27	2605.00
	Total	94		
I live in the same locality as people in the other team.	Business	46	43.00	1978.00
	IS	48	51.81	2487.00

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
	Total	94		
I am roughly the same age as most people in the other team.	Business	46	47.01	2162.50
	IS	48	47.97	2302.50
	Total	94		
We find it easy to talk about our family backgrounds.	Business	46	45.00	2070.00
	IS	48	49.90	2395.00
	Total	94		
I share outside interests with people in the other team.	Business	46	51.10	2350.50
	IS	48	44.05	2114.50
	Total	94		
Senior management has the same regard for both business and IT.	Business	46	48.03	2209.50
	IS	48	46.99	2255.50
	Total	94		
We are subject to the same standards, for example, office conduct, rewards, ethical behaviour.	Business	46	47.17	2170.00
	IS	48	47.81	2295.00
	Total	94		
We are subject to the same operating rules, for example, time-keeping, dress codes, security.	Business	46	42.30	1946.00
	IS	48	52.48	2519.00
	Total	94		
We are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity.	Business	46	46.38	2133.50
	IS	48	48.57	2331.50
	Total	94		
The other team takes responsibility for failures which originate in their area.	Business	46	52.79	2428.50
	IS	48	42.43	2036.50
	Total	94		
The other team trusts us to keep them included in future plans.	Business	46	41.97	1930.50
	IS	48	52.80	2534.50
	Total	94		
The other team can be trusted to deliver on schedule.	Business	46	48.09	2212.00
	IS	48	46.94	2253.00

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
	Total	94		
The other team can be trusted to meet expectations of functionality.	Business	46	52.97	2436.50
	IS	48	42.26	2028.50
	Total	94		
I know how to work with the relevant decision makers in the other team, contributing to decisions about IT investments relevant to my area.	Business	46	41.29	1899.50
	IS	48	53.45	2565.50
	Total	94		
The other team will take the initiative to promote something which they believe is useful.	Business	46	42.14	1938.50
	IS	48	52.64	2526.50
	Total	94		
The other team takes appropriate (but not foolhardy) risk.	Business	46	42.23	1942.50
	IS	48	52.55	2522.50
	Total	94		
If we are unable to keep the other team involved in future plans, we take care to explain it afterwards.	Business	46	39.54	1819.00
	IS	48	55.13	2646.00
	Total	94		
The other team team explain things in an honest way.	Business	46	50.13	2306.00
	IS	48	44.98	2159.00
	Total	94		
The other team will make an effort not to avoid difficult issues.	Business	46	48.41	2227.00
	IS	48	46.63	2238.00
	Total	94		
Where the other team is unable to deliver, they make specific efforts to help us understand why they have failed to meet expectations.	Business	46	51.27	2358.50
	IS	48	43.89	2106.50
	Total	94		
IT is essential to everyday operations.	Business	46	47.78	2198.00
	IS	48	47.23	2267.00
	Total	94		
IT is essential to implementing our business strategy.	Business	46	46.93	2159.00
	IS	48	48.04	2306.00

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
	Total	94		
IT is essential to defining our business strategy.	Business	46	43.08	1981.50
	IS	48	51.74	2483.50
	Total	94		
I understand how functions such as email and operational functions contribute to the business	Business	46	46.35	2132.00
	IS	48	48.60	2333.00
	Total	94		
I understand how IT contributes towards the safe running of the business.	Business	46	44.48	2046.00
	IS	48	50.40	2419.00
	Total	94		
I understand how IT contributes towards cost savings.	Business	46	40.54	1865.00
	IS	48	54.17	2600.00
	Total	94		
I understand how IT contributes to the firms strategy.	Business	46	43.02	1979.00
	IS	48	51.79	2486.00
	Total	94		
We work together with the to agree priorities.	Business	46	42.36	1948.50
	IS	48	52.43	2516.50
	Total	94		
The other team always looks for opportunities to make improvements.	Business	46	44.76	2059.00
	IS	48	50.13	2406.00
	Total	94		
The other team volunteer to get involved in initiatives beyond their strict job descriptions, for example, planning workshops.	Business	46	50.23	2310.50
	IS	48	44.89	2154.50
	Total	94		
The other team is very helpful and explains how to make / achieve the best use of systems.	Business	46	46.24	2127.00
	IS	48	48.71	2338.00
	Total	94		
The other team always looks for opportunities to help us achieve the best solutions.	Business	46	50.66	2330.50
	IS	48	44.47	2134.50
	Total	94		
IT and the business share the	Business	46	49.67	2285.00

