Applying Social Capital Theory to the Management of IT Outsourcing

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Abstract

This thesis develops a conceptual framework for relating Social Capital theory to large IT outsourcing projects. It uses this to explore how social factors that arise in outsourcing situations can influence organisations' competence in IT innovation. It finds that social capital principles provide a valuable alternative perspective to established practices in managing IT outsourcing. Social capital can be applied both in the analysis of IT outsourcing results and in planning outsourcing transitions that lead to improved longer term knowledge creation and innovation capability.

Research was carried out in two large and established users of IT outsourcing, a UK government agency and a major bank. Based on this, two detailed case studies were prepared and an interpretive methodology used to understand how the respective outsourcing projects had developed.

A conceptual model of the interacting organisational factors that lead to IT competence is derived from existing literature and tested against the case study data. This model sets out the new concept of an 'outsourcing enclave' as a unique structure in which knowledge resources of outsourcing client and vendor are combined, supported by social capital that is distinct from that in either feeding organisation.

The thesis uses the model to observes how, in the cases studied, effective management of social capital in outsourcing enclaves has created situations conducive to knowledge creation and innovation and the barriers to this that were encountered. This reveals that social capital management in these organisations called for time after outsourcing transition during which social capital can stabilise in the enclave, for learning from the achievement of short term objectives and for application of relational governance alongside the outsourcing contract.

The main contributions of the thesis are the conceptual framework of the outsourcing enclave and the use of this to apply social capital theory to specific situations of IT outsourcing. It also demonstrates how theorised dimensions of social capital can be used to interpret outcomes in real outsourcing situations. The cases provide further empirical support for social capital theory and their interpretation a basis for further research in the specific area of outsourcing and IT outsourcing in particular.

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Chapter 1 Introduction

1.1 Background

This thesis will use Social Capital theory to conceptualise the interaction between two phenomena: choices made about outsourcing IT competences and organisations' capability for innovation.

It was quickly recognised that the growth of Information Technology (IT) which gathered pace half a century or so ago would lead to radical change (Zuboff, 1988). Knowledge of IT and competence in its management moved to the core of many organisations and the ability to change the way IT works became central to many of those organisations' capability for innovation (Swanson, 1994). Creating and managing these IT competences called for specialist IT functions to be integrated into many organisational hierarchies; not only operationally but also socially, as IT people became part of the community of practitioners that form the organisation (Peppard, 2007). But IT competences need not originate in the organisation that uses them. More recently, the possibility of using outsourcing to procure IT competence from specialist vendors has created a further set of opportunities and challenges for managers (Willcocks et al., 2011).

The benefits of IT can be simply stated: initially IT driven automation brought efficiency and vast productivity growth, later with the arrival of the internet, it provided a readily accessible way of co-ordinating organisations with their suppliers and customers (Porter and Heppelmann, 2014). Successful investment in IT has now created a fundamental resource of organisations that not only brings efficiency but is also critical to operating processes offering a source of profit and thus competitive advantage (Mithas and Rust, 2016). The ongoing developments in the underlying technology and capabilities of IT, ('Big data', Cloud and Internet of Things are topical examples at time of writing) suggest that the IT resource will continue to change in the possibilities it offers to businesses and society in general.

Fast moving IT therefore offers a continually changing stream of technologically driven affordances to organisations, new features or capabilities with which product or service innovations can be created (Zammuto et al., 2007). It can be argued that such

innovations are a necessity, not a luxury, if competitive advantage is to be sustained and that IT innovation is therefore a key enabler of new organisational strategies (Markides and Anderson, 2006).

However, real challenges exist in the management of IT in organisations. IT driven capability is complex and its links to business and organisational performance are challenging to understand (Ward, 2012). It invariably emerges from a combination of capabilities of different applications, data sources and communication platforms. Therefore innovation with IT might require the co-ordination of a number of different change projects, each resting on a changing and intricate technology base (Fichman, 2001). This IT innovation must also happen while existing systems continue to operate correctly, the risk of catastrophic IT failure having increased as its importance to business operations has grown.

IT innovation projects must also be aligned with the wider objectives and practices of the organisation concerned whether these are strategic, operational or intangible in nature (Ghosh and Scott, 2009, Peppard, 2007). IT capability is also only one component of organisational innovation, hence IT and business strategies must co-ordinate with each other and with any related organisational investments in platforms and technology if sustained value is to be created (Ward and Peppard, 2002).

These IT management activities call for knowledgeable practitioners. The knowledge required to manage innovation, operation and alignment IT is detailed and in many cases specific to the system or software being used. This, coupled with the prevalence of IT use has lead to severe skill shortages in developed economies. For example 96% of UK businesses surveyed by The Tech Partnership in 2015 reported skill gaps across all areas of their IT workforce (The Tech Partnership, 2015). But skills and knowledge are not only needed at the level of technology, practitioners must be capable of relating the affordances offered by IT to the specific, developing situation of the organisation that is using it.

Problems of IT cost, quality of operation and poor alignment with the innovation needs of the user organisation have been widely recognised throughout the period of IT's evolution. A response to this perceived need for higher efficiency was found in outsourcing (Zardini et al., 2015). IT outsourcing involved the transfer of responsibility for all or part of IT's management to a third party specialist vendor that would generate

benefits of scale, create focussed areas of expertise and thus reduce cost to the client while building vendor-driven quality and knowledge into the IT operation (Barthelemey, 2001, Peppard, 2007). IT outsourcing is believed to have been first exploited at a large scale by Kodak in 1988 (Applegate and Montealegre, 1995) but by 2013 had grown into an industry whose global turnover was forecast to be around $288bn (Gartner, 2013).

Aside from the cost saving benefits that outsourcing could bring, early proponents raised its strategic benefits to the client organisation. Were IT to be seen as a commodity operation with little potential for strategic value creation, bringing in a specialist provider would release the client organisation from much responsibility for its management. Therefore, reducing or eliminating vertically integrated IT operations would not only save direct costs but could also create management focus on creating value from the core competences of the client firm (Quinn and Hilmer, 1994). Later, it was recognised that effective IT outsourcing could mean engaging a number of specialist vendors (multi-sourcing), managing objectives and risks carefully, building internal competences in outsource vendor management and thereby gradually increasing scale and sophistication within the outsourcing configuration (Willcocks, 2011). Furthermore, in this period the nature of IT outsourcing changed with the development of large scale and low cost offshore IT resources in developing countries, notably in south Asia (Contractor et al., 2010) addressing both the skill shortages and cost problems experienced in developed markets.

In these ways, over a period of about 30 years, IT outsourcing has grown into a widely used tool in many aspects of IT management. In parallel to this, the centrality of IT within business operations and its importance as a tool for achieving competitive advantage has also grown. Hence a challenge for client organisations that has emerged through this period is using the knowledge and skills of their outsourcing vendors to create innovation in IT competence as a component of wider organisational capability, while simultaneously securing the cost savings and quality improvements that outsourcing can bring (Aubert et al., 2015).

This challenge has different aspects. IT can be seen as simply a set of technological artefacts whose innovation can be formally planned but its management also has softer, more social aspects. Innovative IT change requires technological development

but also calls for learning and new knowledge creation, the latter coming from the combination of specialist expertise not only in the client and vendor IT functions but also across the wider using organisation if real value is to be created (Peppard, 2007). Hence, although it might be seen from outside as a purely deterministic process IT innovation also drives and is driven by social and cultural factors in the organisations that need it and their vendor resources (Pillay et al., 2012). The technology of IT thus forms part of an 'Information System' (IS in academic literature) in which these other aspects are also present.

IT outsourcing, introduces an external vendor into a long term relationship with the client. The vendor becomes embedded in the client's business, building a relationship that has social and psychological, as well as economic aspects (Miranda and Kavan, 2005a). Moving to such a relationship brings a particular type of change that might affect all aspects of the information system. As described above, that change may have positive results, like cost saving, sharper general management focus or quality improvement. Other effects, notably those on competences like IT innovation, which call on the softer more social aspects of IT management may be harder to predict and manage as they arise (Aubert et al., 2015).

1.2 The outsourcing 'enclave'

To add to existing academic work on IT outsourcing, this thesis will develop the concept of the outsourcing 'enclave'. This is the structural entity, or set of entities, within the client organisation that is created when an outsourcing agreement is implemented. It is populated with skilled and knowledgeable human resources from both client and vendor. In effective outsourcing enclaves, the people of the client and vendor will collaborate with each other and with the wider organisation to deliver the IT related services that are agreed in the outsourcing contract and, when innovation is needed, create new knowledge. The contract provides a formal governance framework for this collaboration which is likely to be different from the prevailing governance or management arrangements in either of the feeding organisations. Alongside these formal governance processes a set of social conditions will develop in the outsourcing enclave, grounded in the developing relationships between the client and vendor people. The process of outsourcing outlined above can influence how these relationships develop in many possible ways. These could include: the movement of people from client to vendor in the agreed transition to outsourcing, the use of culturally and geographically distant offshore resources, the specific governance method chosen and its application in the enclave, the expectations and feelings of all those involved about how their relationships should work and its resulting output.

If the client uses multi-sourcing, a number of outsourcing enclaves will be created. In these situations it is likely that a further framework of collaboration between the enclaves and between the enclaves and the wider client organisation will be needed for the delivery of complex services or development projects. This framework will also have both contractual and social aspects.

IT outsourcing enclaves are defined by the scope of IT competences they aim to deliver and the vendor chosen to support these, this combination may make them unique organisational entities. In each enclave, two groups of people with different organisational backgrounds are put together into a long term service relationship contextualised in the wider issues of IT management faced by the client organisation. Enclaves have a governance system which is different from that of both the host client

organisation and the vendor. They also develop their own internal social system that is different from those in both the feeding organisations.

By developing a conceptual framework for the outsourcing enclave and testing this in two large organisations, this thesis will address an aspect of the challenge of using IT outsourcing to support innovation. It will specifically examine how social conditions within outsourcing enclaves influence their ability to generate new knowledge in support of the wider effectiveness of the system in which IT operates. It will consider the consequence of these developments for innovation capability and how these consequences are considered and managed in real situations.

Outsourcing agreements, while of relatively long duration, need to become effective quickly if the knowledge related benefits of outsourcing are to be realised in a competitive and changing world. To acknowledge this, the thesis will also examine how the process of implementing, or transition to outsourcing enclaves, the objectives managers set for them and the governance systems that are put in place can influence the development of social conditions within the enclave.

1.3 Theoretical approach and intended contribution

As stated at the outset, the driving theory for this thesis is that of Social Capital. Broadly stated, this posits that alongside the financial capital that exists in assets and the human capital that is found in people, a form of value is created in social relations (Coleman, 1988, Bourdieu, 1986). This essentially sociological concept can be extended to the world of organisations where it has been proposed that it plays a role in the creation of knowledge or intellectual capital (Nahapiet and Ghoshal, 1998). It has also be used extensively in IS research as a means of understanding (amongst others) the interaction between people and technology (eg. Kankanhalli et al., 2005, Huysman and Wulf, 2006, Robert Jr. et al., 2008) and the management of knowledge in complex organisations (eg. Riemer and Klein, 2008, Zimmermann and Ravishankar, 2014, Rottman, 2008b). Social capital emerges from networks of relationships in a way that is tricky for management to control, it subsequently operates independently of the formal organisation as a distinct and valuable strategic resource (Peppard, 2007).

This thesis aims to complement an extensive body of academic literature that already addresses IT outsourcing. Although the focus of outsourcing literature has been on the harder, more transactional aspects of the phenomenon and not on its use to support innovation (Aubert et al., 2015), its relationship to the social capital of organisations has been recognised (eg. Zimmermann and Ravishankar, 2014) and has recently increased. Reviewing independent variables that were present in empirical outsourcing studies over the 18 year period 1992-2010, Lacity et al (2010) found that of a total of 138 variables used 741 times, 25 variables used 107 times could be categorised as 'Relationship characteristics' and 2 papers referred to social capital (p.404). In a further similar review published more recently (Lacity et al., 2016) which covered literature from 2010 to 2014, 203 unique independent variables were identified which were used 1304 times. Of these 203 variables, 3 related to social capital and were used 15 times (p.48) indicating the increased recent academic interest in social capital as a phenomenon within outsourcing.

The application of social capital theory to outsourcing is therefore not common, but neither is it unknown and it is growing in prevalence. Social capital theory has been used to understand knowledge transfer between client and outsourcing vendors (Rottman, 2008a, Zimmermann and Ravishankar, 2014) as a way of diagnosing

problems in co-operation between clients and vendor partners (Ghosh and Scott, 2009, Peppard, 2007) and has been proposed as part of a research agenda for understanding the evolution of client-vendor relationships as outsourcing develops through different phases from deal making to mature operation (George et al., 2014). Little research has however been done on how the structural changes brought about by IT outsourcing and their consequential social capital effects might influence an organisation's ability to innovate.

This thesis aims to add to the IT outsourcing literature by developing the concept of the outsourcing enclave as a structural building block of IT innovation capability and using this to analyse or predict the outcomes of an outsourcing strategy. The concept will be centred on Social Capital theory, using this to explore how the social conditions created in outsourcing enclaves influence their ability to create new knowledge and hence to support innovation in the use of IT. It will further consider how management decisions necessitated by outsourcing affect the conditions in which outsourcing enclaves are used and support or hamper their effectiveness.

The theoretical contribution of this thesis is therefore in developing and testing new concepts that can be used to deepen understanding the effects of IT outsourcing. This claim is based on a specific understanding of the meaning of 'theory' in social research. In his book on research method, Sayer (1992) described three senses of theory as important. These were:

> '1. Theory as an *ordering framework* which permits observational data to be used for predicting and explaining empirical events.
>
> 2. Theory as *conceptualisation*, in which 'to theorize' means to prescribe a particular way of conceptualizing something.
>
> 3. Theory is often used interchangeably with 'hypothesis' or 'explanation'.'
>
> (Sayer, 1992 p.50)

Sayer claims that these different uses of theory vary across social science the first and third being more common in quantitative research, the second more common in sociological fields.

The second use of theory proposed by Sayer, theory as a conceptualisation, is adopted in this work.

This approach to the use of theory is supported by Walsham (1995), in the specific context of interpretive case study development in IS research. Walsham describes how theory can be used to 'create an initial theoretical framework which takes account of previous knowledge, and which creates a sensible theoretical basis to inform the topics and approach of the early empirical work' (p.76). He goes on to state that, 'It is desirable in interpretive studies to preserve a considerable degree of openness to the field data, and a willingness to modify initial assumptions and theories' (p.76). This advice is adopted in the methodology of this thesis by testing the initial theory-based conceptualisation against two specific case studies and further evidence from case studies in existing literature.

Walsham further proposes the development of concepts from IS case studies represent a type of generalisation that, by offering explanations of particular phenomena, 'may be valuable in the future in other organizations and contexts' (p.79),

This thesis thus aims to build on previous knowledge to devise and test a new conceptualisation of outsourcing in the specific contexts of IT and of innovation using new case studies of IT outsourcing implementation. Social capital theory will provide the basis for this.

1.4 Research Questions

This thesis will address three research questions that emerge from the discussion in this introductory chapter. The first question aims to define the field of study, the use of IT in organisations into which outsourcing will be implemented, by addressing the relationship between the three entities at its core. These are the intangible facets of social capital and knowledge and the desired result for the client organisation of a competence in IT innovation.

It is :

> **RQ1 'How do social capital and contextual knowledge support an organisation's ability to innovate using information technology?'**

This question recognises that contexts in which information systems are used vary widely in their nature. This variation is determined by contextual factors like industry, competitive environment or product/market combinations. Internal factors that lead to the creation of social capital are also relevant as are the means by which knowledge is managed across the wider organisation, not just the IT function.

The second research question examines the effect of IT outsourcing in the overall field of study. It asks how the choices around the implementation of IT outsourcing might affect the development of social capital in the now integrated client and vendor organisations. This change in social capital will in turn influence the organisation's ability to create the new knowledge it needs to support innovation.

It is:

> **RQ2 'How does design and implementation of IT outsourcing enclaves affect the development of the social capital needed to support knowledge creation and thus IT innovation?'**

This question investigates the transition towards outsourcing as a process of IT and organisational change. It aims to uncover the ways in which the design of the outsourcing configuration and the process of transition from the vertically integrated state to that configuration influences its subsequent effectiveness. The question recognises that a quick and effective transition is itself a factor in IT outsourcing

success but aims to understand how the social capital factors that underlie innovation competence (RQ1) might impede or support this transition.

The third question looks at the constraints imposed by the situation into which outsourcing is placed and the commercial aspects of the outsourcing 'deal' might place on the creation of social capital and thus knowledge within outsourcing enclaves.

It is:

RQ3 'How is the development of social capital in outsourcing enclaves affected by client objectives and implemented governance processes?'

This question digs deeper into factors that might influence the formation of social capital within the outsourcing enclave (or enclaves) that are designed and implemented. It recognises that the legacy of specific pre-existing circumstances might influence the longer term effectiveness of outsourcing as these shape the way that social capital is built. Further, it aims to understand how decisions around governance processes and the way these are implemented in practice will condition the social environment in the outsourcing enclave.

In Chapter 2, literature will be reviewed that relates to these questions. This review will lead to a set of theoretical propositions and a research model. Chapter 3 describes the interpretive methodology that underpins this thesis and how the approach to fieldwork was planned. Chapters 4 and 5 represent the findings of this study, two case studies of the development of IT outsourcing in large organisations. In Chapter 6 these findings are interpreted against the derived propositions and research model leading to a set of conclusions that are described in Chapter 7.

Chapter 2 Literature review

2.1 Introduction

The aim of this literature review chapter is to provide a theoretical basis for describing and analysing outsourcing enclaves. This will be based on an understanding of how existing literature addresses the developing role of IT in organisations, social capital and its relationship to organising structure and knowledge and the development of IT outsourcing. In each topic area, a literature strategy has been devised to identify the most relevant articles and from these to synthesise a set of propositions which extend the research questions and can be taken forward into the research phase of this study. The literature strategy is thus grounded in the three research questions defined in the introduction, Chapter 1:

RQ1 'How do social capital and contextual knowledge support an organisation's ability to innovate using information technology?'

RQ2 'How does design and implementation of IT outsourcing configuration affect the development of the social capital needed to support knowledge creation and thus IT innovation?'

RQ3 'How is the development of social capital in outsourcing configurations affected by client goals and implemented governance processes?'

Following a brief description of the literature strategy there are three main sections in this review.

The first section is a systematic and longitudinal review of the body of literature that addresses the changing role of IT in organisations and how IT has become essential to the support of innovation. Further to this, literature from the IS discipline that relates to the understanding of social capital effects in IT management has been considered. This section describes how IT has evolved since the 1980s from a process technology that brought efficiency to existing processes into a pervasive informing and enabling entity that provides the basis of many organisational competences while having profound consequences of the social environment with those organisations.

The second section examines intangible qualities of an organisation that are relevant to its competence in IT management, specifically its structure, social capital and the consequences of these for new knowledge creation. As such, it looks at selected relevant literature on the relationships of social capital and knowledge to organisational structure.

The final section looks at literature that considers the phenomenon of IT outsourcing. In this section a range of literature is reviewed covering the strategic basis for outsourcing, its development as a means of sourcing services, its development as a management strategy and techniques for its control. The structural consequences of the use of IT outsourcing will be considered, leading to the notion of the 'outsourcing enclave' that was outlined in Chapter 1.

The three sections of this review are each related to the others as shown in figure 1, there is no clear start and end point to the literature 'story'. Any one could therefore open or close this review and each topic will appear throughout it. Each section therefore takes its lead from one topic and aims to relate the literature about this to the other topic areas.
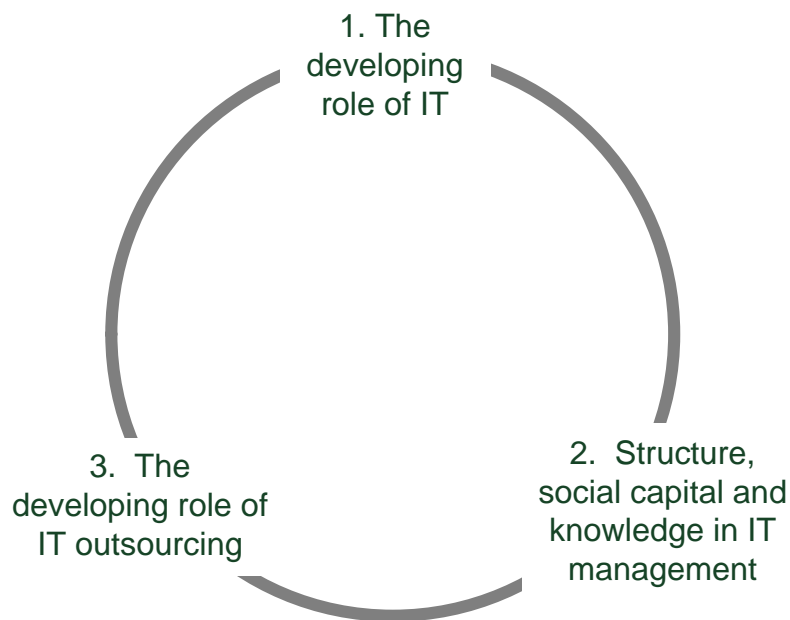
Figure 2.1: Structure of the literature review

The order chosen for the sections reflects the area of study in which this thesis is positioned as described in Chapter 1; IT has become critical to many organisational innovations, factors of structure, social capital and knowledge are relevant to its management, choices to outsource IT affect these factors.

The next section will explain in more detail the strategies used for the literature survey in each of the three areas.

2.2 Literature Strategy

Strategies were devised and carried out for the three sections of this literature review. The literature seemed to play a different role across the three areas, calling for a unique approach to each. In building an understanding the developing role of IT over decades, the literature needed to tell about changing context, to trace a path towards the thinking that sits behind IT management today. For organisational competence, the literature needed to provide a theoretical basis from which analytical frameworks could be constructed and applied to the field data. In outsourcing, the literature needed to inform about how the dimensions of this phenomenon are currently understood; this to provide a basis for the fieldwork and also to point to gaps where this research might contribute.

In the sections below, the strategies devised and used in each area are described.

2.2.1 IS literature

A substantial body of existing research is relevant to the subject of how information technology has developed to support innovation over several decades. Here, a more systematic approach to literature search was chosen. The use of systematic reviews in management research was examined in detail by Tranfield et al (2003) where its use was contrasted with that in medical research. This provides a template for completing a systematic review along with a discussion of the challenges that researchers may fact in this process. A review of this paper does itself propose some of the challenges of selection and interpretation that are referred to within it; however, this has been attempted here. The following table 2.1 therefore extracts key quotes and points from Tranfield et al, and compares them with the systematic approach that was used in this section of the literature review.

Tranfield et al (2003)	Approach used in this literature review section and justification for this
'Within management it will be necessary to conduct scoping studies to assess the relevance and size of the literature and to delimit the subject area or topic' (p.214)	A separate scoping study was not carried out owing to time constraints. The scope of the literature review was based on the problem statement in Chapter 1 and the six determined by initial literature searches using online libraries.
'Any management review protocol may contain a conceptual discussion of the research problem and a statement if the problem's significance rather than a defined research question.' (p.215)	Here, Tranfield et al refer to the question addressed by the literature review, not the overall research. This review question is explored in this section 2.2.
'The search strategy should be reported in detail sufficient to ensure that the search could be replicated.' (p.215)	The search strategy is explained in full below this table.
'The reviewer will initially conduct a review of all potentially relevant citations identified in the search.' (p.215)	This was carried out using the 4 stage process described below.
'As decisions regarding inclusion and exclusion remain relatively subjective, this stage of the systematic review might be conducted by more than one reviewer.' (p.215)	It was not possible to engage a second reviewer for this PhD research. Methodological problems posed by this, and the researcher's professional background in the field of study, along with their mitigation, are discussed in Chapter 3.
'To reduce human error and bias, systematic reviews employ data extraction forms' (p.216)	A simple form that captured the nature of the reviewed literature and its contribution to the developing qualitative propositions was designed and is included at the end of Chapter 2.

Tranfield et al (2003)	Approach used in this literature review section and justification for this
Use of 'meta-synthesis' to identify theory and generalisation that emerges from a body of literature. (p.218)	Tranfield at al acknowledge the philosophical and practical problems of summarising a range of qualitative sources. These were encountered in this review owing to the development of IT related concepts over the lengthy period studied and the diverse, mostly qualitative nature of the literature that was studied. The approach discussed by Tranfield at al of constructing interpretation rather than analysis of the literature reviewed was followed as closely as practicable.
'A good systematic review should make it easier for the practitioner to understand the research by synthesizing extensive primary research papers from which it was derived. [examples follow]' (p. 218).	To provide clarity and structure, the review is divided into time periods. In each of these, key areas of innovation prompted by IT developments are proposed. The ways that these innovations were reported and understood in the reviewed literature is described.
'Within management there is a need to recognize that evidence alone is often insufficient and incomplete, only informing decision-making by bounding available options.' (p.219)	Tranfield et al's criticism here can clearly also be levied at this section of the review. The process of search and selection used here, coupled with the problems of interpretation encountered provide an understanding of the field that is limited and incomplete. It does however identify a clear set of themes through which IT has developed to support organisations' ability to innovate. These are proposed to provide a relevant context for the research topic of the thesis.