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
goals and objectives of the firm.	IS	48	45.42	2180.00
	Total	94		
It would not be possible to achieve our business goals without having reliable IT.	Business	46	50.63	2329.00
	IS	48	44.50	2136.00
	Total	94		
When we have a system problem, we work together solve it.	Business	45	43.99	1979.50
	IS	48	49.82	2391.50
	Total	93		
I talk regularly to the other team about new technology directions.	Business	46	40.97	1884.50
	IS	48	53.76	2580.50
	Total	94		
IT is very reliable.	Business	46	46.75	2150.50
	IS	48	48.22	2314.50
	Total	94		
When we have a system problem there are speedy and reliable fixes, back-ups or workarounds.	Business	46	49.29	2267.50
	IS	48	45.78	2197.50
	Total	94		
IT is very responsive to the need to implement changes to get minor or short term business benefits.	Business	46	42.36	1948.50
	IS	48	52.43	2516.50
	Total	94		
IT is very responsive to the need to implement changes to get long term or major business benefits	Business	46	41.05	1888.50
	IS	48	53.68	2576.50
	Total	94		
We understand the need to implement changes that allows the firm to manage the technology more effectively.	Business	46	47.79	2198.50
	IS	48	47.22	2266.50
	Total	94		
The other team understands the business / technology strategy and future direction very well.	Business	46	47.35	2178.00
	IS	48	47.65	2287.00
	Total	94		
We share communications about activities and changes.	Business	46	40.99	1885.50
	IS	48	53.74	2579.50

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
	Total	94		
The other team has a good decision making process.	Business	46	47.93	2205.00
	IS	48	47.08	2260.00
	Total	94		
Processes aren't over bureaucratic and we understand why we need them.	Business	46	43.73	2011.50
	IS	48	51.11	2453.50
	Total	94		
Our process for managing projects brings all relevant teams together very effectively.	Business	46	41.99	1931.50
	IS	48	52.78	2533.50
	Total	94		
We are part of one business community with shared goals.	Business	46	41.50	1909.00
	IS	48	53.25	2556.00
	Total	94		
The other team argue the case for decisions effectively	Business	46	44.58	2050.50
	IS	48	50.30	2414.50
	Total	94		
Business and IT work together to plan new initiatives.	Business	46	44.00	2024.00
	IS	48	50.85	2441.00
	Total	94		
We have joint decision making to decide on scheduling.	Business	46	41.96	1930.00
	IS	48	52.81	2535.00
	Total	94		
We use a common process to decide which projects are important for the business.	Business	46	43.10	1982.50
	IS	48	51.72	2482.50
	Total	94		
Everyone is kept well informed about activities and changes.	Business	46	42.91	1974.00
	IS	48	51.90	2491.00
	Total	94		
The other team is able to contribute towards our understanding of issues.	Business	46	47.58	2188.50
	IS	48	47.43	2276.50
	Total	94		
It is necessary to partner with	Business	46	49.92	2296.50

Ranks	IS or Business	N	Mean Rank	Sum of Ranks
the other team to make effective decisions about investments in IT.	IS	48	45.18	2168.50
	Total	94		
We have joint decision making to agree the allocation of budget.	Business	46	42.15	1939.00
	IS	48	52.63	2526.00
	Total	94		

Appendix I - Regression analyses by dimension - business

Table I1 - Business regression analysis - whole framework - dependent variable Network Relationships (NW)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.335	0.734		1.818	0.076
	SN	-0.006	0.237	-0.005	-0.024	0.981
	TR	0.494	0.224	0.440	2.201	0.033
	RE	0.478	0.211	0.427	2.265	0.029
	CE	-0.160	0.239	-0.127	-0.668	0.508
Predictors: (Constant), SN, CE, RE, TR			Dependent Variable: NW			
Adjusted R Square				0.476		
F	11.221		Model Significance		0.00	

Table I2 - Business regression analysis - whole framework - dependent variable Shared Norms (SN)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.423	0.499		0.848	0.401
	TR	0.278	0.150	0.284	1.850	0.071
	RE	0.215	0.144	0.220	1.500	0.141
	CE	0.476	0.140	0.433	3.391	0.002
	NW	-0.003	0.103	-0.003	-0.024	0.981
Predictors: (Constant), NW, CE, RE, TR			Dependent Variable: SN			
Adjusted R Square				0.702		
F	27.468		Model Significance		0.00	

Table I3 - Business regression analysis - whole framework - dependent variable Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.403	0.498		-0.808	0.424
	RE	0.268	0.141	0.269	1.899	0.065
	CE	0.238	0.154	0.212	1.543	0.131
	NW	0.214	0.097	0.240	2.201	0.033
	SN	0.277	0.150	0.271	1.850	0.071
Predictors: (Constant), NW, CE, RE, SN			Dependent Variable: TR			
Adjusted R Square				0.715		
F	29.182		Model Significance		0.00	

Table I4 - Business regression analysis - whole framework Dependent variable Reciprocity Expectations (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.324	0.530		0.612	0.544
	CE	0.190	0.165	0.169	1.149	0.257
	NW	0.233	0.103	0.260	2.265	0.029
	SN	0.241	0.161	0.236	1.500	0.141
	TR	0.301	0.159	0.301	1.899	0.065
Predictors: (Constant), NW, CE, TR, SN			Dependent Variable: RE			
Adjusted R Square				0.681		
F	24.980		Model Significance		0.00	

Table I5 - Business regression analysis - whole framework - dependent variable Collective Efficacy (CE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.000	0.470		2.128	0.039
	NW	-0.067	0.101	-0.085	-0.668	0.508
	SN	0.461	0.136	0.506	3.391	0.002
	TR	0.231	0.150	0.259	1.543	0.131
	RE	0.164	0.143	0.184	1.149	0.257
Predictors: (Constant), NW, RE, TR, SN			Dependent Variable: CE			
Adjusted R Square				0.652		
F	22.051		Model Significance		0.00	

Appendix J - Regression analyses by dimension - IS

Table J1 - IS regression analysis - whole framework - dependent variable Network Relationships (NW)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.350	0.815		4.113	0.000
	SN	0.215	0.210	0.244	1.023	0.312
	TR	0.030	0.144	0.058	0.211	0.834
	RE	-0.144	0.211	-0.177	-0.682	0.499
	CE	0.375	0.186	0.460	2.022	0.049
Predictors: (Constant), CE, RE, SN, TR			Dependent Variable: NW			
Adjusted R Square				0.262		
F	5.179		Model Significance		0.002	

Table J2 - IS regression analysis - whole framework - dependent variable Shared Norms (SN)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.402	0.656		2.136	0.038
	TR	0.232	0.097	0.391	2.394	0.021
	RE	0.320	0.144	0.346	2.217	0.032
	CE	0.103	0.138	0.111	0.742	0.462
	NW	0.111	0.108	0.098	1.023	0.312
Predictors: (Constant), TR, CE, RE, NW			Dependent Variable: SN			
Adjusted R Square				0.705		
F	29.027		Model Significance		0.00	