Table 2.1 – Review process compared to selected proposals from Tranfield et al (2003)

Research problem

Building understanding of the role that IT has come to play in organisations' ability to innovate is significant to this thesis and forms an explicit part of the first two research questions. This is the process that is thought to be influenced by social capital (RQ1) and the changes to this and to its ability to support knowledge creation that are brought about by outsourcing (RQ2). This problem stated in the first sentence above has two objects (IT and innovation) which have complex definitions; Sayer (1992) points out a distinction between 'thought' objects and 'real' objects, 'We can of course only think about the real object in terms of the thought object' (p.47). Both IT and innovation cannot be understood directly as real objects, their function and their influence on each other must be described in terms of the thought objects that can be interpreted from literature and (subsequently) empirical observation.

The research problem that this section of the literature review must address is one of interpretation. It must trace the development of literature themes around IT and innovation over a period of years and based on this conceptualise the relationship between the two thought objects (Sayer, 1992). This is an essentially qualitative problem and hence not one that has traditionally been addressed by systematic review (Tranfield et al., 2003), but nonetheless a problem in which this type of review process 'increases methodological rigour' (Tranfield et al., 2003 p.220).

Search strategy

A search in the Business Source Complete database for full text, peer reviewed articles that refer to 'Information technology' or 'Information systems' in the article abstract yielded just over 20,000 results in late November 2013. Of these 11,000 were written in the last ten years. A meaningful (and manageable) search for relevant literature called for a search strategy that would both reduce the overall number of articles to be reviewed and lead to a closer match of the nature of the article with the research question.

The chosen strategy was based on that used in other structured literature reviews and involved a four stage process.

Stage 1

A search was set up on the Business Source Complete database available through EBSCO. It was considered that this would provide coverage of the major relevant journals. This search was restricted to full text articles that appeared in scholarly (peer reviewed) journals. An inevitable weakness of this approach is that it misses material in journals which impose embargoes on recent full text articles. The search looked for articles with the words 'information technology' or 'information system' in the abstract as well as the word 'innovation'. Wildcard characters were used to capture plurals and other variations in the ending of each term. The search yielded a total of 1094 results covering a range of dates from 1970 to 2016.

Stage 2

Citation and abstract details for each article were exported to an Endnote database. The article abstracts were then individually scanned and articles rejected for one of three reasons. 2 articles were identified as duplicates, 497 articles were classified as 'search anomalies' where the search terms appeared but were not related in a way that were meaningful for the study, 365 articles were classified as 'not relevant' where the relationship of search terms was meaningful for the study but the subject of the article was not. This left a total of 230 articles for further analysis. These will henceforth be referred to as the 'research universe'.

Stage 3

To isolate articles that might address the relationship between IT and organisational outcomes (to be later expressed in the form of innovation) a further search was conducted within the research universe for mentions of the word 'organis(z)ation' in the article abstract. This revealed 134 articles. These were again individually scanned and articles identified that seemed to cover the relationship mentioned above. To achieve this, three main categories of article were devised: practice, knowledge and organisation. Articles placed in the practice category (64) were typically empirical in nature and covered the effects of IT innovation in specific practical situations. Knowledge related articles (24) focussed on the management of information in a variety of forms. Organisation related articles (41), which were of most interest at this stage of the literature review, covered the relationship between IT and the organisation

of the firm a choice that was based on the assumption that ability to innovate is an organisational characteristic. Smaller categories including literature surveys (1) and theoretical papers (4) were also identified.

Stage 4

The 41 identified articles in the 'organisation' category were examined in detail and the literature review, now focussed on the relationship between IT and innovation was completed. In the course of the review some (5) additional articles of interest, missed by the structured search process, were identified through citations in the reviewed documents. These were added to the database.

To provide more focus and depth to the review, an additional section considers how the concept of social capital has been developed and used in IS literature. The literature was selected from the 'basket of 8' major IS journals[1] (Association for Information Systems, 2011) using a search on the EBSCO database for the search term 'social capital'. This search yielded 32 hits. The abstracts of these papers were scanned and 15 papers rejected as not relevant to this study; the reasons for rejection were primarily the focus of the papers on topics other than corporate IT use such as government driven investment in IT to create social capital in communities, social capital in electronic media collaboration or the relationship between social capital and consumption. The remaining 17 papers were reviewed in this additional section.

2.2.2 Organisational structure, social capital and knowledge literature

A decision to use social capital and knowledge as theoretical starting points for this analysis of outsourcing pointed towards an initial selection of authors and papers that were relevant to this topic. Ideas from earlier work, suggestions from colleagues and pointers from other literature helped identify works to review. This 'snowballed' over time as one insight or theory referenced others, calling for a line to be drawn when it was felt that a sufficiently broad and deep theoretical appreciation had been reached.

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[1] European Journal of Information Systems, Information Systems Journal, Information Systems Research, Journal of AIS, Journal of Information Technology, Journal of MIS, Journal of Strategic Information Systems, MIS Quarterly

This strategy, while not as systematic as those used in later sections, is argued to be sufficient in this broad and theoretical area, to inform an approach to fieldwork .

2.2.3 Outsourcing literature

The strategy for the outsourcing literature search was a hybrid of those for the first two sections. Outsourcing literature was systematically found by searching the Business Source Complete database for full text articles whose abstracts contained the words 'outsource' or 'outsourcing'. This revealed a total of 3844 articles, too many for a structured review. Restricting the search to ABS 4 star journals reduced this to 348 articles which were downloaded into an Endnote database.

These articles were scanned as described in stage 2 above and 70 were determined as being of interest. These were categorised with keywords 'strategy', 'management', 'sourcing', 'transition' and 'control', these being the headline topics that were determined as relevant to the overall review. The articles that were reviewed in this section were initially selected from this database using the categories as a guide to the appropriate sub-section of the review.

Research into the strategic basis for outsourcing led to a further 46 papers being added within this category that were relevant to outsourcing but did not directly mention the search terms in their abstract. Some of these were identified by the 'snowballing' technique, looking at works that were commonly referred to in the outsourcing literature. Others were more classic pieces that were known from earlier work, from teaching experiences and from suggestions by supervisors and colleagues.

The following sections of this literature review will go on to examine and analyse the literature that emerged from these search strategies.

2.3 The developing role of IT in support of innovation

To build this section, a set of IT literature was reviewed using the strategy described in section 2.2.2 above. The set covered a time period from 1984 to 2013; 5 sources were from the 1980s, 10 from the 1990s, 16 from the 2000s and 5 from after 2010. This indicates a steadily increasing level of research attention devoted to this topic until around 2010. This section will review these articles, identifying common themes as these emerge (and are resolved over time) and issues that remain controversial today.

The purpose of this part of the literature review is to build a detailed picture of the ways that information technology supports the innovative abilities of firms and how this support has evolved, and been understood by researchers over a period of almost thirty years. For convenience of reading, the review is split into a number of chronological periods for which broadly common themes are described.

A summary of the sources that have been reviewed and the key themes addressed by each can be found at the end of this chapter in section 2.7.2.

2.3.1 The 1980s and early 1990s – IT facilitates efficiency and effectiveness

Early articles in the series came from a period in which IT was rapidly evolving as a technique for process automation. These articles addressed the ways that information systems and the communication possibilities they were creating could influence efficiency and lead to organisational innovation. Written mostly in the 1980s (although there are examples from much later), articles also frequently touched on the challenge of IT implementation and its acceptance by a workforce used to working with information tools and processes that hitherto were essentially manual. The ways that IT could create value as a tool for the generation, storage and communication of information began to be recognised. Also, careful deployment of IT in the relationships between firms could facilitate valuable collaboration.   Specifically, the role of IT in bringing accuracy and efficiency to the operation of supply chains was described. The more profound implications of IT as a tool for creating radical change in the organisation of a firm's processes, people and knowledge resources were identified and initial theories were constructed but these were not explored empirically.

Early ideas on how IT resources could be structured and managed began to emerge (Olson and Chervany, 1980). This described how computing functions could be organised by surveying the actual situation in medium sized US enterprises. The description of the IT function included the broad definitions of system operations, system development and system management (including project selection and IT planning) that is seen in IT organisations to the present day. The survey revealed no differences in the way that IT was organised according to industry type or organisation size. This research, albeit conducted in a technology climate very different from that of the 2010's suggests how IT resources might be structured in a way that is independent of the function of the wider organisation. A 'right' way to manage IT emerges that becomes institutionalised in an IT industry, separate from the organisations it serves.

Some of the social effects of IT use began to be understood (Foster and Flynn, 1984). This example of using case study research to understand IT describes how the implementation of an information system affected work in a unit of General Motors. This system radically changed methods of communication, the role of hierarchy and ultimately the performance of the unit in a positive way. Foster and Flynn identified that the capabilities of the information system allowed realignment of tasks to human resources raising both efficiency and effectiveness. This shows how IT implementation can create value when it is coupled with structuring decisions.

This article recognised specific learning benefits IT brings to an organisation: it facilitates internal communication by cutting across hierarchy and thereby allows more complex information flows to be managed and understood. This capability can support the initial 'search and select' stages of an innovation process (Tidd et al., 2005).

Foster and Flynn's case does not address the problems that IT can bring. Implementation and operation of IT creates risks and IT can provide too much information; this might increase rather than reduce the complexity of decision making. Neither does the case acknowledge the rigidity that information technology use can impose, a factor that was to become clear as firms later sought to improve, redesign or upgrade their systems.

IT was recognised as different from the process technologies that had progressively automated industrial work through the 20th century (Zuboff, 1988). As well as automating processes, IT has an 'informating' quality (Zuboff, 1988, p.10). This

means that as well as automating, it produces information on the functioning of the relevant process.   This allows the process operator to increase his/her knowledge and understanding of that process over time, ultimately changing the nature of the operator's role. Zuboff made case studies of pulp mills where a limited number of parties (operatives, middle managers and senior managers) used information to improve a single (if intricate) process as technology allowed a progression from craft driven, through automated to 'informated' production. As the information generating power of the technology increased over time it prompted change not only in the production process itself but also in the operational and innovative aspects of the roles of the people working with it.

This work gave an alternative and powerful perspective on the role of IT. Although by automating it creates some rigidity, this is unlike the rigidity imposed by the more mechanical forms of automation that had hitherto existed. Critically, IT brought something new in its ability to generate, handle and analyse information about the process it automates.

IT's ability to create value across networks of organisations was also recognised (Child, 1987). Contemporary firms faced three challenges: demand uncertainty, innovation by competitors and cost control. Child recognised that each challenge would become more difficult as markets became increasingly global and the pace of technological change increased. Developing more flexible organisational forms that would allow innovation and production collaboration across a network, could help address these challenges. IT could facilitate the formation and efficient management of these networks.

This idea was extended to address the challenges of implementing networks across different forms of global organisation (Karimi and Konsynski, 1991) and into the social aspects of such networks (Adamides and Karacapilidis, 2006). The latter proposed how systems can provide a structure in which 'innovative concepts co-evolves with the knowledge of the actors involved in the process' (p.58). This reflects the relationship between knowledge and structure, its intrinsically evolutionary nature and the facilitating role of IT.

IT thus came to be seen as a means of facilitating innovation in organisational and industrial structure that involved not only the host firm but also its suppliers, clients and

collaborators over a wide geographical area. The role of IT moved outside the unitary firm and into a wider community of organisations.

The complications and risks IT systems could present also started to be examined. Rossetti and DeZoort (1989) pointed out that effective implementation of information technology calls not only for IT work but also for adaptation in the user organisation. The system implemented must be properly scoped, designed and implemented but the structure and activities of the using organisation must change as well. This highlights both the challenge of IT implementation within an existing innovation process and identifies why the results of such an implementation may differ between organisations. They recognised that the process of IT implementation and adoption is complex and time consuming. Also improvements in business performance from an IT investment may not appear when expected by management or vendors, creating the risk that failure is prematurely declared.

A theoretical perspective on he link between effective IT implementation and the development of knowledge in the organisation was developed (Huber, 1990). In this, two properties of advanced information systems that would boost the effectiveness of an organisation were described. First, they increase capabilities for the speed, reach, ease and control of communication between human and information resources. Second, they aid decision making by improving ability to store, retrieve and process information. Huber went on to propose a theory that connects the implementation of advanced information systems to a firm's 'improved effectiveness of intelligence development and decision making' (p.65). Essentially this states that beneficial outcomes for innovation are a result of combining an organisation's better access to information with changes in its structure; each of these factors being enabled by IT. The former emerges as a direct property of the system, the latter as a necessity for its effective adoption.

Huber's theory could be challenged by the emergence of the internet (about 5 years after the paper was written). This could be seen as an information source, external to the firm, which offers access to a vast amount of unstructured data of varying quality. The internet would improve the communicative property of IT but confuse decision making, unless careful further adaptations to organisation, process and systems were made. Despite this weakness in the theory that can be seen with hindsight, the

observation that information and structure must combine to secure the knowledge and competence benefits an information system can bring is insightful.

2.3.2 The 1990's – IT as a component of innovation and the emergence of the 'IT System'

At the start of the 1990's, a more profound connection between IT and the development of organisational capabilities and structural forms began to be explored. IT was now established as more than a tool for process automation. When properly planned and implemented, its potential to create competitive advantage was recognised. The now widespread availability of desktop computing, networking and the emergence of applications like email and bulletin boards meant that the basics of IT were well understood. In parallel, understanding grew of the challenges of IT implementation and management. It was recognised that these could not always be addressed by specialist IT departments on their own. The system of IT within the firm was seen to include not only hardware, software and communications but also wider organisational processes, information and social aspects of human behaviour. Finally, the development and rapid growth of the internet during this decade began to change in the way information could be collected and used to support innovation.

The way IT influenced the processes within organisations, not only its consequences for their results was examined (Boynton and Victor, 1991). They proposed that for effective development of IT capabilities, an organisation should be seen as a bundle of process capabilities rather than product lines. An effective organisation would be able to deploy these capabilities dynamically, in response to change in customer demand or market conditions. Designing IT systems for cost reduction only, risks creating inflexibility that limits this dynamic capability. Systems that are designed to support flexibility, can create possibilities for innovation and for speedy response to the innovation of competitors.

This is a step on from the view of IT as a tool for efficiency *within existing processes* that was expressed in the 1980s. Organisations could use IT to build capabilities, hitherto unavailable, that were grounded in information and communication systems. IT started to become part of the innovation system of the organisation not merely a support for extant innovation processes.

Technologically grounded IT capabilities are largely impossible to protect from imitation and hence in their own right cannot create competitive advantage (Barney, 1991). Instead advantage emerges from the ability of a firm's IT systems to create value in their combination with the other strategic resources held by the firm (Clemons and Row, 1991). IT is complementary to those resources and heterogeneity of the relationships created is the source of competitive advantage. Here the concept of IT enabled innovation can be seen, innovation emerges not only from the organisation's IT system but from its combination with wider organisational resources and competencies .

Clemons and Row therefore provided a theoretical link between IT innovation, as an organisation's choices about developing IT resources and capabilities and the strategic management concept of the Resource Based View (RBV) of the firm (Barney, 1991, Wernerfelt, 1984). They thereby suggest that competence in IT complements other strategic resources to drive sustained competitive advantage . Many criticisms of the RBV (eg. Kraaijenbrink et al., 2010) can also be levelled against this article; notably it is easier to identify where competitive advantage has been created than where it can be. Are most examples of the successful creation of complementary value between IT and other strategic resources simply a result of chance or luck?

This problem of understanding and planning how IT innovation can combine with the wider organisation could be addressed by codifying organisational activity (Swanson, 1994). IT innovations affect the activity of the firm at three levels which Swanson classified as parts of the operating 'core' of the business: information technology itself, administration and production. The effect of an innovation may be contained within the IT function alone, may be wider and impact the administrative activity of the firm, or may shape the way that the firm produces and delivers its products holistically. Swanson also observed that the IT team within the organisation has two important relationships that define the way it operates and influence its innovation capabilities. One relationship is with professional reference points that are external to the organisation, these may be colleagues in other firms, consultants or suppliers. The second is with its internal colleagues who are specialists in the work of the firm but not in IT. An IT function that is externally driven will produce a wider range of innovations, especially where the organisation sees IT as a strategic function. An internally driven

team will innovate less but will tend to focus on those innovations that have an organisation-wide impact.

Swanson brings a more nuanced view of the role of IT in the innovation activities of the organisation. IT, seen as a group of people, enables organisational innovations but also fulfils other innovative functions within the organisation. The question of absorption: should IT 'push' or the organisation 'pull' innovations has no single answer. Rather it is seen to be influenced by subtle factors of professionalism, organisational power and the path that the organisation has followed in building the technology of IT and an understanding its operational relevance. The notion of an 'IT system' that involves not only the IT team but also the community of users in the organisation and the IT profession outside it starts here to become apparent.

Empirical researchers examined some of these theoretical factors, leading to a deeper understanding of how IT driven innovations become successful. For example, Lind and Zmud (1991) investigated complementarity; how building understanding between user communities and technology providers would lead to greater 'Innovativeness' in the use and capabilities of IT. Gatian *et al* (1995) looked at absorption, demonstrating how the 'Innovative thrust' of management and the 'Innovative Climate' of organisations were success factors in the deployment of IT systems that aimed to achieve competitive advantage. Each study had limitations: Lind and Zmud was based on research in a single large firm while Gatian *et al* relied heavily on contributors' self-assessment of their innovative abilities and outcomes. This research however provided empirical insight into the causal relationships in the IT system of the firm, enriching the picture of the environment in which IT innovations and their outcomes were happening .

The relationship between IT and innovation has also been studied using perspectives from Practice Theory and Institutional Theory. Taking a practice view, Orlikowski (1996) described a detailed case study on the complex interactions between an IT innovation and the working of an user organisation over a number of years. This described how the implementation of an IT innovation changed organisational capabilities in both formal and informal ways. Across this period, the IT innovation was also itself adapted to the changing needs of the users, reflecting the recursive nature of IT innovation; it both changes organisations and is itself changed by them.

Also looking at IT driven innovations from an institutional perspective, Swanson and Ramiller (1997) proposed that 'organising visions' emerge which recursively guide the process of their development and adoption. Based on these visions a growing community of users and experts develop and form a discourse around the innovation that drives it through stages of 'interpretation, legitimation and mobilization' (p.460). The existence and working of organising visions was subsequently examined empirically (Ramiller and Swanson, 2003), leading to a conclusion that organising visions have 'careers' characterised by phases of growth, stability and decline; these phases are related to the level of proponents as opposed to detractors in the vocal community. The relationship between the career phases and levels of 'interpretability, plausibility, importance, and discontinuity' (p.39) is explored. These factors were proposed to represent aspects of 'sense making' around the developing role of the innovation in the organisation.

In different ways, these theories allow exploration of the relationship between the evolution of IT capability, the changing structures of the organisations that use it and the social capital sitting in these organisations. The IT system resides in broader organisational and industrial contexts in which IT experts, users, non-users, competitors and clients interact with each other. The challenge begins to emerge of understanding IT innovation and managing its risks in this complex environment.

2.3.3 2000 – 2006 IT as a reflection of organisational competence and a factor in competitiveness

Factors in the environment of the organisation that might influence its ability to implement IT innovations successfully were investigated more deeply (Sethi et al., 2003). By considering how IT capabilities and the (now widespread) internet were developing to support new product development, Sethi et al developed a series of theoretical propositions around factors in the organisation and its environment that could influence or hamper success. These included the strategic orientation of the organisation towards innovation, the levels of competitiveness and uncertainty in its environment, its structure, the importance of partner relationships and the quality of its existing IT infrastructure. The article proposes that to secure the benefits of using an IT system for new product development an organisation must expect significant

implementation cost and be prepared to experience a degree of organisational change.

Factors in the relationship between the organisation and its wider institutional community and their influence over ability to innovate with IT were further investigated (Swanson and Ramiller, 2004). Here, concepts of 'mindfulness' and 'mindlessness' in adoption of IT innovation were proposed. Using a mindful approach the organisation 'attends to an innovation with reasoning grounded in its own organizational facts and specifics' (p.559). In contrast, a mindless organisation's '…actions betray a lack of attention to organizational specifics' (p.563). The labelling of actions as mindful or mindless is not pejorative however . Mindless adoptions take place when an organisation takes on an IT innovation simply because it becomes the norm in its industry for this to happen. Thus Swanson and Ramiller propose that while an organisation may mindlessly adopt an innovation in its early stages, full extraction of value requires the development over time of a mindful approach to full adoption. Harking back to Swanson (1994) the relationship of the organisation to its institutional community is an important factor in this process. This reflects the 'interdependence of organizational mindfulness and the larger community discourse surrounding the innovation, where the latter serves as the crucial site for the development, capture, and sharing of knowledge among firms' (p. 568).

In this period the literature also began to examine how IT capabilities themselves enable organisational innovation and competitive advantage. Here, the IT system moves from being a tool for building automation and efficiency, to becoming an organisational competence in its own right. However, possibly stimulated by the growing complexity in IT use, a problem of assessing causality between IT innovation and its organisational outcome began to be recognised.

Dewett and Jones (2001) pointed this out in a review of relevant IT literature published in six leading management journals over five years. They commented that 'the role of IT in promoting innovation is very under-represented in the literature because of the focus on its efficiency-enhancing properties' (p.326). They observed how IT drives both efficiency and innovation outcomes. Indeed, IT can moderate between different organisational characteristics and these outcomes. In other words, IT is not simply an independent variable in the creation of efficiency and innovation, rather it shapes how

existing factors like organisational structure, size and culture are effective. This comes from IT's ability to create information efficiencies and synergies. 'Efficiencies' relate to the increase in organisational ability to process information that IT brings, 'synergies' to IT's facilitation of information sharing between groups or individuals. Dewett and Jones' proposal is a development of the idea of 'complementarity and co-speciality' of IT with the firm's strategic resources that was espoused a decade earlier by Clemons and Row (1991). However here IT is seen to complement the intangible social capital of the organisation.

Taken together, these articles show how IT can allow the organisation to develop a set of innovation related competencies. Success is contingent on a range of factors that emerge from the organisation's industrial and internal contexts. The contrast between the articles is in the way IT relates to the wider organisation's system of innovation. Dewett and Jones see IT as a moderator between characteristics of the firm and its innovative ability while Sethi *et al* regard the characteristics of the firm (and its broader environment) as predictors of the success of an IT innovation in leading to better innovation capability for the wider firm. Swanson and Ramiller take a broadly similar position but point out how a subtle change in the characteristics of the firm or its environment, such as a development of mindfulness, can lead to better innovation from existing IT capabilities that were mindlessly adopted in the past.

The problem of causality was examined in detail by Fichman (2001). He recognised that individual IT innovations usually combine with each other to change or create competences. Hence, using an example from Dewett and Jones discussed above, providing timely and efficient information to the organisation may involve a combination of IT innovations delivered in different project activities at different times. These IT innovations can therefore be seen as building blocks of organisational competence, the blocks forming part of a 'construction set' that changes over time. Attempting to track the outcome of an individual IT innovation without recognising the potential discontinuities that might arise when new blocks are added or existing blocks are rearranged, can lead to misleading conclusions. Fichman proposed and empirically demonstrated that if the outcomes of IT innovations are aggregated, more reliable empirical analysis of these outcomes can be made.

Fichman recognised the risks in making judgements about the success or failure of an individual IT innovation too early in the adoption process, or of taking too narrow a view of how organisational competences are altered by an individual innovation. However the proposal to aggregate innovations for analysis also seems fraught with difficulty. The problem of unpredictable or ambiguous causality also exists in the choice of innovations to aggregate and the choice of when to make such an assessment.