Table J3 - IS regression analysis - whole framework - dependent variable Trust (TR)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.697	0.850		-4.348	0.000
	RE	0.591	0.207	0.380	2.861	0.006
	CE	0.422	0.196	0.271	2.158	0.037
	NW	0.034	0.162	0.018	0.211	0.834
	SN	0.507	0.212	0.301	2.394	0.021
Predictors: (Constant), SN, NW, CE, RE			Dependent Variable: TR			
Adjusted R Square				0.773		
F	40.911		Model Significance		0.00	

Table J4 - IS regression analysis - whole framework - dependent variable Reciprocity Expectations (RE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.455	0.653		2.226	0.031
	CE	0.257	0.134	0.257	1.926	0.061
	NW	-0.074	0.109	-0.060	-0.682	0.499
	SN	0.320	0.144	0.296	2.217	0.032
	TR	0.271	0.095	0.421	2.861	0.006
Predictors: (Constant), CE, NW, SN, TR			Dependent Variable: RE			
Adjusted R Square				0.747		
F	35.767		Model Significance		0.00	

Table J5 - IS regression analysis - whole framework - dependent variable Collective Efficacy (CE)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.584	0.750		0.778	0.441
	NW	0.231	0.114	0.189	2.022	0.049
	SN	0.123	0.166	0.114	0.742	0.462
	TR	0.231	0.107	0.361	2.158	0.037
	RE	0.308	0.160	0.309	1.926	0.061
Predictors: (Constant), NW, RE, SN, TR			Dependent Variable: CE			
Adjusted R Square				0.697		
F	27.980		Model Significance		0.00	

Appendix K - Correlation analyses by dimension

Key for all tables in Appendix K:

* significant at the 0.05 level.

** no significance

All other results are significant at the 0.01 level

Table K1 - Correlations between attributes within Network Relationships

Attribute	IS / Business	Network association	Formal & informal communications	Access to decision makers
Network association	IS	1		
	Business	1		
Formal & informal communications	IS	0.409	1	
	Business	0.582	1	
Access to decision makers	IS	0.630	0.588	1
	Business	0.682	0.572	1
Homophily	IS	0.058**	0.253**	0.137**
	Business	0.494	0.246**	0.348*

Table K2 - Correlations between attributes within Shared Norms

Attribute	IS / Business	Community of purpose	Processes	Common understanding of value	Fairness and sanctions
Community of purpose	IS	1			
	Business	1			
Processes	IS	0.209**	1		
	Business	0.381	1		
Common understanding of value	IS	-0.088**	-0.042**	1	
	Business	0.577	0.357*	1	
Fairness and sanctions	IS	0.527	0.524	-0.076**	1
	Business	0.314*	0.500	0.455	1

Table K3 - Correlations between attributes within Trust

Attribute	IS / Business	Belief in the other party's value and integrity	Reliability	Willingness to take risk or initiative	Generating and receiving trust
Belief in the other party's value and integrity	IS	1			
	Business	1			
Reliability	IS	0.758	1		
	Business	0.473	1		
Willingness to take risk or initiative	IS	0.749	0.818	1	
	Business	0.570	0.703	1	
Generating and receiving trust	IS	0.667	0.787	0.714	1
	Business	0.705	0.691	0.725	1

Table K4 - Correlations between attributes within Reciprocity Expectation

	Attribute	Shared understanding of value	Benefits or services received in long or short term	General helpfulness	Convergent interests
Shared understanding of value	IS	1			
	Business	1			
Benefits or services received in long or short term	IS	0.644	1		
	Business	0.542	1		
General helpfulness	IS	0.731	0.538	1	
	Business	0.621	0.673	1	
Convergent interests	IS	0.554	0.662	0.522	1
	Business	0.493	0.571	0.571	1