Another issue in understanding the link between IT innovation and organisational competence is that change is not always incremental (Lyytinen and Rose, 2003). They explored the nature and effect of 'disruptive innovation' in Information Systems (IS) building on the concept proposed by Christensen (1997). Like Swanson (1994), they recognised a distinction between 'pull' and 'push' forces in the creation and adoption of an IS innovation. They argued that IS innovation research to date had focussed on pull forces, the management of adoption and adopter behaviour. In contract, disruptive innovations are 'push' forces, which conceptually 'incorporate drastic cognitive shifts in the problem-solving frames and the advancement of the uses of IS in organizations with qualitative changes in computing platforms and capability' (p.309). Disruptive innovations can thereby represent major steps in the development of IT capability, the contemporary example used in this paper being internet based computing. Adoption requires a new technology to be built into the infrastructure of the firm, permitting a radical change in the services IS offers the organisation and thus in the organisation's capabilities. To accommodate these disruptive innovations in Swanson's (1994) IT typology, the authors added a new core '0' to Swanson's (1994) model. In this new core, IS infrastructural innovation is located.

The consequences of disruptive IT innovation were further investigated by Carlo, Lyytinen and Rose (2011) building empirically on the concepts developed in the earlier paper (note that the research was based on survey evidence from 2004/5 which was more contemporaneous with the 2003 paper). This research showed that IT platform innovations in core '0' tended to prompt waves of service innovations the 'radicalness' of these corresponding to that of the driving platform innovation. IT can thus be characterised as having waves of radical innovation, set off when a new platform capability adopted. A sequencing of three innovation types is proposed: platform innovations relate to core technology, process innovations relate to the way IT

departments deliver software and service innovations relate to the technological services offered by IT to the organisation. Platform innovations were shown to prompt service innovation before process innovation; when IT capabilities were changed by radical innovation, changes in the firm's procedural ability to deliver services came later. This is a possible explanation for the perceived existence of delivery problems and risks in new IT technologies. Often pressure exists to put these technologies into use before their management implications are fully understood and mastered by the firm.

A comprehensive model of the links between IT competence and competitiveness was developed that reflected the uncertainty of outcomes from IT innovation (Sambamurthy et al., 2003). This identified that two important strategic processes exist in IT innovation. First, a process of IT based capability building leads to the creation of 'digital options' that the organisation can exercise. These digital options are dimensioned in terms of the reach and richness of processes and knowledge that they can make available to the firm. Creating competitive advantage from these options involves a second process of entrepreneurial action.

A more deterministic view of the way IT can create innovative capability was described by Peppard and Ward (2005). Based on studies of real projects, they proposed that major IT implementations broadly take place in two phases. In the first, the implementation aims to solve existing business problems using IT. Here the organisation is driven by an idealised vision of the benefits the new system will bring, a vision influenced by the actual (or perceived) successes others have achieved with similar systems. Once the system is (usually unsuccessfully) delivered, the organisation can start to understand how it might work in its own operating context. This leads to formulation of a revised and less idealistic vision. The implementation programme then undergoes a 'shakedown', shifting to become more realistic, more anchored in the operating environment and allowing ideas to develop of how the system can drive innovation. The authors identify that further conditions must apply if such innovation is to happen. They propose that 'Innovation is dependent on the combination of the technology, the organization's technical expertise, and the ability of the organization to change in order to make effective use of the new capabilities' (p.58), recognising the need for a number of dynamic organisational capabilities to be

present (Eisenhardt and Martin, 2000, Teece et al., 1997). Also of course, the project must survive the first phase to achieve the second.

In summary, these models capture the intricate nature of the relationship between the IT competence of the organisation, its internal environment and its broader ability to achieve competitive advantage. They emphasise how these three must combine to create business value from IT investment. The recursive nature of the relationship between technology and organisation that was earlier explored by Orlikowski (1996) is theorised here in a comprehensive way. Sambamurthy *et al's* dimensioning of digital options highlights the role of knowledge alongside process competence and is in contrast to Swanson's (1994) concepts of IT, administrative and process 'cores' (developed further by Lyytinen and Rose); this probably reflects changing views on theory of the firm away from one based on simple resources and competences towards one that acknowledges the role of knowledge as a tacit, intangible resource an organisation can create. Peppard and Ward's description of the dynamic capabilities an organisation must possess (or develop) to adapt technology and organisation together, instead of forcing one to follow the other usefully explore how a recursive relationship between these factors can actually work in the real world.

2.3.4 2006 onwards – IT supports innovation, but grows in complexity

From the mid-2000s onwards, literature considered how the now powerful IT capabilities that organisations possessed could be understood and applied within business strategies. As predicted by Zuboff (1988) this coincided with a significant increase in the amount of IT-enabled information available to businesses and recognition that effective use of this information could be a source of competitive advantage. Information complexity further increased with the development of internet enabled social media, smartphone and tablet driven mobility and falling costs of information collection and storage. By now, the use of IT to automate business processes had matured into a mainstream activity, connected with the development of onshore and offshore outsourcing (eg.Lacity et al., 2008).

Methodological challenges were recognised in trying to understand this growing complexity empirically. Ward (2012) pointed to the problem of researching information systems strategies (ISS) writing, '(t)he increasingly varied and dispersed role of IS/IT in organisations has meant it has become a component of many other business and

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management disciplines, making the subject matter of ISS more complex' (p.169). Duhan et al (2001), Rivard et al (2006) and Anaya et al (2015) used case study and survey approaches to relate IT as a strategic resource to existing theories of core competence (Prahalad and Hamel, 1990), strategic resources (Barney, 1991) competitive strategy (Porter, 1985) and IT's ability to create strategic value (Peppard and Ward, 2005). These articles showed the relevance of strategic management thinking to IT competence in the specific contexts of the organisations researched. Some meaningful conclusions about the strategic implications of IT in these contexts can be drawn but, as recognised by Ward (2012) the generalisation of these to wider IT practice is problematic.

Aral and Weill (2007) went a step further in tackling this problem, developing methodology for understanding how IT as a resource influences outcomes at the level of the organisation. They developed a theoretical model of IT resources in which two factors were identified: allocation of investment to specific IT asset categories and level of IT capability. These two factors were operationalised based on earlier research and on case study examples. The subsequent detailed factor descriptions were then tested empirically leading to two useful conclusions. First, to understand the effect of IT investment on results that investment must be considered in a disaggregated form. In other words, some categories of IT investment have a strong positive correlation with the financial measures, others a negative correlation and others no correlation at all. Second, the IT capabilities of the organisation act as a moderator to these effects; perhaps unsurprisingly, higher levels of IT capability predict better outcomes from similar levels of IT investment. This paper again illustrates the complexity of causality within the IT system of an organisation but provides insights into how this can be opened up both functionally and methodologically. The operationalization of the factors is a problem (and opportunity) that was recognised by the authors. Different choices of how IT asset categories are defined or how IT capability is dimensioned could lead to new conclusions about the functioning of the system.

Other authors retained a focus on practical issues of managing IT and its now powerful potential within innovation management. Karanja and Bhatt (2014) demonstrated that there was a significant link between a firm's investment in IT and its innovation ability, the latter expressed quantitatively using patents. Somewhat bizarrely, this research

relied on data from the early 1990's meaning that contemporary factors, like availability of the internet, could not be used to interpret the results. Using more recent data, Fernandez-Meza et al (2014) researched the relationship between IT investments, IT management competences and strategic success in innovation. They found that simple IT investments did not provide strategic value unless mediating factors, notably a competence in internal learning, were present. This empirical research, albeit focussed in a single industrial sector, demonstrated again the complex causality in IT use. Similar findings were made by Cui at el (2015) who also considered the organisation's attitude towards open innovation, effectively the extension of the learning competence across networks of organisations. Learning processes were also examined by Roberts et al (2016) who examined an organisation's ability to sense changes in its environment that could support innovation ability. They demonstrated that information systems (specifically decision support systems) could help this sensing process but only if people were innovative in their use of the systems. The constructs used to measure innovation ability were the number and diversity of 'idea sets' held by the researched managers, a concept that related to their ability to generate new knowledge or to apply existing knowledge in novel ways.

These results were somewhat contradicted by research conducted by Ainin et al (2015) who found that the IT innovation capability of organisations had an inverse relationship to the customer value that was created. They explained this by the disruptive effect of IT change on the using organisation . Their research sample was narrow – SMEs in a region of Malaysia – which may influence the generalisability of their findings but the research does show that IT innovation remains a complex process with uncertain outcomes.

A distinction was made between different types of IT application and the way that innovation of their capabilities could add to the strategic repertoire of the using organisation (Marwaha and Willmott, 2006). IT provides a set of operational tools for performing routine support of back office operations but it can also bring innovation to these activities leading to competitive advantage. Marwaha and Willmott proposed that IT should be governed in a way that reflects these different roles. Routine IT activities are (usually) uninteresting as sources of competitive advantage and should be managed for operational efficiency. Innovation in IT activities that might lead to competitive advantage should be managed in a way that provides closer alignment

with entrepreneurial expertise in the wider organisation. A number of organisational models for managing the innovative aspects of IT were also suggested. These aimed to develop innovation effectively and to create an environment where managers could quickly divert investment towards ideas with innovative potential. As IT innovations become established, these would be shifted into routine support organisations where focus changes from investment to cost effective management. Marwaha and Willmott further proposed that organisations should develop routines for recognising and implementing this shift in governance method when appropriate.

The problem of identifying costs of IT innovation was examined in depth by Bunduchi and Smart (2010). This challenged the practicality of the approach proposed by both Marwaha and Willmott (2006) and Aral and Weill (2007). Based on a structured literature review, Bunduchi and Smart proposed that most studies of innovation had taken an over-simplistic approach to understanding the costs of IT innovation. They identified categories of cost associated with three phases of innovation: idea generation, idea acceptance and implementation and recognised that further intangible costs would be incurred during the innovation process. A significant barrier to the rational financial appraisal of IT innovation projects was identified; the organisation's command of cost information and its understanding of cost structures must be both comprehensive and insightful if accurate cost and benefit assessments are to be made.

The ways IT might enable collaboration in the organisation and support competitive advantage were further examined (Swink, 2006, Smith and McKeen, 2011). This insight was not new, it had been advanced in different forms right back to Foster and Flynn (1984); yet here the significant progress of IT capability over the preceding decades was acknowledged. Swink proposed that IT applications can be made that facilitate collaboration across the whole value chain of the organisation, not just within its individual elements. He also recognised that the challenges of building such a 'product lifecycle management' system would be significant. They would involve building a comprehensive understanding of value creation in the organisation's existing system of innovation. Further, creating such an information model that simply reflected past successes in collaboration, or limiting its scope to items that could be easily codified would be likely to bring only limited success. The presence of well developed IT applications, that facilitate the underlying processes of the organisation

was assumed. This reflected technological progress in the areas of customer relationship, product management, enterprise resource planning and supply chain optimisation. Swink focussed on the benefits and likely problems of combining aspects of these systems with the tacit human or process knowledge of the organisation. This reflects the 'building block' conceptualisation of IT capability described by Fichman (2001) but with some of the more challenging aspects of its implementation considered. Smith and McKeen (2011) looked more specifically at the practicalities of collaboration and how IT systems could be implemented to tackle these.

Collaboration possibilities increased with the rise of social media and social networking tools which represented IT services originating outside the organisation and whose use became widespread after 2006. Marion et al (2014) examined how the effectiveness of collaboration in new product development was affected by these, in a study that was mostly limited to large US multinational organisations. Their research demonstrated that while social media tools supported effectiveness by allowing information sharing, social networking use was not significant in supporting collaboration. This research endorsed the ongoing importance of internally managed IT services (like email and traditional desktop tools) for collaborative working.

A dynamic view of the relationship between IT and the structure of organisations was developed by Zammuto et al (2007). They proposed that widespread adoption of IT based capabilities now made it possible to build an organisation's structure around its information management capabilities (also, Fairbank et al., 2006). This would create possibilities for innovation (the authors call these innovation 'affordances') based on five specified capabilities: the capability to visualise entire work processes, to create products and services in real time, to collaborate with a known group on a virtual basis, to collaborate with the public and to build effective simulations of proposed action. Visualisation of process and virtual collaboration are affordances of IT that echo the more system based approach of Swink (2006). Real time innovation recognised the growing presence of IT or digitally based elements within an organisation's products and services and the ability of contemporary software architectures to configure these elements quickly. Mass collaboration recognised that new IT enabled techniques were emerging for organisations and their customers to interact over product research, advertising and feedback. The simulation affordance

points to capabilities that could emerge from growing quantities of business data and from the increasing power of computing to simulate reality. The authors' reflections on contemporary initiatives like 'Second Life' have not stood the test of time but their ideas on 'Business Intelligence', that predict the developing importance of analytics based on 'big' data are insightful. Describing the relationship between technology and organisation they say, 'an affordance perspective recognizes that a technological object has some recognized functionality but needs to be recognized as a social object. As a social object, its influence on organizational functioning and performance cannot be separated from expertise, jobs, processes, or structures' (p.753). This description sums up the necessary conflation of technological and social issues that IT planning and implementation had come to represent.

This confluence of digital technology, knowledge and social factors into innovation networks was described by Lyytinen at al (2016). They propose that digitalisation now shapes innovation not only by effectively decreasing the cost of communication between knowledgeable players in the innovation network but also by increasing the access to knowledge and innovation resources by participants in those networks. A typology of innovation networks was proposed based on the degree of digital connectivity and knowledge heterogeneity that is present. Innovation also requires a series of translations as ideas are increasingly detailed by participants in the innovation network, a process that is has both cognitive and social aspects. As these translations progress, the 'density of knowledge' (Lyytinen et al., 2016 p.57) in the created artefact increases. This theoretical paper illustrates how the use of IT in its broad sense ('digitisation') has come to support a range of approaches to innovation. It also points to the importance of knowledge and social factors in the innovation networks that are digitally enabled.

2.3.5 Social capital and knowledge in IS literature

This section of the literature review examines literature that integrates the theory of social capital with the developing role of IT in supporting innovation. As such it brings together themes identified in the literature review chapter to this point.

The source for this literature is the 'basket of 8' IS journals (Association for Information Systems, 2011). In these, the concept of social capital has been applied to corporate IT management in ways that have been grouped into in four different areas, each relevant to the topics addressed in this thesis.

First, social capital has been used to understand and describe how value can be created from the relationships between IT specialists and the wider organisations in which they work (Hatzakis et al., 2005, Peppard, 2007, Van den Hooff and De Winter, 2011, Schlosser et al., 2015). This is relevant to the effects of introducing the outsourcing enclaves mentioned in Chapter 1 as these lead to a new set of relationships that are relevant to value creation. Second, it has been used to understand how social conditions can influence individuals' behaviour in organisations, especially in regard to formal and informal knowledge sharing (Kankanhalli et al., 2005, Hsu and Chang, 2014) and in the use of knowledge sharing technology (Huysman and Wulf, 2006). This relates to the potential for behaviour change by individuals that outsourcing might provoke. Third, the role of social capital in determining the effectiveness of different organisational forms, including those using outsourcing has been examined (Riemer and Klein, 2008, Robert Jr. et al., 2008, Lioliou and Zimmermann, 2015). This literature is relevant to the understanding of the social capital and knowledge effects of different choices of outsourcing configuration. Finally, the intersection of social capital and knowledge transfer concerns with outsourcing choices has been considered (Rottman, 2008a, Ghosh and Scott, 2009, Zimmermann and Ravishankar, 2014), particularly focussing on the use of offshore resources.

Each of these four areas will now be explored in detail.

1. Social capital in IT value creation:

Social capital theory has been used extensively in understanding how organisations create value from their investments in IT. Hatzakis et al (2005) used social capital theory and a specific framework of social capital derived from that of Nahapiet and Ghoshal (1998) to examine change management interventions into the relationship between business and IT colleagues within a UK bank. In this case, the theory was

used to gain insight into the effects of introducing a 'relationship management initiative', a new team of people, aimed at improving the quality of the business and IT relationship. Hatzakis et al observed that the change in relationship structure caused a shift in the alignment of social capital in the resultant organisation; the overall level of social capital was not increased but its relative presence in old and new relationships changed significantly. Although the case study did not feature outsourcing, the results show how structural change can increase the effectiveness of social capital as a result of its destruction in old relationships and its rebuilding in new ones. Hatzakis et al concluded that social capital provided a coherent yet flexible way of examining IT change. However they also proposed that the framework used could be refined to 'better capture the interrelationships between social capital dimensions, social impacts and organisational outcomes' (p.71). In this refinement more specific connections were drawn between the factors within the structural, relational and cognitive social capital dimensions (Nahapiet and Ghoshal, 1998) and their social outcomes in the relationship management change that was studied.

The role of social capital in supporting value creation across otherwise isolated 'IT' and 'business' functions in organisations was examined by Peppard (2007). Six competencies that are all needed to generate value from IT were identified; Peppard proposed that for each to be developed successfully a combination of technical and business knowledge is required. Often, if IT is managed as a distinct and isolated resource of the organisation, the social separation of the technologists from the business experts prevents these competencies from developing successfully meaning that the value of IT investment is not realised. In this paper, Peppard also acknowledges that social capital can be disrupted by outsourcing, posing a problem in the derivation of IT value realising competencies between outsourcing clients and vendors.

The same overall theme was investigated by Van den Hooft and De Winter (2011) also using the social capital framework of Nahapiet and Ghoshal (1998). They researched the role of social capital factors in the alignment of IT and business interests in a single case using both qualitative and quantitative techniques. The qualitative part of their research showed that a lack of cognitive and relational social capital was associated with a lack of knowledge sharing between the two organisational communities. Their attempt to extend this into a quantified link between social capital factors and IT

effectiveness was largely unsuccessful but they did demonstrate, in the single research site, that levels of structural social capital influence levels of cognitive social capital. Further, levels of relational social capital are influenced by both other dimensions.

The problem of IT and business alignment and the role of social capital in this was also addressed by Schlosser et al (2015) in a quantitative study of the US banking industry. This paper aimed to understand the mediating effects of social alignment between business and IT on the effectiveness of IT governance mechanisms. The dependant variable in the study was a respondent assessed view of an aspect of business performance. One finding was that social capital was 'critical' to the transmission of both explicit and tacit knowledge, the latter aligning with earlier studies. The assessment of social capital in the relationship was however shallow, based essentially on three survey questions only. More usefully, the study reveals that some effective methods for achieving knowledge alignment are not consistently used across the industry sample indicating a degree of immaturity of practice in knowledge management.

2. Social capital in knowledge sharing and management:

The moderating effects of social capital on individuals' knowledge sharing behaviour in organisations using formal knowledge sharing systems were studied by Kankanhalli et al (2005). Here again the dimensions of social capital proposed by Nahapiet and Ghoshal (1998) were used but the research model focussed only on factors of trust, norms and identification within the relational dimension. The strength or weakness of these factors in the context of the organisations studied was used to hypothesise how actors would be motivated to take part in formal knowledge sharing systems. The model was quantitatively tested using a detailed survey with the finding that trust, identification and norms related to sharing played a role in some aspects of sharing behaviour. The narrow focus of the research sample (public organisations in Singapore) may affect the generalisability of this conclusion and the decision to ignore the impact of potential contextual factors in the structural and cognitive dimensions of social capital in the research model seems limiting.

Research into the social factors that motivate knowledge sharing behaviour was extended by Hsu and Chang (2014). They examined the effect of trust and uncertainty on knowledge sharing and looked for significant antecedent factors to each. The conclusions that trust supported knowledge sharing while uncertainty impeded it add little to the findings of Kankanhalli et al (2005) but the examination of antecedent factors is useful. Hsu and Chang show that knowledge providers' uncertainty is increased by concerns over the absorptive capacity of knowledge seekers and by the providers' fear of losing knowledge power. Although not a subject addressed in the research, it could be proposed that each of these factors would be influenced by the commercial pressures present in a outsourcing situation or that other factors that influence uncertainty might arise here. Similarly to the work of Kankanhalli et al, this research is limited by the narrow context and possible cultural factors in the research sample (telecommunications firms in Taiwan).

The impact of social capital on the effectiveness of technological mechanisms for knowledge sharing has also been studied. Huysman and Wulf (2006) attempted to understand how social capital in user communities can influence, and is in turn influenced by IT based knowledge sharing tools. This was done with the aid of a theoretical framework that aligned the social capital conceptualisation of Nahapiet and Ghoshal with that of Adler and Kwon, a framework that is possibly the main contribution of this paper. In this framework, Huysman and Wulf proposed that the structural dimension of social capital provides opportunity for knowledge sharing, the cognitive dimension enables ability to share knowledge and the relational dimension creates motivation. This simplification reduces much of the nuance in the two frameworks but provides an analytically straightforward tool for understanding the relationship between social capital and knowledge management in IT related situations. This paper also points to the recursive relationship between technology and social capital that underpins knowledge management.

3. Social capital in inter-organisational collaboration:

Social capital also plays a role in the effectiveness of collaboration between organisations. Riemer and Klein (2008) examined the role of social capital in ICT based networks of collaborating organisations, challenging an emerging view that

these networks form a logical organisational response to changing global business environments. They questioned the feasibility of using networked organisational forms to deal with tasks of an innovative or complex nature; these tasks present uncertainties which a high level of social capital is needed to resolve. Such social capital is hard to form in networks of firms where lack of formal structure, social diversity and potential spatial distance present a sparse environment for its creation. Riemer and Klein point out that while management cannot create social capital in situations where it is needed, it 'has a role to play in shaping environments that facilitate the development of social capital' (p.157). The paper does not mention IT outsourcing but the parallel is clear between the networks of collaboration that it examines and complex outsourcing situations where a similar network of collaborating organisations is established by the client. Two improvement measures proposed by Riemer and Klein, the imposition of a form of hierarchical control and the creation of long term networks as opposed to short term, project based collaborations may be easier to implement in outsourcing configurations.

Social capital in individual teams was examined by Robert et al (2008). who used an experimental approach to show how social capital influenced the effectiveness of student teams at knowledge integration. The levels of structural and cognitive social capital in participating teams (Nahapiet and Ghoshal, 1998) were quantitatively assessed and related to the effectiveness of those teams' decision making ability when using face-to-face or remote communication with each other. Effective decision making called on the teams to integrate elements of knowledge to which each member had either full, shared or no prior access. Teams with high levels of structural and cognitive social capital were effective decision makers irrespective of the communication medium used; those with lower social capital proved less effective, especially where communication between team members was restricted. The levels of relational social capital were also assessed and shown to be significant with regard to teams' willingness to share knowledge, if not to the final result of that sharing.

These two pieces of research (Riemer and Klein, 2008, Robert Jr. et al., 2008) each show how context and levels of social capital can combine to influence the effectiveness of teams, both when they combine to handle a knowledge related project and when they handle a project individually. In each, the development of management techniques for building social capital over time was proposed as a

recommendation to practitioners. Social network structure was proposed as a focus area by Robert Jr. et al, who identified the importance of decentralised relationship networks with many links, allowing rich and varied opportunities for knowledge exchange. Riemer and Klein emphasised the emergent nature of these networks and went further to discuss how management action could influence the relational aspect of social capital, notably the building of trust as a factor to enable knowledge exchange once social networks have developed.

The effects of social capital in the relationship between IT outsourcing client and vendor was explored by Liouliou and Zimmermann (2015), specifically investigating its mediating effect on opportunistic behaviour. Transaction cost theory (Williamson, 1985) proposes that parties to a transaction will behave opportunistically if an possibility for this arises, each acting in their own interest rather than that of the collective. Investigating two cases of IT outsourcing, Liouliou and Zimmermann observed that this did not happen, openings for opportunistic behaviour were not exploited. Transaction cost theory could not explain this. Liouliou and Zimmerman proposed that the development of cognitive and relational social capital (Nahapiet and Ghoshal, 1998) in the outsourcing relationship reduced uncertainty and thereby mitigated the risks of opportunistic behaviour. They characterised uncertainty as 'internal', relating to the mutual understanding of requirements and as 'behavioural', relating to the mutual understanding of how parties would act in specific circumstances. Social capital provides an alternative form of governance to the more formal contractual approach described by Liouliou and Zimmermann as 'coercive' (p.319) as it forces parties to behave in desired ways rather than encouraging them to do this. This study demonstrates how social capital theory can usefully be applied to understanding aspects of complex outsourcing relationships. In this case the focus was on opportunism but the methodology could be extended further to deepen understanding issues of structure, collaboration and innovation.

4. Social capital in knowledge sharing across offshore outsourcing partners:

Rottman (2008a) used a detailed case study to examine how social capital was successfully created in software development alliances between a US based manufacturing firm and offshore vendors in India. The three dimensions of social

capital proposed by Nahapiet and Ghoshal were used to analyse and understand the effectiveness of the knowledge transfer practices used by the US client to build software development capability in the offshore vendors. The paper concludes that social capital theory provides a means of understanding the effectiveness of such ventures. Social capital, it proposes, formed a necessary, but not sufficient resource for the success in this specific case. The limitation of this study is in the apparent power difference between the parties; the analysis focusses on knowledge transfer from client to vendor. While some knowledge sharing must have happened in the interactions described, the notion of the two parties creating new knowledge from exchange and combination of their respective knowledge resources is not investigated in depth.

How practical management of the effects of social capital could lead to more effective offshore IT outsourcing was also discussed by Ghosh and Scott (2009). They proposed (without detailed justification) that three aspects of social capital were relevant to outsourcing situations: generalised trust within the relevant interactions, identification or 'fraternity' within the combined team and norms that govern knowledge sharing. Based on a single case study, generic activities and practices are suggested to build these social capital aspects thereby creating a relational alignment between client and vendor that can support project success. This paper, which is intensely practice focussed, neatly aligns factors of social capital with offshore outsourcing success. It is solution focussed and unlike Rottman (2008a) does not examine in depth how factors emerge that create a misaligned relationship between client and vendor in the first place. Neither does it report or consider how the sensible solutions proposed interact with the legacy relationship between the parties, notably any contractual governance that is in place.

A deeper case study of how social capital influenced one-way knowledge transfer from a European client to an offshore IT provider in India was conducted by Zimmerman and Ravishankar (2014). Using interviews with participants in the European client, they qualitatively examined the factors within the developing relationship that both helped and hindered effective knowledge transfer. An interesting distinction was drawn between research participants who regarded their offshore colleagues as team members and those who regarded them as suppliers. In the latter case, a shared team identity, part of the relational dimension of social capital was not developed

leading to less effective knowledge transfer or even conflict. Many of the findings here echoed those in the contemporary paper of Hsu and Chang (2014); concerns over absorptive capacity and loss of knowledge power by the Europeans being evident. The paper concludes that efficacy in and expectations of a positive outcome from knowledge transfer can complement social capital effects (in the cognitive and relational dimensions) to make knowledge transfer effective. Acknowledged limitations of the paper are its narrow organisational and cultural context but more significantly its choice to examine the phenomenon from one side only (unlike Rottman (2008a) where vendor opinion was also researched), the view of the Indian recipients of the knowledge transfer effectiveness is absent.

2.3.6 Summary

This review of IT literature shows how understanding of the nature of IT and of its role in supporting wider organisational level innovation has developed since the 1980s. Three themes can be identified in this, the changing nature of IT as a technology, the growth in information available to managers that IT has facilitated and the effect of IT on the organisational structures that it supports and that in turn support it.

Considering first IT as a technology; the early articles essentially describe computing facilities, machines provided to the organisation by a technical department and technology suppliers. These are initially located within single organisations (Foster and Flynn, 1984) but have now developed the capability to link organisations in networks of innovation (Johnston and Vitale, 1988, Cui et al., 2015). The simple machine identity evolved to include elements of computation, information generation, information handling and communication. In the period before 1990, literature broadly described how managers could combine these elements to create efficiency, similar to that created earlier by mechanised process automation (Zuboff, 1988, Marwaha and Willmott, 2006).

While IT's ability to deliver efficiency became accepted, the literature recognised that realising competitive value from its capabilities was not a straightforward task (Peppard and Ward, 2005). IT implementation leads to projects that are complex to plan, understand and implement successfully (Rossetti and DeZoort, 1989). Three

reasons for this were identified. First, IT increased the amount of information that was available to managers. This led to a complex set of further opportunities for change as IT deployments matured (Zuboff, 1988). The digital options IT deployment now creates brought a level of uncertainty to activities like innovation that older process automation technology did not (Lyytinen et al., 2016, Sambamurthy et al., 2003). Second, as the complexity of technology developed, the direct link between any single IT application and the enabling capability on which organisations increasingly relied became blurred. Capability became recognised as something that usually emerged from a combination of applications (Swanson and Ramiller, 1997, Fichman, 2001) not from a single new system. Third, an assessment of the value returned by an individual IT investment project became difficult to calculate (Bunduchi and Smart, 2010). The stepwise developments of incremental IT capability over time and the increasing difficulty of linking these to business outcomes often created mismatch between the using organisation's perceived needs and the implementation of technology to satisfy these (Aral and Weill, 2007, Peppard, 2007).

The second theme in the literature is the changing nature, volume and role of information, information's role in the creation of knowledge and thus of innovation (Karanja and Bhatt, 2014). IT creates information on the processes it manages, this is the difference between IT and automated process technology (Zuboff, 1988). The growing use of IT in the firm therefore increased the amount of information available. Information was initially seen as merely a supporting resource for decision making (Huber, 1990). Yet as its capabilities, scope, availability and cost were improved, it took a more prominent role in the day-to-day operational activities of organisations (Fairbank et al., 2006), their connections to wider communities of suppliers and customers (Marion et al., 2014), their strategic decision making (Roberts et al., 2016) and thus became a competitive tool in its own right (Dewett and Jones, 2001).

The often dispersed nature of IT generated information calls for collaboration between its holders if value is to be created (eg. Smith and McKeen, 2011, Robert Jr. et al., 2008)., This leads to a resource of knowledge that is held in the memory of the organisation (Adamides and Karacapilidis, 2006) and a means by which IT investments can create new sources of value for the wider organisation or innovation network (Johnston and Vitale, 1988, Peppard and Ward, 2005).

The final theme is the impact that IT can have on the structure and capabilities organisations can use to collaborate as creators of innovation. In the early chapters of the IT story, IT was seen as a novel capability introduced into a single firm with the goal of good information management and efficiency (Foster and Flynn, 1984). The literature around social capital in IS shows how this developed into a set of capabilities that could link dispersed parts of the organisation, or a network of organisations with looser, more social links together (Johnston and Vitale, 1988, Riemer and Klein, 2008). The ability to combine IT capability with social capital in the various networks of collaborators that sit around an organisation then emerges as a factor in achieving advantage. This might drive relationships with specialist servicing organisations (Johnston and Vitale, 1988), might form in collective facilities like the internet (Sethi et al., 2003) or might enable the creation of structured knowledge sharing communities (Huysman and Wulf, 2006) .

IT helps the social processes of collaboration, both within operating units (Foster and Flynn, 1984, Zimmermann and Ravishankar, 2014) and across multiple units in the internal value chain (Swink, 2006). It also provides opportunities for information sharing across a network of related organisations in pursuit of risk reduction (Child, 1987) or for collaborative product development (Adamides and Karacapilidis, 2006) . Here, IT's communication and 'informating' qualities (Zuboff, 1988) contribute to an organisation's goal; but one in whose achievement the organisation's social capital acts as a mediating factor (Peppard, 2007).

IT adoption may also profoundly affect the structure of the organisation. The relationship between IT and the structure (of people, resources and routines) within the organisation became a recurring theme across the literature. It was recognised that the complexity and benefits of IT development called for organisations to change their structure in more significant ways than had been needed when responding to simple process automation. This was perhaps most obvious in the change of skills needed by workers (Zuboff, 1988) but also in the ways that organisations use information (Huber, 1990, Fairbank et al., 2006) and the way that operating routines could be designed (Rossetti and DeZoort, 1989, Orlikowski, 1996). Adapting the wider organisation to the increasing use of IT became recognised as a complex problem with social as well as technological aspects (Hatzakis et al., 2005). Also, the ongoing change and uncertainty inherent to IT required a flexible and recursive relationship

between IT and the organisational structures in which it was used to be developed and accepted (Orlikowski, 1996, Marwaha and Willmott, 2006, Zammuto et al., 2007, Peppard, 2007). Organising structures and technology are continuously informed by each other and managers must be prepared to handle the consequent uncertainty. Practically, organisations needed to avoid declaring failure too early and develop the ability to adapt both IT and structure when things did not initially turn out as expected (Lind and Zmud, 1991, Peppard and Ward, 2005).

Competences in IT management emerged and in many industries became essential to the development of competitive advantage (Prahalad and Hamel, 1990). IT related competences seem to exist at two levels: those concerning the exploitation of IT resources and those concerning its development. Exploitational competences reside in the ability to use information and knowledge (eg. Zuboff, 1988, Hsu and Chang, 2014), in translating IT capability into effective processes (Child, 1987, Sambamurthy et al., 2003, Zammuto et al., 2007) and in recognising how IT can complement the other strategic resources of the organisation (Clemons and Row, 1991, Peppard, 2007). Development competences include the ability to build close relationships between users and technology experts (Sethi et al., 2003) and designing the dynamic and flexible IT-enabled processes that can react to uncertainties perceived by the wider user organisation and enable flexibility and change (eg. Boynton and Victor, 1991, Schlosser et al., 2015).

Literature describes how success in the creation of IT competence requires a recursive and continually developing ability to combine changing technology with organisational needs and capabilities. This has three facets: the technological artefacts of IT hardware and software, the structure of resources and processes by which these deliver service to the organisation and the competences the organisation has in managing these. The organisation might develop these facets in a planned 'mindful' fashion or they may be the result of more chaotic evolution processes, accidental decisions or bandwagon effects (Swanson, 1994, Swanson and Ramiller, 2004).

In earlier decades, IT management might have been viewed simplistically as a process to convert resources into results in a more or less predictable way (Olson and Chervany, 1980). However, the development of diverse themes in the literature shows

how IT use has become anything but a predictable activity. In real situations it has both human and social aspects; technology is built by people, routines are to an extent acted out by people, competences are the collective manifestation of the atomised actions of people and are founded in their skills. Management of IT calls for establishment of structure in which people can interact, one that has a social dimension as well as a deterministic one. Indeed the literature reviewed in this section suggests how IT management respects aspects of knowledge and social capital alongside more deterministic technological resources. Literature on structure, social capital and knowledge will be examined in more detail in section 2.4 where a proposition will be described that an organisation's social capital is linked to its ability to create intellectual capital and knowledge (Nahapiet and Ghoshal, 1998). Such knowledge is needed to build IT, relate its capabilities to the needs of the wider organisation and operate it effectively but not all this knowledge can be written down. Section 2.4 will therefore also discuss the notion of tacitness which suggests that much useful knowledge sits within people and grows from their social interactions.

The first stage of the conceptual model this thesis will use can now be developed. The starting point to this is grounded in a conceptualisation of organisations as complex systems for the delivery of tasks proposed by Leavitt (1965/2010) at a time before the development of widespread IT use. Reflecting on how factors within this complexity influence organisational change, Leavitt proposed the 'diamond' model of its most significant variables and their interaction. This is shown here as figure 2.2.
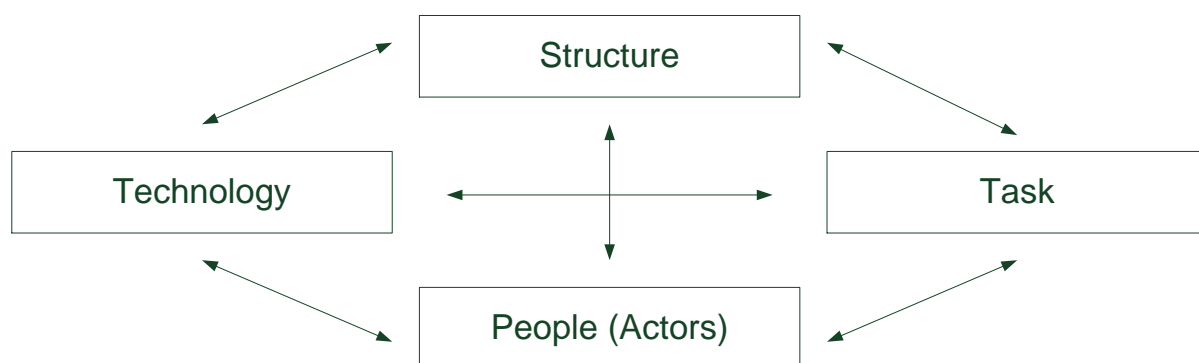
Figure 2.2: Interacting variables in Industrial Organisations (Leavitt, 1965/2010)

Leavitt proposed that the 'task' of an organisation was delivered through interaction between three variables: the organisation's structure, the technology it used and the people or actors within it. A change in the task, although it might be initiated from the perspective of one of the four variables, would inevitably involve the others.

The notion of the simple 'task' of the organisation has been examined and extended since Leavitt's time. Significantly, Prahalad and Hamel (1990) described how organisational performance can be grounded in a range of competences which combine to support the products or tasks of the organisation. A task therefore becomes the result of the application of a bundle of competences.

The review of IT literature in this section 2.3, which covers the period since Leavitt made this framework, describes how IT management has developed as a distinct competence. This competence supports delivery, efficiency and innovation in the organisation's task. Literature describes how a similar set of variables to those proposed by Leavitt interact to support the organisation's IT competence and to derive innovation from this. These variables are relevant technologies, a structure of resources and processes around these and a set of human or social capabilities. In effect, over the half century since Leavitt proposed the 'diamond' at the level of the organisation's task, another diamond has emerged around the organisation's IT competence.

To adapt Leavitt's model to an industrial world where IT use and IT innovation is prevalent it is therefore proposed that 'IT competence' is separated from the other competences of the organisation as a distinct new variable, one that supports the organisation's ability to complete its allotted task. This IT competence variable is itself recursively driven by interacting variables of technology, structure and people. The revised framework can then be displayed as shown in figure 2.3.
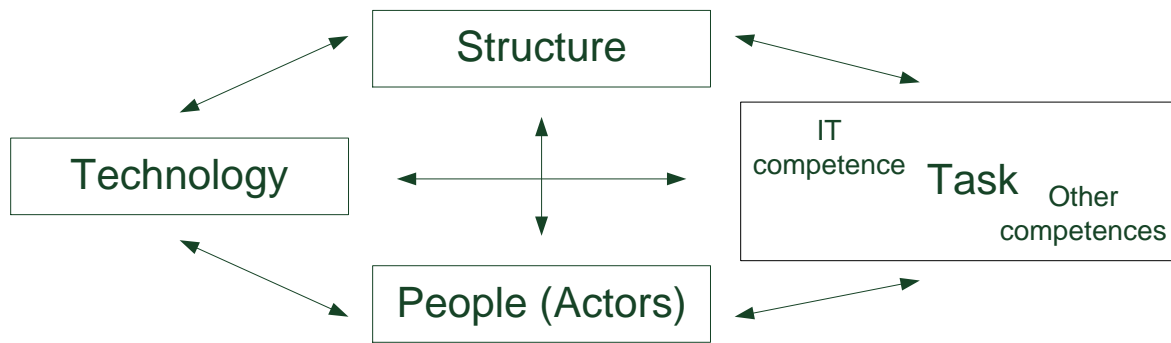
Figure 2.3: Adaptation of Leavitt's diamond to an IT driven industry

IT competence, as shown in figure 2.3 is now effectively a component, a supporter and an outcome of the task the organisation must deliver, alongside its other competences. As well as providing the technological efficiency enabled by IT, strength in this competence will also drive the organisation's ability to innovate and change. While absent for temporal reasons from Leavitt's original model ,IT competence is now sufficiently important to be shown as an organisational output in its own right.

The next section of this review will examine in detail the 'structure' and 'people' related variables to develop this framework further. This will be based around literature on organisational structure, social capital and the management of knowledge.

2.4 Structure, Social Capital and Knowledge in IT management

2.4.1 Introduction

In his original diamond model (figure 2.2), Leavitt (1965/2010) recognised the interactive and recursive nature of the four variables, for example change in the nature of the task would influence change in the other three variables. Thinking on these variables and their complexity has developed since Leavitt's time and relevant literature will be reviewed in this section. This review will be made in relation to the variables' relationship with IT competence and the potential effects of outsourcing on this. For simplicity, the final task of the organisation and the other competences that might be needed to deliver this will not be considered.

In the first part, section 2.4.2, the focus will be on the structural implications of using IT and how this might be influenced by decisions to create outsourcing enclaves. Leavitt's 'People (Actors)' variable will then be considered in sections 2.4.3 and 2.4.4 where literature on social capital and organisational knowledge will be reviewed. Here again, the potential influence outsourcing might have on IT competence in each area will be considered.

2.4.2 Structure

Leavitt defined structure as 'systems of communication, systems of authority (or other roles), and systems of work flow' (p.1144), a definition that encompasses not only how organisational hierarchy is designed but also how information and work pass through it. The structural changes created by outsourcing will therefore vary depending on the client's choices about the configuration of its outsourcing enclaves. These will include choices on the scope of the outsourced service, its scale relative to the wider client organisation, the duration planned for the outsourcing and will be influenced by commercial choices about price, asset ownership and the tasks the outsourcing enclave is required to deliver (Willcocks et al., 2011).

This list of choice attributes suggests that a rigid set of structural definitions is needed to set up outsourcing. The challenges that such rigidity in definition can pose to building a competence in innovation were examined by Brown and Duguid (1991).

They examined the differences between rigid 'canonical' definitions or practice and the ways people actually work, concluding that innovation emerged from flexibility in practice. This flexibility was discouraged by formalisation of structure (in its broad definition as proposed by Leavitt); Brown and Duguid write, '…many modern processes and technologies, particularly those designed to downskill, threaten the robust working, learning and innovating communities and practices of the workplace' (p.53). The innovating organisation would be, in their view, one where multiple more loosely structured communities could form and co-operate within an overall structure of control. This raises an issue over the extent to which IT outsourcing structure should be canonically defined if innovation and change is foreseen to be needed. Brown and Duguid focussed their research on an ethnographic case study which seemed uncomplicated by outsourcing relationships, hence the generalisation of their view to outsourcing situations must be questioned.

The structural concept developed by Brown and Duguid (1991) is that of the 'community of practice' originally proposed by Wenger. Aspects of communities of practice, as described by Wenger (1998) do seem relevant to discussions of outsourcing. An outsourcing enclave has a 'meaning' to the organisation in which it sits, a function that it fulfils. Wenger describes the formulation of such meaning as a dynamic process of ongoing negotiation saying, '(t)he negotiation of meaning is a process that is shaped by multiple elements and that affects these elements. As a result, this negotiation constantly changes the situations to which it gives meaning and affects all participants' (p.54). If this theoretical lens is applied to IT outsourcing, the meaning of the enclave is seen to change in reaction to the context in which it sits, recursively changing that context in return and calling for innovation in its capabilities. Moving to a more specific level, Wenger proposes that 'participation' and 'reification' are factors that are fundamental to the dynamic and ongoing process of negotiation of meaning. Participation describes 'the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises' (p.55). By joining the social community of the outsourcing enclave for the purpose of work, staff of the client and vendor are active participants in that community. Wenger describes reification as 'the process of giving form to our experience by producing objects that that congeal this experience into "thingness". In doing so we create points of focus around which the negotiation of meaning becomes organized.' (p.58). The

changing beliefs of participants in the enclave, and of those in the wider organisation of which it forms a part around its role and purpose form the reification of that purpose. Participation and reification form a 'duality' each reinforcing and correcting the other to ensure that the community of practice continues to evolve over time (Wenger, 1998).

If the IT outsourcing enclave is seen as a example of a community of practice, the process of outsourcing could interfere in specific ways with the interplay of participation and reification and thus the dynamic renegotiation of the meaning of the enclave. The notion of participation for example is constrained in outsourcing by the formal contractual agreements between client and vendor; participation remains in part a social experience but here is one governed by a set of commercial expectations which potentially limit renegotiation. The role of the enclave, to deliver the required set of IT services, is reified in the definition and codification of those services; here too, the imposition of formality might prevent renegotiation of meaning, especially where participation is also constrained. Such renegotiation could be expressed in this context as innovation in service delivery based on the creation of new knowledge.

2.4.3 Social Capital

Outsourcing brings changes to the social aspects of organisations, changes that affect the people or actors within it, and hence, referring back to Leavitt's diamond, also the tasks it can complete. In human terms, IT management is not a unique process, indeed Fukuyama (1995) observed that 'there is scarcely any form of economic activity, from running a dry-cleaning business to fabricating large-scale integrated circuits that does not require the social collaboration of human beings' (p.6), a choice for outsourcing is no exception to this rule. Configurations chosen for outsourcing (Willcocks et al., 2011) might bring about the loss of people, move them to the vendor organisation or lead to the acquisition of new human resources in either home or offshore locations (Willcocks and Griffiths, 2010). These moves of people each introducing a set of collaboration challenges which have been explored in the outsourcing literature (eg. Rottman, 2008a, Zimmermann and Ravishankar, 2014, Willcocks and Kern, 1998). The outsourcing transition, moving from an integrated

organisation to one where outsourcing is present, is therefore a time in which the organisation must change a range of practices, social as well as technical, to accommodate close working with the vendor (Willcocks and Griffiths, 2010). This change applies not only to the ways of the client organisation that makes the choice to outsource, but also to those parts of the vendor organisation that must co-operate with the new client. Cohen and Prusak (2001) articulate a concern that such change activities might have too narrow a focus on only the 'people, process and technology' aspects of organisational effectiveness. They state '…we firmly believe that all of these notions leave out the essential connections among people without which purposive co-operative work cannot happen' (p.8) and go on to propose that combining organisations with different cultures depends as much on 'social capital' issues as on those of a strategic or technical nature. Therefore, to use a combination of two organisations in an outsourcing configuration to achieve goals like quality increase, cost reduction or knowledge gain would require management attention towards the social as well as technical aspects of change.

Social capital theory offers a way of understanding and planning an organisation's approach to the changes outsourcing might typically require. It has been proposed as a lens to use for analysing the different phases of an IT outsourcing project (George et al., 2014). However, by shifting the unit of analysis from the relatively short outsourcing transition to the full duration of the project, social capital theory has also been used to offer a way of understanding the more profound effects of outsourcing on the performance of an organisation's information systems. (Research that has done this will be reviewed in detail later in this chapter).

The conceptual origins of social capital theory can be traced back to the early decades of the 20th century but after the 1970s it attracted more significant academic attention (Cohen and Prusak, 2001). Bourdieu (1986) proposed how capital, in three different forms; economic, cultural and social, constrains the outcomes that can be expected from action. The accumulations of these forms of capital, he writes, 'makes the game of society – not least the economic game – something other than simple games of chance offering at every moment the possibility of a miracle' (p.46). Capital thus imposes a set of constraints on the world, 'which govern its functioning in a durable way, determining the chances of success for practices' (p.46). Social capital, in Bourdieu's view, can be used to influence a specific set of constraints on action,

constraints amenable to influence both by the power of obligations held by members of a social network and the power of those members. This suggests that while social capital arises as individuals accumulate obligations over time, its influence can be exerted by other individuals, who do not possess those obligations themselves but who have accredited access to their network members who do. Social capital, while essentially an asset that is held by an individual, is one that can be invested through a network to achieve another individual's goals.

Social capital is an intangible resource that organisations or individuals use to achieve their ends, indeed its presence is essential for specific ends to be achieved (Coleman, 1988). Coleman argues that social capital, in combination with organisational assets, allows different individual or system level outcomes than the assets alone could create. Examples of this can be found in other literature. For example, social capital can bind the members of a social group, supporting them with information, influence and solidarity that come as a consequence of their membership of that group (Kwon and Adler, 2014). Also, organisations like commercial firms or other bodies that have a defined and narrow purpose, as opposed to more emergent structures in wider society, can purposively manage social assets and social capital for the achievement of their specific goals (Spender, 1996). Finally there is an empirical relationship between the asset component of social capital and the network component, the higher the value of the asset the more effective the network is in transferring it between members of the social group (Kang and Kim, 2013).

Both Bourdieu and Coleman approached social capital from a sociological perspective, specifically examining its influence over educational outcomes. Nahapiet and Ghoshal (1998) examined the role of social capital in organisations, specifically its influence over the creation of intellectual capital and thus organisational advantage. Their definition of social capital was 'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit', (p.243). They propose that social capital increases efficiency of action and, by encouraging co-operative behaviour 'facilitates the development of new forms of association and innovative organization', (p.245) leading to the development of intellectual capital and thus advantage. This view of social capital as an organisational resource moves the concept from the area of sociology to that of strategic management, it forms a resource that, linking back to the

view of Bourdieu, both constrains management action and determines chances of practical success. Nahapiet and Ghoshal proposed that social capital can be considered in three dimensions: structural, cognitive and relational.

The structural dimension includes the network of ties that exist between the human actors in the organisation, the configuration of those networks and their appropriability for different purposes. Ties vary in strength and emerge from relationships; friendship or repeated work related contact between individuals are common sources (Granovetter, 1973). Ties may weaken or expire over time if they are not used (Nahapiet and Ghoshal, 1998) especially where the tie has been set up for purely instrumental reasons (Kwon and Adler, 2014). In networks of ties the concepts of brokerage and closure can be observed (Burt, 2005). Network brokers are individuals who use their exclusive ties or relationships of ties to develop more powerful positions within networks. The benefits of closure are seen when reinforcing links in the network create sanctions for positively monitoring or guiding behaviour (Coleman, 1988).