Table K5 - Correlations between attributes within Collective Efficacy

	Attribute	Superior performance	Group partnering for major decisions	Access to financial power
Superior performance	IS	1		
	Business	1		
Group partnering for major decisions	IS	0.752	1	
	Business	0.688	1	
Access to financial power	IS	0.491	0.572	1
	Business	0.414	0.732	1

Appendix L - Frequency data

Table L1 - Business frequency data

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
I know all the right people in the other team who can discuss how to do things more effectively	2	0	0	0	15	21	8	1.2	6	5.6
I know the other team well.	0	1	6	2	7	19	11	1.4	6	5.5
I talk regularly to people in the other team who provide / use the systems relevant to my business area.	1	1	6	1	12	16	9	1.5	6	5.3
I have formal contacts with decision makers in the other team..	3	0	4	3	6	18	12	1.7	6	5.4
I have frequent informal contact with people in the other team who use/ manage the technology relevant to my area	2	1	6	2	6	24	5	1.6	6	5.2
I know who are all the right decision makers in the other team relevant to my area.	1	0	2	2	15	16	10	1.2	6	5.6
I can approach relevant decision makers in the other team to discuss initiatives or projects.	0	0	1	4	9	20	12	1	6	5.8
I know all the decision makers who can help me understand how IT can support the business to be more effective.	2	0	4	3	8	25	4	1.4	6	5.3
When I meet staff from the other team informally we chat about the business	2	2	4	1	13	16	8	1.6	6	5.2
When I meet staff from the other team informally we chat about technology matters.	0	2	7	4	15	12	6	1.4	5	5
The other team understands the day-to-day activities of the my functional area very well.	3	0	8	3	11	16	5	1.6	5	4.9
The other team has an excellent understanding of the operating environment of my area very well.	1	4	7	7	15	9	3	1.5	5	4.5
We share all the budget information and assumptions.	0	4	8	2	13	15	4	1.5	5	4.8

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
Staff in the other team explain technicalities in terms that I understand.	0	1	6	5	11	16	7	1.3	5.5	5.2
We use a shared planning process for budgeting.	0	3	5	4	8	20	6	1.4	6	5.2
We use a common process for managing projects.	0	3	5	7	13	9	9	1.5	5	5
We put a lot of effort into understanding each others perspective	0	2	5	7	17	13	2	1.2	5	4.9
I get on well with people in the other team.	0	0	1	2	9	20	14	0.9	6	6
I share an educational background with people in the other team.	5	1	8	9	10	7	6	1.8	4.5	4.4
I live in the same locality as people in the other team.	4	8	7	15	3	8	1	1.6	4	3.7
I am roughly the same age as most people in the other team.	2	4	7	9	10	13	1	1.5	5	4.4
We find it easy to talk about our family backgrounds.	1	0	5	15	8	9	8	1.4	5	4.9
I share outside interests with people in the other team.	1	1	3	14	13	8	6	1.3	5	4.8
Senior management has the same regard for both business and IT.	2	3	8	11	6	11	5	1.6	4	4.5
We are subject to the same standards, for example, office conduct, rewards, ethical behaviour.	0	1	5	3	5	25	7	1.3	6	5.5
We are subject to the same operating rules, for example, time-keeping, dress codes, security.	1	4	1	3	13	15	9	1.5	6	5.3