While Coleman (1988) described how social capital could provide an individual with efficient access to information by building relationship links he did not examine how the quality of those links might affect this. Quality is captured more evidently in the cognitive dimension of social capital that was identified by Nahapiet and Ghoshal (1998). They described this cognitive dimension in terms of a set of intangible resources that drive common conceptual understanding across a community and emerge from the context that the community shares. Shared experience and specific forms of language were examples of these resources. Nahapiet and Ghoshal (1998 p.253) propose that to achieve the 'meaningful' communication that can lead to innovation the communicating parties must share context to some degree.

The relational dimension of social capital describes the atmosphere in which these networks and ties exist (Nahapiet and Ghoshal, 1998). Relational social capital is characterised by factors of trust, identification, the presence of behavioural norms and the exchange and existence of obligations over a period of time. Trust has been defined in different ways. It is 'the expectation that arises within a community of regular, honest and co-operative behaviour, based on commonly shared norms, on the part of other members of that community' (Fukuyama, 1995, p.26). It is needed when a relationship outcome is uncertain, when one party must commit to the relationship

without assurance of how the counterpart will act (Burt, 2005). Nahapiet and Ghoshal (1998) argue that 'trust may both open up access to people for the exchange of intellectual capital…and increase anticipation of value through such exchanges' (p.254-5), suggesting that trust can play an enabling role in new knowledge generation and thus innovation. Established norms of behaviour therefore create trust, anchor expectations of response in an otherwise uncertain situation and therefore allow knowledge transfer and thus innovation. Repetition of ties between individuals and organisations over a period of time can also help trust to build (Gulati, 1995). Trust has be defined in a range of different ways (Das and Teng, 2004) showing how it conceptually overlaps with notions of control and perceptions of risk in relationships between businesses. A distinction in these definitions relevant to outsourcing is that between 'competence trust' and 'goodwill trust' (Das and Teng, 2001). The former describes the trusting party's confidence that its partner offers 'a high probability of getting things accomplished successfully' (p. 258) while the latter helps the trusting party to believe that 'partner firms will cooperate in good faith, rather than behave opportunistically (p.256). Both of these would seem to play a part in an environment where intellectual capital might be created; competence trust allows the parties to recognise each others' ability, goodwill trust allows them to co-operate. These relationships were empirically examined by Kang and Hau (2014) who demonstrated how factors of trust in individuals, recognition of their expertise and the strength of ties between them all positively influenced knowledge transfer.

Identification is the recognition and acceptance by individuals that they belong to a group. Nahapiet and Ghoshal propose that it can be seen as a resource that influences individuals' motivation to contribute to innovation process and their anticipation of value from these processes. Obligations are a manifestation of trust, created when one person does something for another; in the future that person could expect the favour to be returned (Coleman, 1988). Obligations build up in all social networks, they vary in strength and longevity and will be affected by the presence of payment or other financial incentives. However, as these factors essentially operate at an individual level there may be a problem of aggregation when applying this relational dimension of social capital to organisations (Kwon and Adler, 2014).

A deeper understanding of the changes in underlying social capital that it creates could offer insight into how outsourcing affects an organisation's knowledge creation

processes that underpin its competence in innovation. To prepare for this, the next section will review relevant literature in the field of organisational knowledge development.

2.4.4 Knowledge

The role of knowledge as a resource of the organisation was acknowledged by Penrose (1959) and Wernerfelt (1984) as they moved towards development of the resource based view of strategy. In this early work, knowledge was given a similar status to other resources like production ability, management skill or technology. In common with social capital, knowledge is not explicitly recognised in Leavitt's diamond (Leavitt, 1965/2010), forming a part of the 'People (actors)' variable. A reason for the omission may be that knowledge is not a simple concept to conceive as a discrete or readily observable resource that drives concrete task outcomes. It has elements that are both tacit and collective in nature, as well as a tendency to change and develop in human hands and minds (Tsoukas, 1996). An organisation's knowledge resource resides in both its employees and in the routines these employees use to deliver products and services. These routines are critical to operations, being the means by which organisations act on the real world, their 'instruments of action' (Mathews, 2003).

Knowledge is also recognised as a resource created in organisations, one that has grown in importance as developed economies have moved away from processing raw materials towards processing information, a change facilitated by the development of information technology (Zuboff, 1988). This move created new knowledge industries (Bettis and Hitt, 1995, Teece, 1998) and the recognition that knowledge or information forms an economic good in its own right (Boisot, 2013). Unlike many of those that follow traditional production activities, organisations that exploit knowledge resources will have increasing returns to scale (Teece, 1998). Further, the potential speed of knowledge creation, compared to building fixed assets allows knowledge industries to be both flexible and innovative (Nonaka, 1994).

A profound view of knowledge as a resource around which an organisation could be built was proposed by Kogut and Zander (1992, 1996, 2003). They characterised

firms as 'social communities that specialize in the creation and internal transfer of knowledge' (Kogut and Zander, 2003 p.516) suggesting that the firm's ability to manage knowledge is a more important reason for its existence than its ability to avoid imperfections in the market for transactions. They proposed that the structure of a successful organisation allows the transfer of knowledge through an optimised combination of coded and non-coded mechanisms, further arguing that cutting down the proportion of knowledge that is codified, written down in systems and manuals, reduces the risk of imitation by competitors. This could suggest that the introduction of outsourcing and its consequent creation of organisational barriers and contracts might drive up the proportion of codified knowledge and thereby risk reducing competitiveness.

Outsourcing shifts the focus away from internal knowledge resources and towards those that can be obtained from outside the organisation. A concept that describes an organisation's ability to recognise and collect external knowledge, especially that which exists in other organisations like outsourcing vendors, is its relational capital. Relational capital, is the aggregation of capabilities an organisation has that come from its relationships with external agents. Relational capital complements the social capital in the organisation which allows the collected external knowledge to be combined effectively with the knowledge already owned by the organisation and thus drive innovation (Delgado-Verde et al., 2011, Jiménez-Jiménez et al., 2014). Zardini et al (2015) used survey data to dimension an IT department's relational capital in terms of its links to internal management and operational groups and external IT suppliers, non-IT suppliers and customers. This illustrates the range of knowledge relationships that an IT department may need for effective innovation, relationships that must be replicated by an outsourcing vendor if displaced by transition.

An organisation's ability to acquire knowledge has also been described as its 'absorptive capacity'. This is a critical predictor of an organisation's ability to innovate (Cohen and Levinthal, 1990). Absorptive capacity develops over time and is therefore a consequence of a firm's historic decision making and actions, it is 'path dependent' (Teece et al., 1997). Practically, it reflects an organisation's ability to acquire, assimilate, transform and exploit knowledge that is initially held outside it, four stages in a process that link external knowledge to new innovations (Zahra and George, 2002). The link between absorptive capacity and innovation ability means that it may

also be described as an example of a dynamic capability (Teece et al., 1997, Eisenhardt and Martin, 2000, Zahra and George, 2002). This is a concept that describes an organisation's ability to reconfigure resources in a timely way to meet changing competitive conditions.

The nature of absorptive capacity and its relationship to an organisation's broader innovation policy was qualitatively examined by Aribi and Dupouet (2015) using three case studies of innovative technology organisations. They decomposed absorptive capacity into three activities, knowledge exploration, knowledge transformation and knowledge exploitation. Each was related to the organisation's use of organisational and social capital; the former term was defined as the use of codified knowledge, the latter as its use of tacit knowledge. Aribi and Dupouet observed that a flexible and versatile absorptive process, needed when the organisation operated in fairly competitive markets, would tend to rely more on social capital. Strong social capital would allow knowledge structures to evolve more smoothly and quickly to address changing opportunities. In contrast, where an organisation's markets evolved more slowly and occasional but radical innovation was needed, knowledge building and the creation and presence of organisational knowledge capital became more important. Although the narrow sample means that these conclusions are of limited generalisability, the observations in this paper add an interesting angle to how different innovation policies might call on a different balance of organisational knowledge. The paper does not consider the effects of outsourcing at all but does provide a basis for analysis of its likely effects.

Weigelt (2009) did examine empirically the effects of outsourcing on the adoption of new technologies as a reflection of organisations' absorptive capacity. Looking at a specific banking technology, Weigelt found that while outsourcing helped organisations to access the technology it tended to impede the technology's adoption in those organisations. She proposed that this was a consequence of weakness in integrative capability caused by the organisations' inability, provoked by outsourcing, to build knowledge of a new technology by actually using it; outsourcing thus creating knowledge barriers between client and vendor. Relating this to the later work of Aribi and Dupouet (2015), another explanation could be that the codification implied by outsourcing caused a shift from social to organisational capital where the opposite was required to support this specific technology move.

Much of this research into factors like codification, absorptive capacity and their relationship to social capital reflect the presence of 'tacit' knowledge in organisations (Polanyi, 1966, Winter, 1987). This is the knowledge that either is not or cannot be codified in some form. Tacit knowledge is held by an individual or group of individuals yet is somehow a characteristic of the firm, if not its property (Grant, 1996). The tacit nature of much knowledge explains why 'organisations know more than what their contracts can say' (Kogut and Zander, 1992, p.383). The value of knowledge can thus be preserved by securing it in the organisation and retaining as much of its tacit nature as is possible, a tricky process as tacit knowledge sits in the heads of employees and is thus mobile (Winter, 1987). Winter recognises that knowledge preservation might not be effective in situations where knowledge must be shared with partners or suppliers. He recommends that firms make a 'value maximising choice' (Winter, 1987 p.174) between retaining the tacit nature of relevant knowledge and making it explicit. In a business environment with any degree of complexity or dynamism it is hard to see how such a choice could be made with any precision.

Social capital and absorptive capability can combine to allow new knowledge to be created (Nonaka, 1994). In this process, tacit knowledge that exists in the organisation ('socialized'), is shared in explicit form ('externalized') then joined with other explicit knowledge to create new knowledge ('combined') and finally reabsorbed into the practices of the organisation ('internalized'). Nonaka's cycle adds to understanding of knowledge creation but its intangible nature makes it hard to recognise and manage. Recognising this, Nonaka identified the conditions in an organisation needed for the cycle to work. These included the presence of 'creative chaos' (p.27), situations where uncertainty creates a pervasive drive for change, the presence of information 'redundancy' (p.27) where individuals have access to information not directly relevant to their daily activities and 'requisite variety' (p.27) in the organisation, a diversity of activity that encourages efficient information creation and processing. Nonaka's organisation vision, based on the successful Japanese innovators of the period, called on management to create a balance between operational hierarchies and project teams. This would avoid problems of dominant information leadership from the top of the firm or time consuming dependence on inflexible knowledge resources held in the lower levels of a hierarchy.

Contractual and structural decisions about how individuals are linked to organisations can influence the way they contribute their knowledge (Conner and Prahalad, 1996). The need to acquire and assimilate knowledge might then affect an organisation's choice between buying skills in the market (as contractors) or bringing them into the structure of the firm (as employees). An individual may be motivated to join a firm by the possibility of learning and receiving guidance in a structured way. The organisation also gains flexibility by hiring individuals rather than using contractors as hiring reduces the risks of needing to specify job requirements in advance. The effect of opportunistic behaviour (Williamson, 1985) tends to counter this, encouraging individuals to work as market based contractors if their skills are highly specific or well developed and there is little for them to gain from working in a firm. Conner and Prahalad fall short of proposing in detail how their knowledge based theory limits the size and scope of a firm and instead outline a system where a firm could be structured partly along hierarchical lines and partly as a reflection of the market. This would allow all types of knowledge relationship to exist simultaneously within it.

Addressing this issue of structure from a social capital perspective, a relationship between knowledge processes in an organisation and the nature of its structural social capital was set out by Smedlund (2008). In the theoretical framework described, Smedlund defined three types of knowledge: codified knowledge supports the efficient management of existing businesses, tacit knowledge acts to improve existing businesses and potential knowledge aims to develop new businesses. For each type of knowledge a different structural topology will optimise results: codified knowledge can best be managed through a centralised structure, tacit knowledge through a distributed, evenly cohesive structure and potential knowledge through a decentralised structure with multiple nodes. If reflected in practice, this theory would lead to the presence of multiple parallel networks of different configuration in an organisation that is effective in knowledge management. This would complicate the relatively simplistic view of Spender (1996) and possibly render redundant the notion of an organisations 'knowledge mode switching' capability. It also points to the difficulty of replicating or improving knowledge networks in situations where outsourcing is used to bring new knowledge into an organisation. It should be noted that Smedlund's notion of parallel social structures in an organisation has no empirical support in the paper.

In another theoretical paper on the same theme of social network topology, Alguezai and Filieri (2010) contrasted the benefits and risks of cohesive and sparse (decentralised) structural topologies for innovation success. They concluded that for higher innovation performance, organisations needed 'to develop a balanced mixture of both types' (p.901). The main contribution of this paper is perhaps its reflection on the potential negative aspects of social capital, established networks can resist new ideas as well as create them.

The problem of the balance between cohesion and decentralisation in social network configuration was investigated empirically by Di Vincenzo et al (2012). They observed that an optimal level of network cohesion could be reached where an organisation's ability to increase knowledge though learning would be maximised. This level was determined by the number of redundant links in the social network configuration; high redundancy increased the costs of knowledge transfer, low redundancy its effectiveness. This research used the concept of structural 'holes' proposed by Burt (2005) to measure redundancy, as the number of holes in the structure increases, redundancy falls.

This research into the structural dimension of social capital demonstrates that there is a relationship, albeit a complex one, between an organisation's possession of knowledge, the structure of its social capital and its ability to innovate. But the formal and social structure that allow an organisation to collect and absorb knowledge does not provide a sufficient condition for innovation. Two further resources are also needed if a full innovation competence is to be built: memory that can hold knowledge and an ability to learn that will grow or enhance it (Spender, 1996). All three were described by Spender (1996) as closely linked in a 'triangle of interdependency and interdefinition' (p.66), implying that innovation competence is based on a system of knowledge collection, management and retention capabilities whose components are both analytically and socially hard to isolate from each other.

Spender (1996) further identifies two knowledge processes that are relevant to outsourcing. The first concerns the relationship between 'conscious' knowledge of individuals that can be explicitly expressed and the implicitly held 'collective' knowledge of the organisation. Collective knowledge is very likely to be unique to the organisation and so can bring it sustained advantage under the resource based theory

of the firm (Barney, 1991). Therefore an organisation with processes to create this knowledge has a powerful capability that might be directed at both competitiveness and innovation. The second is the ability of organisations to switch between dominant knowledge modes, from collective to individual, from explicit to tacit in response to crises or to the type of radical change (also Spender and Baumard, 1995) that might apply during outsourcing transitions. This switching ability allows previously held collective knowledge to be reshaped. This happens when individuals supply new meanings that make sense in the changing context. It then allows revised and stable patterns of collective knowledge to be established, protecting the advantages this knowledge might bring (Spender, 1996).

Tsoukas (1996) took a similar perspective to Spender, describing organisations as 'distributed knowledge systems' (p.13) but paying less attention to the structural means by which these systems would work. In a distributed knowledge system, multiple individual agents each hold elements of knowledge whose integration is needed to create the collective knowledge that brings value to the organisation. Tsoukas also raises the concept of the collective mind describing this as an 'emergent joint accomplishment' (p.15) in which individuals' understanding and perceptions of the social system in which they operate create knowledge at the organisational level. This knowledge is emergent, developing over time and as such 'the collective mind is known in its entirety to no one although portions of it are known differently to all' (Tsoukas, 1996, p.15).

Relating this back to the theory proposed by Spender and Baumard (1995), the transition to outsourcing could be viewed as a moment of crisis for the collective knowledge of both client and vendor.

Before outsourcing takes place, the organisation has a body of collective functional knowledge. Managers in the client organisation may believe that the quality, cost and capability of this is inadequate for future purposes, stimulating their decision to outsource. However, the disruption to its social capital that outsourcing creates can affect the ability of the IT system to exchange and combine this collective knowledge with that of the vendor in the ways needed to stimulate innovation.

To restore functional collective knowledge in the new outsourcing enclave this theory suggests that a cycle of actions illustrated in figure 2.4 takes place.
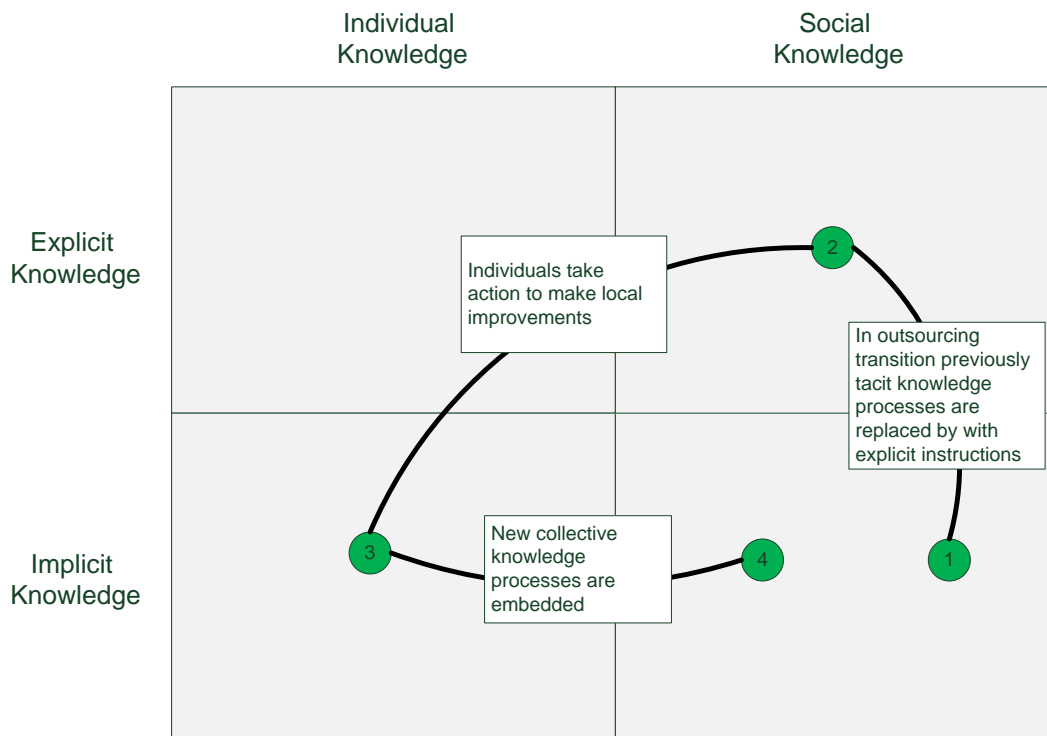
Individual
Knowledge

Social
Knowledge

Explicit
Knowledge

Individuals take
action to make local
improvements

2

In outsourcing
transition previously
tacit knowledge
processes are
replaced by with
explicit instructions

Implicit
Knowledge

3

New collective
knowledge
processes are
embedded

4

1

Spender (1996); Organizational Knowledge, Learning and Memory: Three
Concepts in Search of a Theory

*Figure 2.4: Theoretical evolution of knowledge factors after outsourcing based on
Spender (1996)*

In response to the initial crisis of outsourcing transition (stage 1), behaviour in the
enclave takes a direction that is based on dictated, explicit collective (or social)
knowledge.   This might be seen in agreed management processes, set up between
the client organisation and the chosen outsourcing vendor (stage 2). In many
outsourcing contracts where there is limited or no initial aim to create value through
innovation, management will focus on quality improvement or cost reduction. In these
cases the intended, explicit benefits of outsourcing may be realised at this point and
no further development of knowledge is needed.

However, management may aim to gain advantage from outsourcing by improving
innovation ability, or this aim might develop with the passage of time. Then, Spender's
theory suggests that a degree of socially held implicit knowledge must be built in the
outsourcing enclave (Spender, 1996), documented processes are no longer sufficient.

Effectively, the enclave becomes a community of practice where social forces build on defined structure to create learning, new knowledge creation and thus innovation (Brown and Duguid, 1991, Wenger, 1998). The mechanism proposed for this, related to the situation of IT outsourcing, is individually initiated action that improves the initially agreed management processes bit by bit. In other words knowledgeable agents who are aware of what is needed take action in their own area of activity, use their implicit knowledge to make the new organisation work effectively (stage 3 in figure 2.4). These agents are likely to need motivation as well as permission to act given the changes outsourcing may bring to their formal (or informal) personal ties to the client organisation (Conner and Prahalad, 1996).

Although these agents are themselves knowledgeable, their individually held knowledge is only part of that needed by the organisation as a whole (Tsoukas, 1996). Therefore over time multiple parts of individual tacit knowledge must be institutionalised as collective tacit knowledge if innovation ability is to be restored. For outsourcing to be effective this knowledge base must be more effective and less costly than that which existed before outsourcing took place (stage 4). Here again, the client and vendor parties must be capable, motivated and permitted to collaborate to make the procedural and contractual changes needed for this institutionalisation to take place. Social capital is an enabling factor in this process.

This set of theories has profound implications for the management of knowledge in the social context created by outsourcing. The emergent and unknowable aspects of the collective mind that Tsoukas describes might imply that reaching a managerial solution for effective knowledge assimilation *across two organisations* is a significant challenge. This is also reflected by Spender and Baumard (1995) who propose that 'Management has only indirect influence over the processes which generate collective knowledge' (p.14) and that 'senior management frequently has little idea of the organization's body of knowledge or its real strategic implications' (p.23). When outsourcing has disrupted the social system of the client organisation, can management action enable a new, ideally improved collective mind to emerge?

2.4.5 Summary

Leavitt's 'diamond' (Leavitt, 1965/2010) was introduced at the conclusion of section 2.3. This theorised how three variables, technology, structure and people (actors) interact to influence the ability of organisations to complete their tasks. A refinement of the diamond was proposed to reflect how a new variable, IT competence, has grown in significance since Leavitt's day. IT competence is itself driven by the same variables of technology, structure and people.

In light of the literature reviewed in this section, most of which was completed since Leavitt's day, it is proposed that the 'People (Actors)' variable can be expanded into two more specific variables: social capital and knowledge. The juxtaposition of these factors is evident in the reviewed IS research (Kankanhalli et al., 2005, Peppard, 2007, Robert Jr. et al., 2008, Rottman, 2008(Kankanhalli et al., 2005, Peppard, 2007, Robert Jr. et al., 2008, Rottman, 2008a, Zimmermann and Ravishankar, 2014, Schlosser et al., 2015) with no other factors related to people being prominent. The strong relationship between social capital and knowledge in the human resource of the organisation is also evident in the work on intellectual capital creation (Nahapiet and Ghoshal, 1998) and communities of practice (Brown and Duguid, 1991, Wenger, 1998). This leads to a further adaptation to Leavitt's diamond model of figure 2.3 as shown in figure 2.5 below:
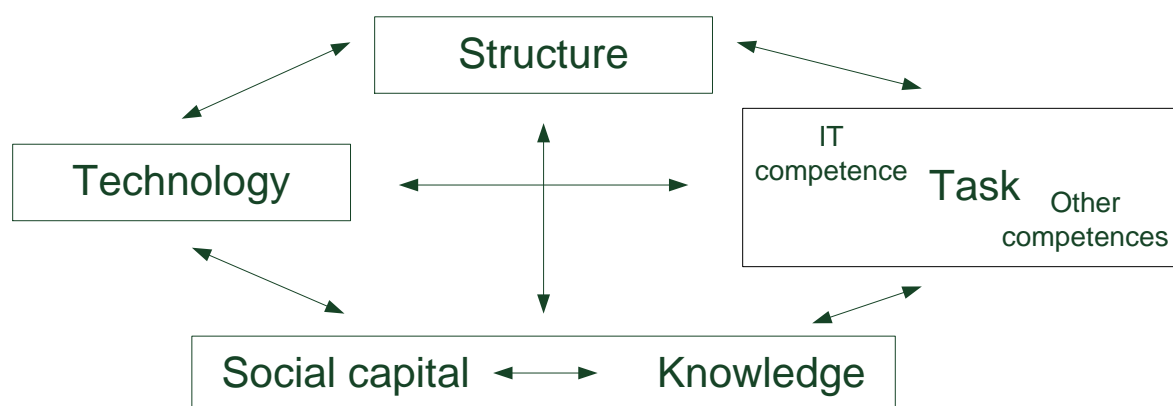
Figure 2.5: Leavitt's diamond adapted for both IT and organisational variables

This pattern of interaction between these variables leads to the first proposition of this thesis:

> Proposition 1: *To create effective IT competences, management must combine technology and structure with contextual knowledge and social capital on an organisation-wide basis.*

The interacting variables also provide a starting point for understanding how outsourcing might affect different aspects of IT competence.