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
We are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity	1	3	3	3	5	20	11	1.6	6	5.4
The other team takes responsibility for failures which originate in their area.	0	0	5	10	12	17	2	1.1	5	5
The other team trusts us to keep them included in future plans.	1	1	2	11	16	9	6	1.3	5	5
The other team can be trusted to deliver on schedule.	1	7	9	8	13	6	2	1.5	4	4.1
The other team can be trusted to meet expectations of functionality.	0	2	7	5	22	7	3	1.2	5	4.7
makers in the other team, contributing to decisions about IT investments relevant to my area.	0	0	7	4	12	15	8	1.3	5.5	5.3
The other team will take the initiative to promote something which they believe is useful.	0	4	5	5	17	12	3	1.4	5	4.8
The other team takes appropriate (but not foolhardy) risk.	0	0	10	14	7	15	0	1.2	4	4.6
If we are unable to keep the other team involved in future plans, we take care to explain it afterwards.	1	1	6	10	13	11	4	1.4	5	4.8
The other team team explain things in an honest way.	0	0	4	9	13	16	4	1.1	5	5.2
The other team will make an effort not to avoid difficult issues.	0	2	5	10	14	11	4	1.3	5	4.8
Where the other team is unable to deliver, they make specific efforts to help us understand why they have failed to meet expectations.	1	0	7	13	8	12	5	1.4	5	4.8
IT is essential to everyday operations.	0	1	0	0	0	8	37	0.8	7	6.7

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
IT is essential to implementing our business strategy.	0	1	0	0	4	11	30	0.9	7	6.5
IT is essential to defining our business strategy.	1	5	5	0	7	17	11	1.8	6	5.2
I understand how functions such as email and operational functions contribute to the business	1	0	0	0	2	27	16	1	6	6.2
I understand how IT contributes towards the safe running of the business.	1	0	1	1	1	22	20	1.1	6	6.2
I understand how IT contributes towards cost savings.	1	3	2	2	12	14	12	1.5	6	5.4
I understand how IT contributes to the firms strategy.	2	2	2	4	7	18	11	1.6	6	5.4
We work together with the to agree priorities.	0	0	10	1	12	19	4	1.3	5.5	5.1
The other team always looks for opportunities to make improvements.	0	0	10	3	15	15	3	1.2	5	5
The other team volunteer to get involved in initiatives beyond their strict job descriptions	1	2	7	5	11	15	5	1.5	5	4.9
The other team is very helpful and explains how to make / achieve the best use of systems.	0	1	5	2	13	18	7	1.3	6	5.4
The other team always looks for opportunities to help us achieve the best solutions.	0	1	8	1	15	15	6	1.3	5	5.2
IT and the business share the goals and objectives of the firm.	0	0	0	4	11	19	12	0.9	6	5.8
It would not be possible to achieve our business goals without having reliable IT.	0	1	0	0	4	19	22	0.9	6	6.3

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
When we have a system problem, we work together solve it.	1	2	1	2	17	19	4	1.3	5.5	5.3
I talk regularly to the other team about new technology directions.	1	6	3	2	17	13	4	1.6	5	4.8
IT is very reliable.	2	1	4	6	11	21	1	1.4	5	5
When we have a system problem there are speedy and reliable fixes, back-ups or workarounds.	1	2	0	1	13	25	4	1.2	6	5.5
IT is very responsive to the need to implement changes to get minor or short term business benefits.	1	3	8	4	11	16	3	1.5	5	4.8
IT is very responsive to the need to implement changes to get long term or major business benefits	0	1	4	1	19	16	5	1.1	5	5.3
We understand the need to implement changes that allows the firm to manage the technology more effectively.	0	2	4	9	11	12	8	1.4	5	5.1
The other team understands the business / technology strategy and future direction very well.	2	2	8	4	15	12	3	1.5	5	4.7
We share communications about activities and changes.	0	0	10	5	19	5	7	1.3	5	4.9
The other team has a good decision making process.	0	1	7	11	14	13	0	1.1	5	4.7
Processes aren't over bureaucratic and we understand why we need them.	5	4	7	6	14	8	2	1.7	5	4.1
Our process for managing projects brings all relevant teams together very effectively.	1	3	7	4	21	5	5	1.4	5	4.7
We are part of one business community with shared goals.	0	1	3	3	17	19	3	1.1	5	5.3