As a structural change, IT outsourcing creates organisational enclaves responsible for the delivery of IT competence. Referring back to the conceptual framework of figure 2.5, creating outsourcing enclave can be represented as a cross section of the interacting variables of the organisation as shown in figure 2.6 below:
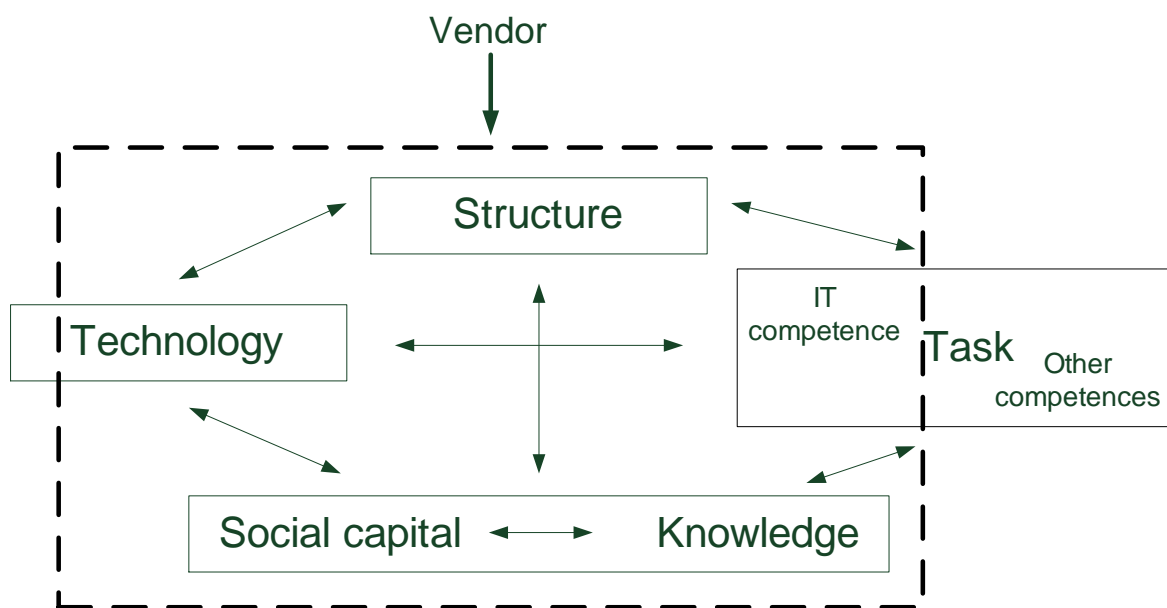
Figure 2.6: Conceptual view of the outsourcing enclave

In figure 2.6, the heavy dashed line represents the outsourcing enclave. It is defined by two decisions: the scope of IT competence it must deliver and the vendor that will be engaged. This combination of scope and vendor means that every outsourcing enclave is likely to be unique.

The structure of the enclave will be agreed with the vendor, defining the human and technological resources that will be moved into it from the former client organisation

and how these will be aligned with the vendor's own resources. The combination of human resources from client and vendor within the enclave means that the variables of social capital and knowledge in the enclave are changed from those in the former organisation.

It is now possible to simplify the framework. The act of outsourcing defines a structure and a vendor, these are no longer therefore variables in the short term. At the point of outsourcing transition, the technology in the enclave is likely to be fixed as any technological change takes time to complete. Technology is also therefore no longer a variable. The wider task of the organisation and the other competences that are needed to achieve this can also be separated from the IT outsourcing decision (although the subsequent ability of the enclave to interact with these is likely to be key to its success). These simplifications result in the framework as shown in figure 2.7 below:
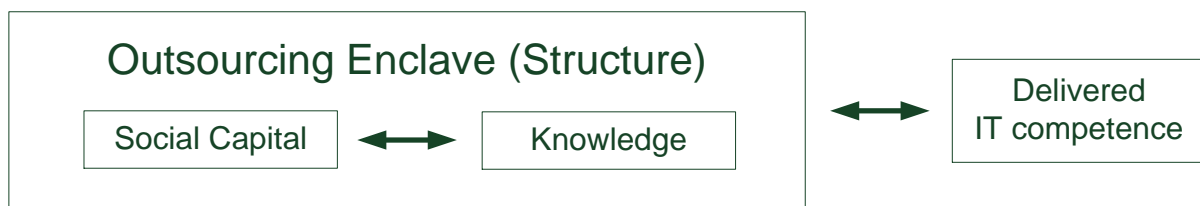
Figure 2.7: Simplified conceptual framework of the outsourcing enclave

The significant remaining variables are the social capital and knowledge that reside within the enclave and the IT competence it delivers *compared* to that required.

Outsourcing enclaves are the structures in which the 'work' of IT outsourcing happens; where the people of the client organisation interact with those of the outsourcing vendor to deliver IT competences intended by the outsourcing contract (Willcocks et al., 2011). Literature shows that enclaves can be examined from different perspectives. As a communities of practice (Wenger, 1998) outsourcing enclaves are structures where social capital that is unique to the specific outsourcing configuration is created. From a knowledge management perspective, outsourcing enclaves are where the new knowledge of the outsourcing vendor can be integrated with that of the client to create the valuable resource of 'heterogeneous collective knowledge' that can

support the organisation's ability to innovate (Tsoukas, 1996). To allow this, the absorptive capacity of the IT department (Cohen and Levinthal, 1990), previously internalised within it and the wider client organisation, must be at least replicated or improved upon (Brown and Duguid, 1991).

Outsourcing means making a disruptive transition from old to new situation (Willcocks and Griffiths, 2010) that will destroy elements of the social capital that existed in the client's original organisation. Yet it is also transformational, as a new body of social capital is built in the outsourcing enclave (Zimmermann and Ravishankar, 2014). The structural, relational and cognitive dimensions of social capital (Nahapiet and Ghoshal, 1998) provide a starting point for theorising about how these processes of disruption and transformation might be understood and related to the ability of the outsourcing enclave to support IT innovation.

This leads to a further proposition that:

> Proposition 2. *IT outsourcing creates unique structural enclaves in which social capital allows the knowledge resources of the client and vendor to be combined to enhance innovation competence.*

This section of the literature review has examined theory concerning how the IT factors discussed in section 2.3 are complemented by factors of structure, social capital and knowledge in the pursuit of innovation. It has related these to the concept of outsourcing, which will be examined in more detail in the next section.

The final section of this review will look at existing literature about the processes involved in IT outsourcing and will propose answers to the third research question. It will further refine the conceptual framework of figure 2.7 leading to a framework that can be tested against the empirical findings of this research.

2.5 The developing role of IT outsourcing

Academic investigation of the effects of IT and other flavours of outsourcing began in the 1990s. Outsourcing was seen as a way that firms could achieve competitive edge in a world where value creation was seen to be shifting from manufacturing to service operations (Quinn et al., 1990a). The advantages of outsourcing were seen to be cost efficiency (Loh and Venkatraman, 1992) and the access it could offer to the knowledge of specialist providers in areas where client organisations either could not afford to, or did not wish to compete themselves (Quinn and Hilmer, 1994). However risks too were identified, Lei and Hitt (1995) proposed that outsourcing 'has deleterious effects on the firm's knowledge base as well as its ability to learn new skills, technologies and capabilities' (p.840), pointing to potential problems that a transition to outsourcing could pose to an organisation's ability to learn and manage knowledge.

This section examines the literature on outsourcing, specifically the outsourcing of IT activities. There are three sections to this part of the literature review. In section 2.5.1, relevant areas of the strategic management literature that provide a basis for outsourcing as a strategy are summarised. Section 2.5.2 examines outsourcing as a tool for IT practitioners and the objectives they may have for an outsourcing strategy. Section 2.5.3 reviews literature concerning how the creation of outsourcing enclaves and the methods of governance applied to them might affect their performance. A concluding section brings these themes together and proposes how the effects of the transition to IT outsourcing might further develop the conceptual framework of figure 2.7.

2.5.1 The basis of outsourcing in strategic management literature

Concepts that are relevant to outsourcing are found across strategic management literature. This is extensive and its implications and relevance this research is only summarised here to set background for more detailed discussion of literature on the practice of outsourcing in sections 2.5.2 and 2.5.3.

Outsourcing is relevant to theories of the firm. It can be seen as a means of redefining the boundary of the firm by shifting related transactions to vendors that can manage these cost effectively (Coase, 1937). Contextual variety introduces risk to this

process; in absence of a universally applicable service model, client and vendor are unlikely to be capable of agreeing a contract that covers all outcomes hence either can behave opportunistically at the other's expense (Williamson, 1985). The risk of such opportunism is high in IT management where technological and contextual uncertainty invariably exists (Holcomb and Hitt, 2007). Here investment made in specific knowledge and technology might yield poor returns if the wrong direction is taken, leading to the potential for opportunism or conflict between client and vendor over which party should make such investments (Conner and Prahalad, 1996). Long lasting relationships can also result in opportunistic shirking of the vendor from providing service to a client that no longer holds the knowledge or skills needed to manage the relationship (Handley and Benton, 2012). Opportunism can be contained not only by putting appropriate contractual agreements and governance processes in place (Williamson, 1985) but also through the network of social relationships that builds around a prolonged or repeated series of transactions (Granovetter, 1985, Lioliou and Zimmermann, 2015). To have strategic control over a long lasting client and vendor relationship in a context of shifting service demands and changing technological capability, a combination of contractual and relationship based governance methods is needed (Poppo and Zenger, 2002).

A second theory of the firm concerns possession of resources and competencies. IT can be seen as a strategic resource of an organisation and competence in its management a means of gaining sustained competitive advantage (Barney, 1991, Penrose, 1959, Wernerfelt, 1984). As IT has developed intimacy with organisations' operational and innovation results (Peppard, 2007), achieving such competence has become an important success factor. The development of IT outsourcing has established a market in which this competence can theoretically be acquired (Barney, 1986). However, if true competitive advantage is to be achieved, the problem of the contextual variety and causal ambiguity that are inherent to IT management needed also to be addressed (Ward, 2012). To provide unique competence that could be core to an organisation's success (Prahalad and Hamel, 1990) a generic IT outsourcing service would be insufficient. It must be combined with other resources either within the client organisation (Dierickx and Cool, 1989) or within networks of organisations over which the client has some sort of control (Mathews, 2003, Riemer and Klein, 2008). This in turn raises questions about how transactions that include valuable

knowledge should best be organised and established in enduring and appropriate outsourcing contracts that restrict opportunism (Conner and Prahalad, 1996).

Strategic use of outsourcing might therefore call on the client firm to identify and isolate its own value creating processes, then choose a series of potential vendors that have the required competences to perform these at the core of their own activities (Quinn et al., 1990b). These can then be combined with the client's own core competence to optimise resource use and competitiveness for all (Quinn and Hilmer, 1994) each organisation gaining simplification, scale efficiency and a focus on knowledge creation in its specialist area. Here again, dynamically changing contexts can be problematic. An organisation might be mistaken in identifying its own core competence or may choose to focus on a competence area that becomes irrelevant. This risk was recognised by Prahalad and Hamel in their original paper on the topic; 'too many companies have unwittingly surrendered core competencies when they cut internal investment in what they mistakenly thought were just "cost centers" in favor of outside suppliers' (Prahalad and Hamel, 1990 p.84). However, evidence shows that organisations of all types have increasingly looked outside their own boundaries for research input (Chesbrough and Crowther, 2006). In the context of IT outsourcing, the risk of competence loss materialises when the client loses detailed knowledge about its IT applications over time, increasingly restricting its ability to manage any outsourcing enclaves that support this (Handley and Benton, 2012).

Changes in operating context may therefore call on an organisation using outsourcing both to protect its core knowledge and to adapt this over time. This means it must possess particular capabilities for change that can be applied to IT in general and outsourcing in particular. These 'dynamic capabilities' have been defined as the organisation's 'ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments' (Teece et al., 1997, p.516) or 'the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die' (Eisenhardt and Martin, 2000, p.1107). Possession of the right dynamic capabilities seems essential for long term success with IT outsourcing in any but the most stable contexts. Three specific components of dynamic capability are adaptive capacity, absorptive capacity and innovative capability (Wang and Ahmed, 2007). These reflect the ability to change in reaction to context, to absorb new relevant knowledge and to support wider

organisational innovation. Such dynamic capabilities can readily be applied to transition towards outsourcing and to the subsequent management of outsourcing enclaves.

In summary therefore, as a strategic initiative, transition to the use of IT outsourcing enclaves represents a change in the boundaries of the organisation. This requires a change in internal governance methods and the development of relational or social management skills. The choice of enclaves calls for careful analysis of vendor competence in relation to those competences that can best be retained in the client organisation. As outsourcing will be implemented in an inevitably changing context, the client organisation must have the dynamic capabilities to react to this by adapting its configuration of outsourcing enclaves, absorbing new knowledge and grasping opportunities for innovation. The next section of this chapter will build on this broad theoretical background with a more detailed examination of literature relating to IT outsourcing as a practice.

2.5.2 Objectives of outsourcing

Outsourcing had emerged in manufacturing industry well before it became a serious strategy in IT management. For example, the vertically integrated structure of the automobile industry in the first half of the 20th century was forced by market pressure to adapt to a more dis-integrated form. In this a concentrated number of auto assemblers emerged that was supported by a much larger base of (mostly independent) parts manufacturers (Lamming, 1993). A model of collaboration emerged in which the development of innovative components was effectively outsourced up the supply chain by the assemblers. In this industry, outsourcing assumed an objective of dividing areas of knowledge and the connected responsibility for innovation between organisations. Each organisation took responsibility for the knowledge it was best placed to develop and to deliver to its collaborators in the wider industry value chain.

Collaboration in innovation is a common objective to both manufacturing and IT outsourcing, but differences began to emerge in the late 1980s as a variety of distinct

IT outsourcing models emerged (Loh and Venkatraman, 1992, Lacity and Hirschheim, 1993a). Outsourcing could satisfy clients' objectives for obtaining high quality yet generic IT services, this contrasted with the more product specific and knowledge intensive manufacturing processes seen in the auto industry . Quinn *et al* (1990a) described this saying; '…value added is increasingly likely to come from technological improvements, styling features, product image and other attributes that only services can create' (p.58). The IT outsourcing industry emerged as a provider of such services, and was fuelled by the growing use and importance of IT across organisations.

The reasoning behind such large scale IT outsourcing projects was quickly questioned by some authors and raised issues that remain to today. Two specific reasons (or 'myths') for its early and rapid growth in popularity were identified and debunked by Lacity and Hirschheim (1993a, 1995). First, they claimed that IT outsourcing at that time was a 'bandwagon' strategy for management teams. Its early reported success in large firms like Kodak (Applegate and Montealegre, 1995) where IT was seen as a commodity had 'prompted many executives to outsource without due consideration of the potential consequences' (Lacity and Hirschheim, 1993a, p.74). Another conclusion from rapid early adoption could have been that the bandwagon was created as executives came to see IT as a commodity and believe that no competitive edge could be achieved through its retention in house. This view was broadly in line with that of the contemporary core competence theorists (Hamel and Prahalad, 1994, Quinn and Hilmer, 1994). More recently sourcing strategies have evolved to embrace the benefits of dividing an organisation's value chain into smaller pieces, the argument shifting to one of how this division can be most optimally achieved (Contractor et al., 2010).

The second 'myth' of IT outsourcing was that it could achieve savings of 10% to 50% of IT costs. Lacity and Hirschheim pointed out that firms' own IT departments could achieve similar results (which might have been true but does not make the possibility of large cost savings from outsourcing a myth) and thus tacitly acknowledged that savings of this scale, however achieved, were available at that time. That a transition to outsourcing generated new costs came possibly as a surprise to managers and was considered in academic literature (Barthelemey, 2001). These included the costs incurred in searching for the vendor, in transition from old to new situations, in

monitoring of the contract and in its eventual unwinding. However, the potential of IT outsourcing to offer compelling cost savings was maintained and continued into the 21st century with the growth of offshoring. Here, clients and vendors used a variety of sourcing models to access low cost IT resources, especially in South Asia, making significant savings compared to labour rates in developed markets (Pfannenstein and Tsai, 2004, Rottman, 2008a).

Outsourcing could (and does) at least offer clients the possibility of guaranteed success against a cost reduction objective when cost savings are enshrined in the vendor's contract. This provides the client with a legal recourse that is impossible to achieve when an internally managed IT team is used (Masten, 1988). It was this justification that probably contributed to the growth in the 1980's and 90's of wide ranging, long term 'total' IT outsourcing deals like Kodak and the UK Inland Revenue case described by Willcocks and Currie (1997).

A further set of risks in defining objectives for IT outsourcing were proposed by Earl (1996). This included the recognition that the uncertain nature of IT would cause problems in defining the contract. Earl stated that 'IT operations and development have always been uncertain. Users are not sure of their needs, new technology is risky, business requirements change, and implementation is full of surprises' (p.29). Earl proposed that flexibility should be built into outsourcing contracts, even if this came at a cost. Earl also pointed to a risk that organisational learning ability would be compromised by a loss of insight into the capabilities and potential of information systems as these are outsourced.

A somewhat contradictory view is that that well designed contracts can encourage the vendor to develop core competences that are mutually complementary to those of its client (Levina and Ross, 2003). This complementarity allows the vendor to deliver improved performance, client satisfaction and growth in its own scale. Client organisations are unable to develop the same set of competences because factors in their hierarchy can intervene. For example an organisation might find it difficult to centralise IT decision rights in its IT team whereas an outsourcing vendor can achieve this through the service contract. Control over decision rights allow the vendor to develop a competences in productivity and cost management which are unavailable to the client firm acting independently.

The question of competence development as an objective of outsourcing was addressed more broadly by Susarla *et al* (2010). Incentives, agreed in the contract, encourage vendors to invest in the client relationship (Susarla et al., 2010). This research points to the risk of the vendor being disadvantaged in future negotiations if these incentives are not in place saying, 'In the absence of appropriate incentives, vendors will underinvest in non-contractible specific investments, which lowers the value from outsourcing' (p.37). This shows the difficulty of obtaining innovation through outsourcing; unless the requirements for the vendor to be innovative can be contractually stated and protected at the outset, the incentives for the vendor to invest speculatively in building systems and knowledge needed to support innovation are low.

A variety of forms of outsourcing exist and decisions around these should be systematically linked to the objectives an organisation sets for the complementary resources is possesses (Insinga and Werle, 2000). This research proposed that an organisation's objectives concerning its strength in a particular function should be related to that function's potential to generate competitive advantage. Based on this, an optimal way of acquiring the services needed to perform the function from the market was proposed. The umbrella term 'outsourcing' becomes a set of choices that include buying services, collaborating, partnering with expert providers or disposing of non-strategic functions to release capital and buying back their required outputs. Adopting this approach could allow an organisation to comply with industry level trends towards specific functions becoming non-strategic in nature. These functions could then be sold or outsourced and scale benefits secured as vendors aggregate the function across multiple firms in the industry. Insinga and Werle thus take a refined approach to outsourcing. They challenge the 'total' approach seen in the 1990s and before, acknowledging that functions with potential to generate competitive advantage might be retained in the organisation. To benefit from this however, an organisation must not only recognise a function as non-strategic but also be confident that it will stay that way, a challenge in IT which is characterised by rapid and unpredictable capability development.

A still more detailed view of the objectives or drivers for outsourcing was developed by Kroes and Ghosh (2010). They identified 19 separate drivers and mapped these to generic competitive priorities of cost, time, innovativeness, quality and flexibility that

would be found in a manufacturing environment. The empirical research they conducted demonstrated that outsourcing can best succeed when the organisation's strategic priorities and its drivers for outsourcing are closely aligned. It also found that the reduction of total costs was the single most significant driver for outsourcing. While this research was conducted among manufacturing organisations and not specifically IT focussed, the generic priorities are likely to be relevant to IT outsourcing situations.

In the early 2000s, the outsourcing of entire business processes (BPO) was developed. Here, a broader scope of client objectives allow the outsourcing vendor's responsibilities to increase beyond the management of technology to include the processes the technology enables. Willcocks *et al* (2004) described how BPO deals offered clients significant cost and efficiency gains as well as access to vendors' skills and scale potential. However they also pointed to the risk that clients could lose significant internal business process know-how an effect that would only become apparent over time. They wrote '…knowledge implications may well be disguised for a time by real cost and service improvements [from BPO], simply because so many back-office business processes inherited by suppliers are so inefficient.' (p.11). This was somewhat contradicted by survey based research in 2011 and 2012 which claimed that many users of BPO were benefitting from innovation in service provision. These innovations were often originated and funded by the outsourcing vendor, or by the vendor in conjunction with the client (Lacity and Willcocks, 2013).

In recent years two further objectives for outsourcing have emerged: access to specialist knowledge and, through the development of offshore outsourcing; the ability to understand and exploit foreign markets (Contractor et al., 2010). The development of more outsourcing supply and the technological tools to manage time critical relationships across the globe offers management an increased choice of functions to outsource. This allows organisations to challenge historic definitions of what functions are actually 'core' and draw a new distinction between truly core and 'essential' services, using outsourcing as a means of sourcing the latter. Hence, between the 1990s and 2010, outsourcing has been seen to develop from a 'blunt instrument' sourcing tool to a more refined technique for finding and using a range of suppliers on a potentially global basis.

More recent literature identified that different IT outsourcing choices can be made within an organisation's span of IT activities. This further challenges the 'one shot' approach as was demonstrated in the Kodak case mentioned above. Based on extensive case research, Willcocks et al (2011) proposed a process for assessing how IT activities might be suitable for outsourcing. A range of variables was considered in this: the contribution of the activity to business operations and to competitive positioning, the level of capability available in the market compared to internally and the relative cost, adjusted for transaction costs. Following such a set of rules would lead to a rational decision on what to outsource and an indication of to which vendors outsourcing contracts could be given. Adopting a more intricate and detailed process of assessment such as this could address some of the problems of inadequate foresight discussed as a criticism to Insinga and Werle (2000) above.

In summary, the outsourcing literature describes a path towards more and more refinement in outsourcing decisions. This was well summarised by Willcocks (2011) as a learning curve showing how IT outsourcing has developed from its early origins: in this, the initial 'hype' of IT outsourcing as a simple shift of non-core activities out of an organisation to a single expert vendor has developed into a much more sophisticated model. Today's model of IT outsourcing is one where selected IT and business process activities may be moved to a number of vendors using different contractual and governance forms. This can lead to the creation of multiple outsourcing enclaves in a single client organisation. Further, the globalisation of IT services delivery means the vendor activities that contribute to these enclaves may be located in the most cost efficient places around the world. Some IT activities might be retained in-house when internal resources they use are assessed as more effective, alternatively some entire business processes may be moved to a vendor, building scale efficiency by aggregation of demand across client organisations.

As outsourcing practice has developed, so has its incorporation into the wider management systems of the client organisation. The next section will describe outsourcing from a perspective of structure and governance.

2.5.3 Structure and governance

Setting up the right structure and governance scheme for a long term IT outsourcing relationship establishes a process of control and contains the risks of opportunism on behalf of both the client and vendor (Williamson, 1985). As the relationship shifts from one of organisational hierarchy to one of client-vendor, the control mechanism shifts from one based on behaviour expectations to one based on contractually determined output (Masten, 1988). As discussed in the previous section, the output of IT outsourcing relationships is complex to specify, difficult to measure and may need to change over time. This means that a risk conscious client will need to make a correspondingly complex contract allowing the vendor's productivity to be accurately measured and rewarded (Poppo and Zenger, 2002). Expectations set by the control mechanisms of the previous vertically integrated organisation might persist among people who were transferred in the outsourcing process (Ho et al., 2003) leading to divergence of intended from actual behaviour, a situation that may call for quick management action. Understanding of how IT outsourcing relationships can be structured and governed has developed since the early 'total' outsourcing deals of the 1980s and 1990s. This section looks first at the structuring or configuration of outsourcing arrangements, it moves on to consider the different types of client and vendor relationship that can exist within these, finally it considers outsourcing governance and control.

Outsourcing configuration refers to the way the resources of the vendor and client are formally aligned with each other (Lacity and Hirschheim, 1995). This research described four categories of configuration: 'general outsourcing' introduces a vendor to take over all or part of the IT function, 'transitional outsourcing' adds an evolution to new technology, 'business process outsourcing' further adds part of the business function supported by the technology and 'business benefit contracting' moves towards a full profit based partnership. Each configuration changes the intimacy of the relationship between client and vendor as well as the risk each is prepared to accept.

An outsourcing configuration might need to change to reflect the client's changing operational context. Building ability to change into the initial contract is a potentially troublesome issue as problems of bounded rationality and incomplete contracting are encountered (Williamson, 1985). This need for flexibility to change outsourcing

contracts in response to necessary changes in configuration has been recognised (Lacity et al., 1995). This research highlighted the importance of avoiding standard procurement contracts and proposed instead making a detailed and comprehensive agreement between client and vendor. Organisations considering outsourcing were urged to build expert negotiating teams that could consider both IT and commercial factors in reaching an agreement. Clients were encouraged to 'try wherever possible to sign short term contracts' (p.92) which perversely seems to make building a large negotiating team harder to justify. The reasoning given for this was the rapidly changing price of IT services in the market at that time, a factor that, with the rise of offshore resources, has endured. Short term contracts do not however encourage the development of a relationship between client and vendor that might lead to innovation. Although now old, this research points to the complexity and size of outsourcing contracts and the detailed information sharing between client and vendor needed for their creation. It also indicates how IT outsourcing can have political and social dimensions concerning decision making in the wider client organisation.

One factor with political and social implications, as well as profound operational importance is the set of choices about the size and content of the client's retained IT team. The outsourcing configuration defines how knowledge holders from client and vendor will interact after outsourcing transition has taken place (Willcocks and Griffiths, 2010). These authors emphasised the importance of configuring knowledge holders in different roles that together provide a 'knowledge repository' in the vendor organisation. They also proposed that the client should retain a small 'high-performance team' (p.183) capable of providing a strong business orientation to the vendor's activities. Finding individuals that can both appreciate the detail of the client's operating context and have sufficient IT understanding to drive a potentially powerful and influential supplier is not easy in tight recruiting markets. Willcocks and Griffiths acknowledged this to be a 'major HR challenge' but did not consider the implications of a client's inability or unwillingness to rise to it.

Mitigation of this problem may be found in the way the nature of the high level relationship between client and vendor is defined. Relationship sophistication behind contractual agreements was recognised by Williamson (1985) who mentions 'relational contracting' saying that this 'develops for transactions of a recurring and non-standardized kind' (p.73). This definition would include IT outsourcing and

acknowledge the more socially oriented factors that might exist in the IT system. Literature shows how the structure and governance used in outsourcing relationships can evolve to include both the formality of contracts and social factors that cannot easily be described in a formal contract.

The high level relationship between client and vendor might, for example, be defined as a partnership. The qualities of partnerships in IT management were described by Henderson (1990) based on interviews with executives involved with these. This identified that successful partnerships offered mutual benefits, a common attitude of commitment and predisposition to working in partnership, a shared knowledge base with some mutual resources and a climate that allowed effective personal relationships to develop. The importance of a contract was also acknowledged but more as a method for thinking through the initial requirements of the partnership than as an enforcement tool to be used if things went wrong.

The use of combinations of governance structures and their effect on outsourcing's ability to support strategic innovation was empirically researched by Oshri et al. (2015). This empirical research essentially confirmed Henderson's findings that a high quality relationship between the client and vendor would positively affect the innovation outcomes from outsourcing. It also found that this result could be positively moderated by a mix of contractual forms, specifically a combination of joint-venture (gainsharing) with more traditional time and material or fixed price contracts. Oshri et al speculated that the client's learning from joint venture contracts could be used to improve results from the more traditional contract forms. Some limitations were acknowledged in this research: the survey method used did not allow the mechanisms of innovation to be examined in detail, neither could it check how outsourcing clients actually aligned their contractual governance choices to the specific goals of the individual outsourcing project.

When partnership or joint venture notions are applied to practical IT outsourcing agreements aspirational goals can clash with operational and contracting practicalities (Fitzgerald and Willcocks, 1994). Indeed, partnership may not be practical as an initial goal of a relationship but rather an outcome of a prolonged transaction history that leads to mutual understanding and trust (Gulati, 1995). Gulati conducted widespread research into interfirm alliances and noted that 'Firms appear to some degree to

substitute trust for contractual safeguards in their repeated alliances' (p.105). Trust emerges as an important factor over time but in the earlier stages of a client and vendor relationship, the contract is most important. As trust develops in a partnership relationship it affects partners' perceptions of risk and the type of control mechanisms they choose to use over each other (Das and Teng, 2001).

This changing mix of qualities that leads to partnership going beyond the governing contract reflects facets of the knowledge based theories of the firm (Grant, 1996). The role of social capital in creating trust and the need to share 'tacit' factors between client and vendor organisations is evident here. A problem highlighted by Henderson was the difficulty of isolating a transactional relationship from a partnership in this wider, social dimension. He points to problems that arise when one party believes itself to be in a partnership while the other is working (deliberately or otherwise) on a transactional basis. Shared understanding of not only the contractual governance but also the high level definitions of the relationship between client and vendor is therefore important.

Willcocks and Choi (1995) studied three large IT outsourcing contracts in detail to identify whether or not these merited description as 'strategic alliances' using Henderson's model as a starting point. They draw a distinction between 'contractual', 'trust' and 'hostage' models of co-operation between client and vendor. The 'trust' model best describes a partnership while in the 'hostage' model a non-contractual threat (like reputation risk) is used to enforce co-operation. This research observed that over time the power balance in the relationship shifts towards the vendor as the client progressively reduces retained resources for cost reduction. If the vendor thus becomes more dominant in the partnership over time, the theoretical benefits of knowledge based co-operation proposed by Henderson and the knowledge resource theorists become more challenging to realise. In this sense the goal of an client and vendor having an enduring, knowledge based 'partnership' is difficult to achieve.

Successful outsourcing relationships must therefore combine aspects of partnership with contractual governance. An exploratory framework for describing IT outsourcing in this way, was proposed by Willcocks and Kern (1998) and tested against a detailed case study. This divided outsourcing into two sets of relationships: contractual and co-operative. Social processes as well as contractual agreements existed within each, as

well as relationship links that ranged from formal to informal in nature. This framework identified the importance of cultural and social links between client and vendor, the authors writing, 'social adaptations will be initiated by both the client and vendor to smooth the outsourcing transition to a working relationship. Social adaptations are a vital process as they guarantee the integration of the formal contractual level with the informal cooperative factors' (p.31). In essence social processes serve to mould the 'hard' provisions of the contract to the 'soft' and changing context of the client. Willcocks and Kern acknowledge that it is realistic to expect conflict to arise in this type of relationship and that there will be expressions of power on both sides but do not examine in detail how social capital factors might affect these.

However the relationship between client and vendor is defined, a process for controlling its outputs and governing its working will be needed. Governance and control processes around IT outsourcing have received much attention in the outsourcing literature.

Given the complexity of IT and its management processes, managers must make a careful choice about the level of detail to write into outsourcing contracts. The link between the degree of uncertainty in the function to be outsourced and the structure of the governing contract was described by Fitzgerald and Willcocks (1994) in one of the earliest papers on IT outsourcing in the UK. They proposed that tightly defined contracts would constrain the vendor in situations with high uncertainty. to compensate, an incentive scheme in the contract should encourage the vendor to do what is best for the client by offering a share of any reward. This is similar to the 'business benefit contracting' configuration (Lacity and Hirschheim, 1995). Benefit sharing inevitably introduces risk for both parties and may be less acceptable today than in the 1990s. Today, large IT users in developed economies must almost always use outsourcing, even in complex situations; otherwise acquiring skilled human resources becomes too difficult or expensive. Such prevalence of outsourcing means that full benefit sharing, as opposed to payments for services actually received, is not a viable solution to complexity.

Indeed the problem caused by the seemingly conflicting aims of the governing contract with a need to manage uncertainty seems to remain unresolved. Aubert et al. (2015) described this as a 'paradox' writing, '(o)n the one hand, managers from the client firm

are pressured to ensure that the contract will be managed adequately and that the supplier will keep its promises. This requires monitoring, clear measures, low uncertainty, and control. On the other hand, these managers are told to offer flexibility, slack resources, and flexibility to their supplier to ensure innovation, which is a high uncertainty activity' (p.257). They concluded that good contract management practices in IT outsourcing could lead to an environment where innovation was difficult to achieve. Innovation requires a complexity and flexibility of internal and vendor processes that outsourcing aims to reduce. Four solutions were proposed: reviewing progress simultaneously from both contractual and innovation perspectives, adjusting the governance technique to the scale of innovation expected, employing a dual management approach that could involve reversing the roles of the contract with innovation managers and developing structural ambidexterity in the wider client organisation. While the logic of these recommendations is clear, the human and social implications of their implementation are not considered in this theoretical paper their investigation proposed as avenues of further research.

The challenge of this type of organisational complexity can be addressed more generally by building competences in the client organisation. Mayer and Salomon (2006) build on strategic management theory to propose that organisations with strong technological capabilities have more options both for insourcing and outsourcing. In the latter case they are able to translate these capabilities into effective governance capabilities for the market based supplier. Conversely, organisations with weak technological capabilities face the choice of either insourcing ineffectively (at least for a while) or being exposed especially to the 'hold-up' risks that emerge from specific assets being held in an outsourcing deal. This research has a single organisation focus but implies that a strong technological capability is a prerequisite for successful IT management whether on an in- or outsourced basis. The balance of innovating knowledge and relationship management skills between client and vendor was also addressed by Weeks and Feeny (2008). They proposed that innovation outcomes were driven by a combination of client, vendor and relationship enablers. The client needed to retain knowledge of technology, a factor that was disposed of in many early outsourcing deals, the vendor needed to bring process knowledge and have a deep understanding of the client's business based on experience with other outsourcing relationships in that sector. Relationship enablers included high levels of trust,

effective governance of innovation processes and an ability to monitor and measure levels of innovative activity. This research highlights how outsourcing management calls for knowledge and skills in orthogonal areas if innovative ability is to be protected. Alongside technical knowledge, market scanning, relationship management and governance skills must somehow be protected.

Outsourcing is unlikely therefore to offer a credible solution to weak internal competences, when the it is implemented in a context of any complexity. In absence of careful management, any benefit it offers will be offset by the cost of contractual hazards. This justifies observations of frequent IT outsourcing 'failure' to achieve planned cost savings that was reported by Lacity and Hirscheim (1993a), Earl (1996) and others.

A solution to the problem of managing uncertainty is the effective use of relational governance alongside contractual agreements. This allows the complex set of relationships that outsourcing creates to be assembled into a generally informal, behaviour based governance mechanism, one that operates outside the scope of contractual agreements (Leimeister and Krcmar, 2008). The ways that contractual and relational governance complement each other in complex client and vendor relationships was investigated by Poppo and Zenger (2002). They proposed that the two governance structures can exist in parallel; contracts handle predictable problems like the treatment of relationship specific assets while relational governance is used to deal with problems of uncertainty as might come from technological change. This analysis, grounded in empirical research, contrasts somewhat with the earlier views on governance and relationship developed more qualitatively (eg. Lacity and Hirschheim, 1993a, Henderson, 1990). Poppo and Zenger boldly propose as a 'fact' that 'Outsourcing vendors are not partners because the profit motive is not shared' (p.76), implying that any perceived effects of good relational governance are illusory. This controversy of the unshared profit motive raises a further question, can relational forms of governance survive if the going gets tough for the relationship?

In this situation, a psychological contract can guide the parties towards a solution, providing guidance that may be absent or vague in the formal agreements (Lioliou et al., 2014). The differences between the formal and psychological aspects of outsourcing contracts were examined by Koh et al (2004). They observed that

agreements made in the formal contract may be only partially reflected in the actions to provide and receive service that are taken by the staff of the client and vendor. Both organisations are made of people who make their own interpretations of the contract and build their own perceptions of the obligations they have. This article highlights how IT outsourcing relationships can be complicated by their combination of contractual, structural and human aspects, each being capable of making a positive or negative contribution to the effectiveness of the IT system. Miranda and Kavan (2005a) presented a structured conceptualisation of the same phenomenon. They distinguished the 'promissory' contract made at the outset of the relationship from the 'psychological' contract that emerged as the embedded and long term relationship between client and vendor progressed. Miranda and Kavan recognised social capital as 'the inter-organizational structures that emerge during [contract] execution' (p.156). They propose that this social capital leads to the subsequent mobilisation of inter organisational resources and thus creation of value in the outsourcing relationship.

This aspect of outsourcing behaviour was more recently examined in case study research by Lioliou et al (2014). They looked at how psychological contracts can mediate between contractual and relational governance. They proposed that although each type of governance is equally significant, managers may favour one over the other at different times in the development of the outsourcing venture.

The importance of social and relational capabilities in effective governance of outsourcing has also been identified. Holcomb and Hitt (2007) for example, looked at outsourcing from the perspective of the resource based view of strategy. They proposed that organisations with strong relational capability-building mechanisms giving ability to leverage the complementary resources of others within their own value chains, are likely to use outsourcing effectively. They comment that 'Strategic outsourcing relationships are formed within a social context that influences selection decisions and the pattern of interfirm linkages that emerge' (p.476). These linkages allow 'repeated ties' between client and vendor, a pattern of ongoing relationships that allows trust to build between parties and encourages collaboration (Holcomb and Hitt, 2007). This proposal emphasises both the socially based co-operation seen in the IS-social capital literature (eg.Riemer and Klein, 2008, Schlosser et al., 2015) and the possibility that boundaries may be complex; more than two organisations might be

involved. This theoretical paper does not however examine the specific attributes of real outsourcing deals.

Governance processes include mechanisms of control. As discussed above, outsourcing is a form of alliance between organisations but no equity sharing is generally involved. Initially, when performance and results are important, output based control of vendor and client would be appropriate (Das and Teng, 2001). Later, as trust grows and risks of poor performance are perceived to fall a shift towards a social control model seen within a vertically integrated organisation could encourage innovation.   Complexity and trust are also factors in control; the level of control imposed by the client increases as task complexity grows but falls if the client has more technical knowledge, experience in relationship management and trust in the partner (Rustagi et al., 2008). Their empirical study demonstrated that the trust level between vendor and client was a factor that most significantly affected the levels of control imposed by the client on the vendor's activity. High levels of trust predicted lower levels of control and vice versa. A total outsourcing approach is more likely therefore to exhibit high levels of control, especially if the client is inexperienced, as in the case of a new relationship. The type of control used in IT outsourcing relationships was also investigated by Ho *et al* (2003) who found that hierarchical modes of control may be inherited from the past when client managers found it difficult to adjust their cognitive schemata to a new way of working.

A more adaptive approach to the management of the client and vendor relationship along with an exploration of control types was proposed by Roy and Sivakumar (2012). This was also specifically directed at the management of innovation outputs from the relationship. Acknowledging both the importance of tacit knowledge management and the significant increase in globalisation within outsourcing, they proposed that different control approaches are needed to secure radical as opposed to incremental innovations. Radical innovations will be encouraged by 'soft, normative' controls. Here globalisation is a benefit as it conveys a degree of independence to the vendor that is likely to increase its capacity for radical innovation. Conversely, incremental innovations require a tighter set of 'rigid, explicit' controls. These are impeded by globalisation which makes close co-operation between the client and vendor more practically difficult (Roy and Sivakumar, 2012). This framework brings together a number of factors that have emerged as important in outsourcing since the

1990s but its use implies that a client looking for innovation ideally requires a set of vendor relationships in different locations and under different governance models if it is to be fully successful. The frictional costs of maintaining this in a world where technology, customer needs and the location of cost efficient resources rapidly changes are not considered.

Configuration, governance and control of IT outsourcing emerges from the literature surveyed here as a set of issues with both normative and social aspects. Social capital and knowledge, seen already as facets of the overall IT system of the organisation, are directly affected by choices made here.

2.5.4 Summary

Strategic management literature suggests that a rational management choice to outsource IT would aim to secure one or more of three main benefits to the organisation: reduced transaction and operational costs (Coase, 1937, Williamson, 1985, Kroes and Ghosh, 2010), access to the IT competences needed to sustain competitive advantage from current operations (Barney, 1991, Levina and Ross, 2003) and knowledge resources that can promote innovation and change (Kogut and Zander, 1992, Contractor et al., 2010). This was supported by early empirical research into the IT outsourcing phenomenon; a view that IT is costly, inefficient or of poor quality, actual and perceived problems with IT competence, and shortage of skilled resources led many organisations to adopt an outsourcing strategy (Lacity and Hirschheim, 1993a). The continuing popularity of IT outsourcing is evident from the steady growth of the vendor industry that supports it (Gartner, 2013).

Understanding of the risks and benefits of IT outsourcing has developed significantly over these decades, leading to a body of detailed guidance to practitioners on its planning and implementation (eg. Willcocks et al., 2011). However, the longer term effects of IT outsourcing on client organisations' abilities to innovate and change have received less academic attention (Lacity et al., 2010) although the focus on these has recently increased (Lacity et al., 2016). Also, the paradox posed to management of securing innovation and change alongside the other benefits of IT outsourcing has been recognised (Aubert et al., 2015).

The complex relationship between adoption of an IT outsourcing strategy and the need to innovate may stem from outsourcing's impact on the softer more social facets of knowledge processes in the organisation, especially those that are less amenable to direct management action (eg.Koh et al., 2004, Ghosh and Scott, 2009). For example, outsourcing leads to changes in structure that might directly affect hitherto stable facets of social capital and knowledge that were supporting innovation in the 'before' situation (Weeks and Feeny, 2008). Further, while a benefit of outsourcing is its positive effects on cost and IT competence (Levina and Ross, 2003) it may call on the client to develop new management competences if these effects are to be maintained over the longer term (Holcomb and Hitt, 2007, Mayer and Salomon, 2006).

When managers set goals for outsourcing enclaves, cost and competence problems evident at the time the outsourcing decision is made are likely to be prominent. Also the transition to outsourcing forces a focus on technological and structural objectives around which decisions must be made to allow the outsourcing enclave to be designed (Willcocks et al., 2011). Relating this to the adapted Leavitt's diamond of figure 2.5, it is therefore proposed that attention focusses on the three elements of technology, structure and IT competence as shown in figure 2.8.
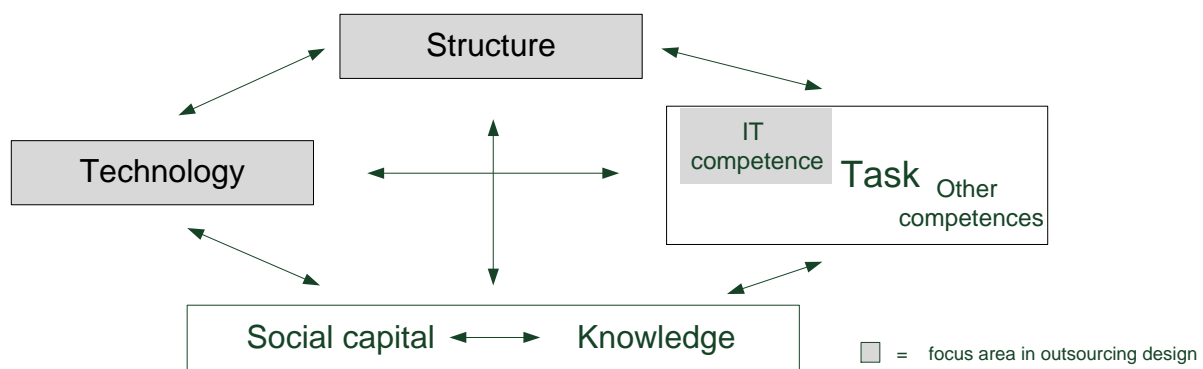
Figure 2.8: Proposed focus areas in design of outsourcing enclaves

The effect of the outsourcing strategy on innovation competence, thus implicitly on social capital and knowledge management (proposition 2) is harder to analyse and plan and thus may receive less attention. Hence it is proposed that:

> Proposition 3. *In transition to outsourcing, the deliberate creation of social capital within enclaves is overlooked in favour of securing short term technological or structural objectives.*

The contractual governance inherent to outsourcing may further interfere with the development of softer innovation related competences. Outsourcing requires a contract to be agreed between client and vendor for the services to be provided over the agreed period (eg. Lacity et al., 1995). This defines the scope of IT activities that will be moved into the outsourcing enclave. The client and vendor must provide

between them the competences needed to manage these activities using technology and structures that can be tailored to the extant context and any developments in this that are foreseen when the contract is agreed (Lacity et al., 1995). The contract and the governance system derived from it, define what each party will provide. It might also define the routines whereby such contributions and the subsequent collaboration between client and vendor will be managed (Poppo and Zenger, 2002). It is likely also to define targets for cost, service quality and possibly targets for innovation outputs (Willcocks et al., 2011).

The presence of the contract means that an IT function that includes outsourcing will differ in important respects to one managed solely in the hierarchy of an organisation. A benefit of outsourcing is that the contracts it requires are legally enforceable; they therefore create a governance of operations that is not generally possible to achieve in the single legal entity of a vertically integrated organisation (Masten, 1988). However changes in the operation may call for further negotiation between vendor and client. This is a contrast to an integrated organisation where change can, in principle, be achieved by management direction alone (Conner and Prahalad, 1996). In this way, outsourcing may introduce multiple management and control structures (Roy and Sivakumar, 2012); an integrated organisation, while potentially complex and political, will probably have a single governing structure. The people working within these structures can also be influenced in formal and psychological ways by their employers' differences in culture and motivation methods as well as by their understanding of the contract that has been agreed (Koh et al., 2004). The formal contract means that outsourcing will also be explicitly limited in time, with a possibility for termination if the relationship is unsatisfactory (Masten, 1988). The agreed term is followed by a moment of renegotiation where change can be prompted. In contrast, a vertically integrated organisation is both temporary and eternal, subject to the whim of its owners and managers.

In this way, as illustrated in figure 2.6, the creation of an outsourcing enclave takes a selected scope of IT activity out of the vertically structured client organisation and exposes this to contractually driven forces, set up in the wider relationship between client and vendor (Henderson, 1990, Willcocks and Choi, 1995). As described earlier, interactions in the outsourcing enclave so created may need to be complex, especially where knowledge is distributed and social and tacit factors must play a role in new

knowledge creation and innovation (Tsoukas, 1996). These interactions are hard to codify (Willcocks et al., 2011), meaning that the contract will be incomplete (Williamson, 1985). This, and limitations in the understanding of the contract by those responsible for its implementation (Koh et al., 2004) result in less complex activities than are actually needed to complete the required IT task. These constraints that contractual mechanisms within outsourcing can place on the functioning of the outsourcing enclave lead to this fourth proposition:

Proposition 4. *The contractual governance applied to IT outsourcing enclaves forces a simplification and codification of IT activities that can limit social capital formation and hence innovation competence.*

The simplification and codification that happens in IT outsourcing contracts will inevitably act on the more tangible aspects of the IT system: its technology artefacts, its structures and the competences needed. The less tangible aspects, social capital and knowledge, are harder to capture in contractual agreements but, as proposed earlier may play a significant role in the effectiveness of the outsourcing enclaves these agreements govern.

Propositions 2,3 and 4 allow the simplified framework of figure 2.7 to be developed further. The outsourcing enclave, defined by IT scope and vendor selection (P2) is now seen to be constrained by the objectives that are set (P3) and the way contractual governance is applied (P4). These each act on its ability to build the social capital needed to support knowledge creation and thus innovation in the set of IT competences it actually delivers. This conceptual framework, which now addresses all three research questions of this thesis is shown in figure 2.9:
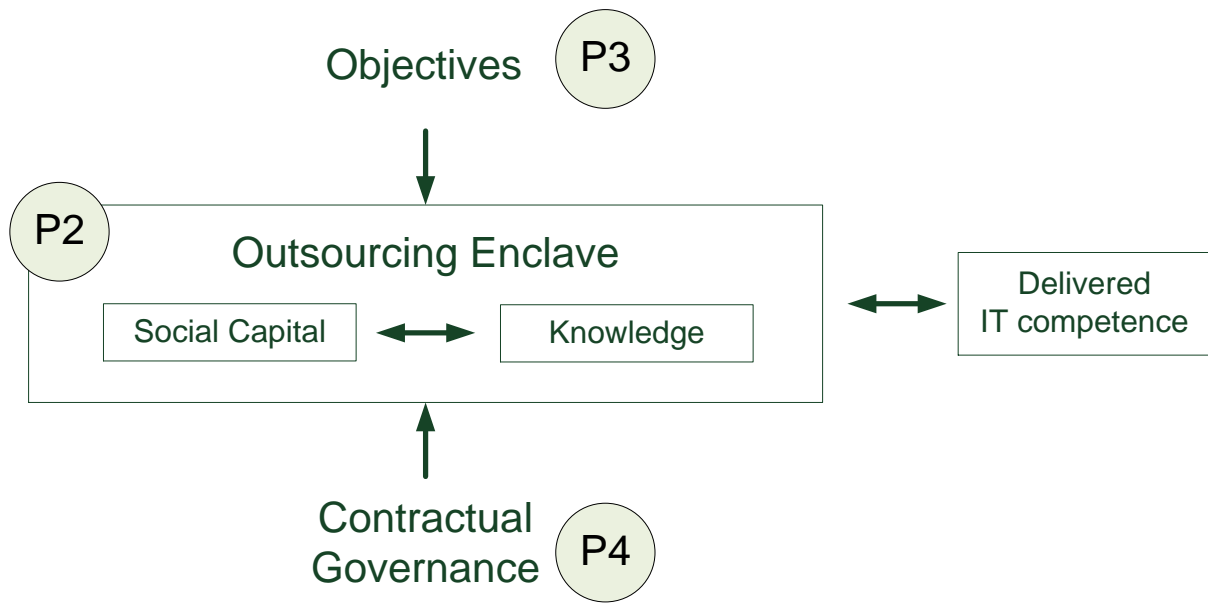
Figure 2.9: Conceptual framework, showing propositions 2,3,4

2.6 Conclusion

In the sections above, the IS literature has been used to show how IT has come to represent a major factor in an organisation's ability to innovate and change. IT has developed into more than merely a technological entity. In use, it represents an entwinement of technology with organising structure and a set of human factors. These human factors include tacit knowledge and the social capital in the networks that link together the community of people working with IT. This leads to the first proposition of this thesis:

> Proposition 1: *To create effective IT competences, management must combine technology and structure with contextual knowledge and social capital on an organisation-wide basis.*

This was summarised using the 'diamond' model derived by Leavitt (1965/2010) which illustrated the interplay between task, structure, technology and people.