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
The other team argue the case for decisions effectively	0	2	11	12	7	14	0	1.3	4	4.4
Business and IT work together to plan new initiatives.	1	0	5	7	16	13	4	1.3	5	5
We have joint decision making to decide on scheduling.	0	1	0	9	21	11	4	1	5	5.2
We use a common process to decide which projects are important for the business.	2	3	7	3	11	14	6	1.7	5	4.8
Everyone is kept well informed about activities and changes.	0	3	11	7	10	9	6	1.5	5	4.6
The other team is able to contribute towards our understanding of complex issues.	2	2	6	6	9	13	8	1.7	5	4.9
It is necessary to partner with the other team to make effective decisions about investments in IT.	0	1	0	1	4	19	21	1	6	6.2
We have joint decision making to agree the allocation of budget.	0	1	6	9	17	10	3	1.2	5	4.8

Table L2 - IS frequency data

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
We are subject to the same sanctions, for example, discipline for failures in time-keeping, office conduct, integrity	0	2	7	2	5	17	13	1.5	6	5.5
The other team takes responsibility for failures which originate in their area.	0	2	14	8	8	13	1	1.4	4	4.4
The other team trusts us to keep them included in future plans.	0	0	4	8	3	27	4	1.1	6	5.4
The other team can be trusted to deliver on schedule.	0	11	8	9	6	11	1	1.6	4	4
The other team can be trusted to meet expectations of functionality.	0	7	13	6	10	8	2	1.5	4	4.1
makers in the other team, contributing to decisions about IT investments relevant to my area.	0	0	1	2	8	26	9	0.9	6	5.9
The other team will take the initiative to promote something which they believe is useful.	0	1	3	5	17	12	8	1.2	5	5.3
The other team takes appropriate (but not foolhardy) risk.	0	2	4	11	9	15	5	1.3	5	5
If we are unable to keep the other team involved in future plans, we take care to explain it afterwards.	0	0	5	3	7	27	4	1.1	6	5.5
The other team team explain things in an honest way.	1	3	7	8	10	13	4	1.5	5	4.7
The other team will make an effort not to avoid difficult issues.	0	2	11	6	12	12	3	1.4	5	4.7
Where the other team is unable to deliver, they make specific efforts to help us understand why they have failed to meet expectations.	3	9	7	4	7	14	2	1.8	4.5	4.2
IT is essential to everyday operations.	0	0	0	0	1	9	36	0.5	7	6.8

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
IT is essential to implementing our business strategy.	0	0	0	0	4	12	30	0.7	7	6.6
IT is essential to defining our business strategy.	0	0	1	3	8	21	13	1	6	5.9
I understand how functions such as email and operational functions contribute to the business	0	0	0	0	3	25	18	0.6	6	6.3
I understand how IT contributes towards the safe running of the business.	0	0	0	0	2	20	24	0.6	7	6.5
I understand how IT contributes towards cost savings.	0	0	0	3	3	22	18	0.8	6	6.2
I understand how IT contributes to the firms strategy.	0	0	0	1	11	20	14	0.8	6	6
We work together with the to agree priorities.	0	1	3	1	12	21	8	1.1	6	5.6
The other team always looks for opportunities to make improvements.	0	1	1	8	18	13	5	1.1	5	5.2
The other team volunteer to get involved in initiatives beyond their strict job descriptions	0	9	7	3	7	19	1	1.7	5	4.5
The other team is very helpful and explains how to make / achieve the best use of systems.	0	1	3	4	9	25	4	1.1	6	5.4
The other team always looks for opportunities to help us achieve the best solutions.	1	4	9	3	9	19	1	1.6	5	4.7
IT and the business share the goals and objectives of the firm.	0	2	0	5	10	21	8	1.2	6	5.6
It would not be possible to achieve our business goals without having reliable IT.	0	1	1	1	2	27	14	1	6	6.1

Statement	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Standard deviation	Median	Mean
When we have a system problem, we work together solve it.	0	3	1	3	11	22	6	1.3	6	5.4
I talk regularly to the other team about new technology directions.	0	0	2	3	16	18	7	1	6	5.5
IT is very reliable.	0	1	9	4	9	21	2	1.3	5.5	5
When we have a system problem there are speedy and reliable fixes, back-ups or workarounds.	0	1	4	9	6	22	4	1.2	6	5.2
IT is very responsive to the need to implement changes to get minor or short term business benefits.	1	1	4	0	15	22	3	1.3	6	5.3
IT is very responsive to the need to implement changes to get long term or major business benefits	0	2	2	2	8	20	12	1.3	6	5.7
We understand the need to implement changes that allows the firm to manage the technology more effectively.	0	7	2	2	13	20	2	1.5	5	4.9
The other team understands the business / technology strategy and future direction very well.	2	0	12	4	12	13	3	1.5	5	4.6
We share communications about activities and changes.	0	1	0	6	17	17	5	1	5	5.4
The other team has a good decision making process.	2	2	4	12	15	9	2	1.4	5	4.5
Processes aren't over bureaucratic and we understand why we need them.	1	5	6	6	13	14	1	1.5	5	4.5
Our process for managing projects brings all relevant teams together very effectively.	0	1	5	5	14	19	2	1.2	5	5.1
We are part of one business community with shared goals.	0	0	4	3	6	26	7	1.1	6	5.6

Glossary of Terms

The following terms are commonly used in the Investment Management sector and are included here to assist the lay reader:

Compliance

The compliance department's activities include monitoring trading activity, preventing conflicts of interest and ensuring compliance with regulations to prevent money laundering. They also monitor investment compliance in accordance with regulatory, fund and mandate restrictions.

Derivative

A tradable financial instrument that derives its value from underlying assets—such as stocks, bonds, market indices or commodities.

Exchange-Traded Fund (ETF)

An instrument that provides exposure to an index and is traded on a stock exchange.

Fund

Funds may be mutual funds, hedge funds, pension funds, unit trusts or hybridised schemes.

Hedging

A trading practice aimed at limiting financial loss in an asset due to unexpected price changes.

Investment management

Investment management refers to portfolio management and the trading of securities to achieve a specific investment objective.

Liquidity

The ease with which an asset can be bought or sold quickly.

Mandate

A defined investment strategy used by firms to meet the needs and requirements of an investor. It will be governed by an agreement which may limit the types of investments which may be used.

Net Asset Value (NAV)

The value of a fund share and is typically calculated at the end of each day changing to reflect changes in the value of a fund's holdings.

Operations or Fund administration

Fund administration supports of the process of running a fund. Sometimes some or all of these activities are outsourced to specialist companies such as custodian banks. Administration activities may include the following administrative functions:

- Calculation of the Net Asset Value of the fund ("NAV")
- Preparation of regular reports to shareholders
- Maintenance and filing of the fund's financial books and records as the fund accountant
- Payment of fund expenses
- Settlement of daily trading of securities, ensuring collection of dividends and interests
- Calculation and payment to the transfer agent of dividends and distributions (if required)
- Preparation and filing of the fund's prospectus
- Calculation of performance measures of the fund
- Supervision of the orderly take-on and dissolution of funds

Over the Counter (OTC)

Securities not listed on an established exchange and traded directly over computer networks or telephone. Many bonds trade in this way. They are also known as "unlisted securities."

Portfolio management

The activity of making decisions concerning investment mix and policy, matching investments to objectives, asset allocation for investors, and balancing risk against performance. Portfolio managers make choices of debt versus equity, domestic versus international, growth versus safety, and other tradeoffs to attempt to maximize return at a given appetite for risk.

Risk

The uncertainty of outcomes due to one or many causes; it can be positive as well as negative. Volatile assets tend to have a wider range of possible returns and thus are said to be higher-risk. Risk management is a technical activity and models and measures many different risk factors including market, counterparty credit, interest rate and currency risk.

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