To relate this model to the theme of the thesis, the notion of the 'outsourcing enclave' as a specific structure that brings outsourcing into an organisation was introduced. Literature concerning organising structure, social capital and knowledge was then reviewed in this context. This led to the second proposition of this thesis:

> Proposition 2. *IT outsourcing creates unique structural enclaves in which social capital can allow the knowledge resources of the client and vendor to be combined to enhance innovation competence.*

Leavitt's 'diamond' model was then developed into one where 'IT competence' was isolated from the other factors. This competence is proposed as a new component of task completion and innovation that was not strongly relevant in Leavitt's day. The specific nature of IT outsourcing affects variables within it, this allowed simplification of the revised 'diamond' model into an initial conceptual framework.

A review of literature relating to IT outsourcing led to two further propositions. These concern the ways in which an organisation's transition towards a structure including outsourcing enclaves might influence the social capital within these and thus their effectiveness. These two propositions are:

Proposition 3. *In transition to outsourcing, the deliberate creation of social capital within enclaves is overlooked in favour of securing short term technological or structural objectives.*

Proposition 4. *The contractual governance applied to IT outsourcing enclaves forces a simplification and codification that can limit social capital formation and hence innovation competence.*

The final conceptual framework derived from this literature review applied these constraints to the initial framework. This now theorises factors that apply to an organisation's use of IT outsourcing to deliver the innovation competence referred to in proposition 1. It shows how literature suggests that propositions 2,3 and 4 might be seen in real IT outsourcing enclaves. This is shown below in figure 2.10.
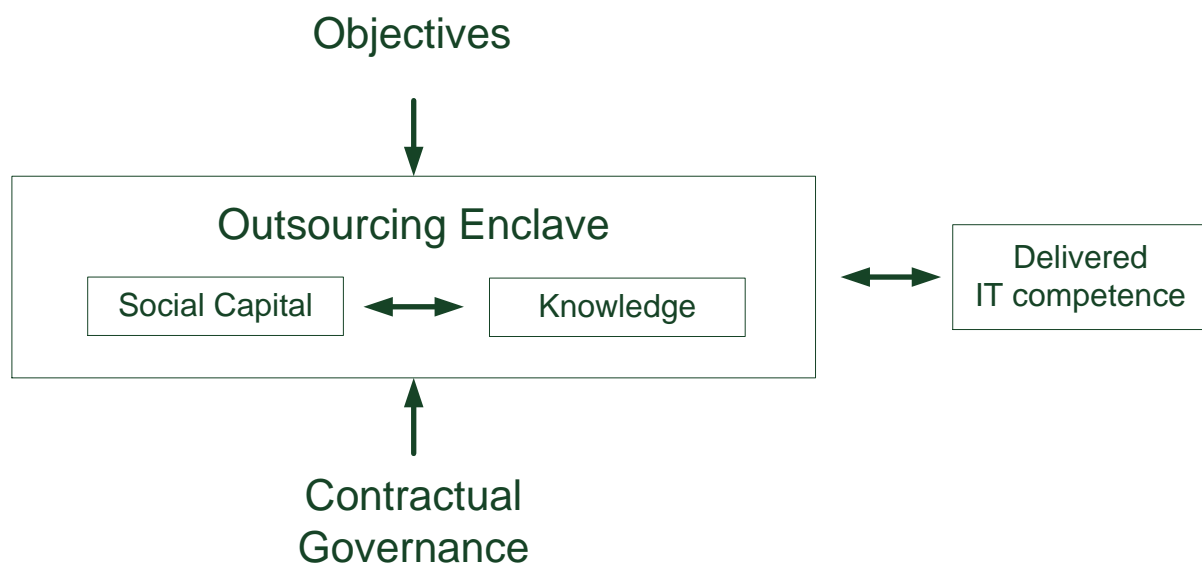
Figure 2.10: Conceptual framework

The next chapter will describe the methodology used to explore these propositions and the conceptual framework in two case studies of the use of large scale IT outsourcing.

This chapter closes with summary tables of the literature that has been reviewed.

2.7 Literature summary

The following tables summarise the key papers that are reviewed in this chapter. They show the main contribution of the paper to this review, the methodological approach used in the paper and its relevance to the four propositions derived here.

For convenience of the reader, the tables are presented in line with the individual sections of this review. In each table, the papers are shown in chronological order, allowing some sequence of development of ideas to be seen. Some references used in the sections have been omitted, where these provide general support for a statement but are not examined in detail.

These tables are not a substitute for the full reference list which will be found at the end of the thesis document. This contains comprehensive bibliographical details for all sources used.

2.7.1 IT and Innovation Literature Summary

Author(s)	Year	Key themes	Methodology	Relevant to:			
				Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Olson, M.H. & Chervany, N.L.	1980	Structure of IT resources and relationship of this to the firm using them	Survey			x	
Foster, L.W. & Flynn, D.M.	1984	Effective use of a firm's innovative resources.	Case study (qual)	x	x	x	
Child, J.	1987	Enabler of collaboration across a network of firms. Reduction of demand risk.	Theoretical		x	x	
Johnston, H.R. & Vitale, M.A.	1988	Competitive benefits from control over inter-organisational systems. Emergence of the information	Theoretical			x	
Zuboff, S.	1988	How IT generates information that changes the structure of work.	Multiple case study		x	x	x
Rossetti, D.K. & DeZoort, F.A.	1989	Relationship of the organisation to IT. Need to adapt the organisation to the IT system.	Theoretical			x	x
Huber, G.P.	1990	Theory of how improved data access and IT enabled changes to organisation improve decision making	Theoretical	x	x	x	
Boynton, A.C. & Victor, B.	1991	IT enabled process flexibility. Creation of 'dynamic stability'.	Theoretical	x			x
Clemons, E.K. & Row M.C.	1991	IT as a complement to other strategic resources in creation of competitive advantage, link to the RBV.	Theoretical	x			
Karimi, J. & Konsynski, R.	1991	Challenge of global IT implementation. Relationship of systems to organisational form. Need for standards.	Theoretical			x	x
Lind, M.R. & Zmud, R.W.	1991	Relationship between mutual user/provider understanding and innovativeness	Case study (quant)		x		
Peng S. Chan;Dorothy Heide	1992	Relationship between IT deployment, competitive advantage and organisation	Theoretical				
Swanson, E.B.	1994	Description of the 'IT System'	Theoretical				x
Gatian, A.W., Brown, R.M. & Hicks Jr, J.O.	1995	Relationship between organisational climate and success of IT deployments	Survey			x	
Orlikowski, W.J.	1996	Recursiveness of IT / organisational relationship	Case study (qual)	x		x	
Swanson, E.B. & Ramiller, N.C.	1997	Organising visions as a pathway for innovation adoption	Theoretical		x	x	x

Continues overleaf

Author(s)	Year	Key themes	Methodology	Relevant to:			
				Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Dewett, T.T.D. & Jones, G.G.R.J.	2001	Efficiency of information use can promote effective innovation and competitive advantage	Literature survey	x		x	
Duhan, S., Levy, M. & Powell, P.	2001	IT as a strategic resource in smaller firms	Case study (qual)	x			
Fichman, R.G.	2001	Capabilities emerge from the aggregation of IT innovation projects - not from individual projects.	Survey	x			
Lyytinen, K. & Rose, G.M.	2003	Disruptive IT innovation	Theoretical	x			
Ramiller, N.C. & Swanson, E.B.	2003	Organising visions as a pathway for innovation adoption	Survey		x	x	x
Sambamurthy, V., Bharadwaj, A. & Grover, V.	2003	IT capabilities create 'digital options' for the firm which can be the basis of innovation	Theoretical	x	x		
Sethi, R., Pant, S. & Sethi, A.	2003	Success factors in IT implementation	Multi-case study			x	x
Swanson, E.B. & Ramiller, N.C.	2004	Concepts of 'mindful' and 'mindless' IT innovation	Theoretical	x			
Peppard, J. & Ward, J.	2005	Need for dynamic capabilities to adapt an idealised vision of IT to the reality of the firm's situation	Multi-case study			x	x
Hatzakis, T.;Lycett, M.;Macredie, R.D.;Martin, V.A.	2005	Social capital effects in IT/business alignment changes	Survey	x	x		
Kankanhalli, A.;Tan, B.C.Y.;Wei, K.	2005	Relational social capital as a motivator of knowledge sharing behaviour	Survey		x		
Miranda S.M.; Kavan, C.B.	2005	Relationship of promissory and psychological contracts. Emergence of social capital in the latter allows release of inter-organisational capability	Theoretical	x		x	x
Adamides, E.D. & Karacapilidis, N.	2006	Using collaboration systems to address the social and dispersed nature of the knowledge that supports innovation	Theoretical		x		
Fairbank, J., Labianca, G., Steensma, H. & Metters, R.	2006	Testing IT enablement of information in the context of information theory	Survey			x	
Huysman, M.; Wulf, V.	2006	Alignment of alternative frameworks for analysing social capital	Theoretical		x		
Marwaha, S. & Willmott, P.	2006	Adaptation of governance approach for routine versus strategic IT applications	Theoretical	x			x
Rivard, S., Raymond, L. & Verreault, D.	2006	IT's role in business strategy - relationship to RBV and market oriented strategy frameworks	Survey	x			
Swink, M.	2006	IT enabled collaboration across value chains	Theoretical		x	x	

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Author(s)	Year	Key themes	Methodology	Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
					Relevant to:		
Aral, S. & Weill, P.	2007	Relative effectiveness of different categories of IT investment	Survey	x			
Peppard, J.	2007	Social capital enables integration of technical with business knowledge allowing IT value releasing competecies to be developed	Theoretical	x	x		x
Zammuto, R.F., Griffith, T.L., Majchrzak, A., Dougherty, D.J. & Faraj, S.	2007	Innovation 'affordances' created by IT	Theoretical	x		x	
Rottman, W.J.R.	2008	Detailed case study. Uses social capital dimensions to analyse successful knowledge transfer practices to	Case study		x	x	x
Riemer, K.R.;Klein, S.K.	2008	Need for effective social capital as an enabler of innovation tasks in virtual organisations	Multi-case study	x	x		
Robert Jr., L.P.; Dennis, A.R.;Ahuja, M.K.	2008	Shows how social capital dimensions influence knowledge integration using an experimental approach	Experiment		x		
Ghosh, B.;Scott, J.	2009	Practical guidance on building social capital in offshore outsourcing. Not diagnostic.	Multi-case study	x	x	x	x
Bunduchi, R. & Smart, A.U.	2010	Costs of IT innovation are usually over simplified and thus poorly understood	Literature survey	x			
Carlo, J.L., Lyytinen, K. & Rose, G.M.	2011	Disruptive IT innovation	Survey	x			
Van den Hooff, B.; De Winter, M.	2011	Relationship between structural, cognitive and relational factors in social capital	Case study		x		
Hsu, M-H; Chang, C-M	2014	Examination of the antecedents of uncertainty that restricts knowledge sharing	Survey		x		
Zimmermann, A. ;Ravishankar, M.N.	2014	Qualitative evaluation of social capital, efficacy and outcome expectations as determinants of offshore knowledge transfer	Case study	x	x	x	
Fernández-Mesa, A.;Ferreras-Méndez, J. L.;Alegre, J.;Chiva, R.	2014	Identifies that IT investments and skills must be supported by competence in learning if they are to lead to successful innovation.	Survey	x	x		
Karanja, E.;Bhatt, G. D.	2014	Shows a significant link between IT investment and innovations - expressed as patents. Source data is dated 1991-1996.	Data analysis	x			

| Author(s) | Year | Key themes | Methodology | Relevant to: | | | |
				Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Marion, T. J.;Barczak, G.;Hultink, E. J.	2014	Social media and networking (as externally delivered services) do not replace the collaboration affordances of internally managed IT tools.	Survey	x			
Ainin, S.;Mohd Salleh, N.;Bahri, S.;Mohd Faziharudean, T.	2015	Innovation capability has an inverse relationship to customer value created - contrary results to other studies.	Survey	x			
Anaya, L.;Dulaimi, M.;Abdallah, S.	2015	Case studies of IT innovation supporting the IT value literature. Little original thinking.	Multi-case study	x			
Cui, T.;Ye, H.;Teo, H.;Li, J.	2015	Considers the role of IT in open innovation networks. Structural model is proposed based on empirical research in China.	Survey	x	x		
Lioliou, E.; Zimmermann, A.	2015	Social capital reduces uncertainty in IT outsourcing relationships and thereby mitigates the risk of opportunism	Multi-case study		x		x
Lyytinen, K.;Yoo, Y.;Boland Jr, R.J.	2015	Digital enablement of networks allows different innovation forms to be adopted. Notion of 'knowledge density' in innovation.	Theoretical	x			
Roberts, N.;Campbell, D.E.; Vijayasarathy, L.R.	2015	Demostrates a link between innovative IT use (DSS) and a manager's ability to form rich and diverse idea sets that can represent knowledge creation.	Survey	x			
Schlosser, F.;Beimborn, D.;Weitzel, T.;Wagner, H-T.	2015	Social capital is critical to knowledge transfer but some KT methods are not consistently practiced	Survey	x	x		

2.7.2 Social Capital and Knowledge Literature Summary

Author(s)	Year	Key themes	Methodology	Relevant to:			
				Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Leavitt, H.J.	1965	Relationship between structural, technological and human factors in delivering tasks	Theoretical	×	×		
Granovetter, M.S.	1973	Network structure and the role of weak ties	Theoretical		×	×	
Granovetter, M.S.	1985	The properties of social ties within a network	Theoretical			×	
Coleman, J.S.	1988	Introduction of the concept of social capital	Theoretical		×	×	
Cohen, W.M. & Levinthal, D.A.	1990	Describes 'absorptive capacity', how information and knowledge relates to innovation competence.	Survey	×	×		
Brown, J.S.;Duguid, P.	1991	Difference between canonical and real work practice and its influence over innovation.	Theoretical		×		
Nonaka, I.	1994	Decribes the organisational learning cycle and the necessary conditions for this to function.	Theoretical				
Gulati, R.	1995	Emergence of trust from repeated ties between organisations.	Survey				×
Conner, K.R. & Prahalad, C.K.	1996	Discusses the relationship of individuals to organisations and compares hiring with contracting.	Theoretical		×	×	
Spender, J.-C. & Baumard, P.	1995	Describes the cycle whereby collective knowledge processes react to shocks.	Multiple case study	×	×	×	
Spender, J.-C.	1996	Describes the relationship between types of knowledge, learning and organisational memory.	Theoretical		×		
Tsoukas, H.	1996	Describes the collective mind of the organisation.	Theoretical		×		
Nahapiet, J. & Ghoshal, S.	1998	Definition of the structural, relational and cognitive dimensions of social capital and their role in innovation.	Theoretical	×	×	×	

Continues overleaf

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Continues from previous table

Author(s)	Year	Key themes	Methodology	Relevant to:			
				Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Das, T.K. & Teng, B.	2001	Relationship between trust, perceptions of risk and percieved needs for control in organisational relations.	Theoretical				x
Zahra, S.A. & George G.	2002	Sets out the components of potential and realised absorptive capacity and their relationship to other competencies.	Theoretical	x	x		
Kogut, B. & Zander, U.	2003	Knowledge creation and management is an important reason for the existence of the firm	Theoretical		x		
Smedlund, A.	2008	Framework that aligns knowledge types with the structural social capital that optimised their effects	Theoretical		x		
Weigelt, C.	2009	Effect of outsourcing on knowledge creation, focussed on the implications of new IT technology adoption.	Survey				
Alguezaui, S.,;Filieri, R.	2010	Contrasts the benefits and risks of sparse and cohesive social capital networks for innovation.	Theoretical		x		
Delgado-Verde M.;Navas-López, J.E.;Cruz-González, J.;Amores-Salvadó, J.	2011	Combination of relational and social capital supports absoptive capacity for external knowledge and innovation through its combination with internal knowledge.	Survey		x		
Di Vincenzo, F.;Hemphälä, J.;Magnusson, M.;Mascia, D.	2012	Identifies an optimal level of network redundancy/structural holes for the maximisation of learning.	Survey		x		
Kang, M.;Kim, B.	2013	Demonstrates a connection between the value of the asset held in the social network and the effectiveness of the network in transferring it.	Survey		x		
George, B., Hirschheim, R. & von Stetten, A.	2014	Using social capital theory as a lens for studying outsourcing relationships.	Theoretical		x		x
Jiménez-Jiménez, D.;Martínez-Costa, M.;Sanz-Valle, R.	2014	Similar to Delgado-Verde et al. Social capital supports knowledge transfer in divisions of MNCs.	Survey		x		
Kang, M.;Hau, Y. S.	2014	Similar to Kang and Kim (2013) but focusses more on factors within the network of ties.	Survey		x		
Zardini, A.;Ricciardi, F.;Rossignoli, C.	2015	Identifies dimensions of relational capital that are relevant to effective IT management.	Survey		x		
Aribi, A.;Dupouët, O.	2015	Social capital tends to support rapid, small innovation while organisational capital (codified, explicit knowledge) supports more radical or complex innovation.	Multiple case study		x		

2.7.3 Outsourcing Literature Summary

Author(s)	Year	Key themes	Methodology	Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
						Relevant to:	
Coase, R.H.	1937	Transaction cost theory	Theoretical	×		×	×
Williamson, O.E.	1985	Contractual governance, management of opportunism, asset specificity.	Theoretical			×	×
Dierickx, I. & Cool, K.	1989	A combination of organisation specific and generic assets is needed for sustained competitive advantage.	Theoretical		×		
Henderson, J.C.	1990	Properties and qualities of partnerships in IT management.	Multiple case study		×		×
Quinn, J.B., Doorley, T.L. & Paquette, P.C.	1990	Strategic basis for the outsourcing of services.	Case studies	×	×	×	
Blaxill, M.F. & Hout, T.M.	1991	The imperfect link between outsourcing and overhead cost reduction.	Theoretical				×
Loh, L & Venkatraman, N.	1992	Exploration of factors that influence the use of IT outsourcing.	Survey	×			×
Lacity, M.C. & Hirschheim, R.	1993	The bandwagon effect in IT outsourcing	Survey	×			×
Lamming, R.	1993	Development of sourcing parterships in the auto industry	Multiple case study		×	×	×
Fitzgerald, G. & Willcocks, L.P.	1994	Relationship between uncertainty and contractual form in IT outsourcing.	Survey				×
Quinn J.B. & Hilmer, F.G.	1994	Strategic basis for outsourcing	Case studies	×	×	×	
Lacity, M.C. & Hirschheim, R.	1995	The bandwagon effect in IT outsourcing	Survey	×			×
Lacity, M.C., Willcocks, L.P. & Feeny, D.	1995	Securing flexibility in outsourcing governance,	Multiple case study		×		×

Continues overleaf

Continues from previous table

Author(s)	Year	Key themes	Methodology	Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Willcocks, L.P. & Choi, C.J.	1995	Identified different models of co-operation between client and vendor in IT outsourcing.	Multiple case study			x	x
Lei, D. & Hitt, M.A.	1995	Effects of outsourcing on knowledge and learning	Theoretical	x	x		
Willcocks, L.P. & Currie, W.L.	1997	Discussion of 'Total' outsourcing projects	Case studies			x	
Earl, M.	1996	Identifies risks in outsourcing and reasons why IT services should be retained in organisations	Survey				x
Willcocks, L.P. & Kern, T.	1998	Co-existence of contractual with co-operative client and vendor relationships in IT outsourcing.	Case study		x	x	x
Insinga, R.C. & Werle, M.J.	2000	Framework to relate sourcing decisions to firm skill in and strategic importance of function	Theoretical			x	x
Barthelemey, J.	2001	Identification of new areas of cost that arise when using IT outsourcing.	Survey				x
Poppo, L. & Zenger, T.	2002	Feasibility of co-existence of contractual and relational governance systems for IT outsourcing	Survey				x
Levina, N. & Ross, J.W.	2003	Development of vendor competence in application management outsourcing	Case study	x			x
Ho, V., Soon, A. & Straub, D.	2003	Persistence of hierarchical modes of supervision after outsourcing has happened	Case study / Survey			x	x
Koh, C., Soon, A. & Straub, D.	2004	The difference between legal and psychological contracts in IT outsourcing	Survey				x
Willcocks, L.P., Hindle, J., Feeny, D. & Lacity M.C.	2004	Effects of business process outsourcing on the management of knowledge	Theoretical	x	x		

Continues overleaf

Author(s)	Year	Key themes	Methodology	Relevant to: Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Mayer, K.J. & Salomon, R.M.	2006	Relationship between client's technology competence and choice of governance method	Survey	x			x
Holcomb, T. & Hitt, M.	2007	A model of strategic outsourcing	Theoretical			x	x
Leimeister, S. & Krcmar, H.	2008	Identification of a typology of relationships that exist within IT outsourcing.	Multiple case study		x	x	x
Sharon Novak;Scott Stern	2008	Relevance of outsourcing innovation across a product lifecyle - auto industry context	Survey				
Rustagi, S., King, W.R. & Kirsch, L.J.	2008	Factors that influence the level and types of control used in IT outsourcing relationships	Survey	x	x		x
Weeks, M.R. & Feeny, D.	2008	Link between innovation outcomes and relationship enablers when IT outsourcing is used.	Multiple case study			x	x
Contractor, F.J., Kumar, V., Kundu, S.K. & Pedersen, T.	2010	Globalisation and its effect on choices for sourcing core as opposed to essential capabilities.	Theoretical			x	
Kroes, J.R. & Ghosh, S.	2010	Congruence of strategic and outsourcing drivers leads to most effective performance outcomes.	Survey	x			
Susarla, A., Subramanyam, R. & Karhade, P.	2010	Benefits of complementary competence development to the outsourcing vendor.	Survey	x	x		x
Willcocks, L.P. & Griffiths C.	2010	Retention of knowledge resources in the client organisation. Identification of relevant roles.	Multiple case study		x	x	
Willcocks, L.P.	2011	Development of IT outsourcing as a strategic partnership between client and vendor.	Theoretical			x	x
Willcocks, L.P., Cullen, S. & Craig, A.	2011	Practitioner guidance on IT outsourcing.	Multiple case study	x	x	x	x
Roy, S. & Sivakumar, K.	2012	Adapting control relationship with outsourcing vendor to encourage innovation output.	Theoretical		x		x
Handley, S. & Benton, W.C	2012	Investigation of factors driving vendor opportunism in outsourcing.	Survey		x	x	x
Lacity, M.C. & Willcocks, L.P.	2013	Role of vendor and client in driving business process innovation within outsourcing.	Survey	x	x		
Oshri, I.;Kotlarsky, J.;Gerbasi, A.	2015	Finds that relationship quality moderated by choices around contract type predict strategic innovation outcomes from IT outsourcing.	Survey		x		x
Lioliou, E., Zimmermann, A., Willcocks, L.P. & Gao, L.	2014	Mediation of psychological contracting between formal and relational governance types	Case study				x
Aubert, B.A.;Kishore, R.;Iriyama, A.	2015	Sets up the 'paradox' between contractual and innovation based approaches to managing IT outsourcing. Proposes four theoretical techniques for mitigating this.	Theoretical		x	x	x
Lacity, M.C.;Khan, S.A.;Yan, A.	2016	Detailed review of IT outsourcing literature 2010-2014. Identifies increased attention to social capital in literature of this period relative to 1992-2010.	Literature review	x	x		

Chapter 3 Methodology and Research Method

3.1 Introduction

This research project aims to explore the effects that IT outsourcing decisions have on the effectiveness of an organisation. It aims to interpret, from conversations with those involved, how these outsourcing decisions have influenced the performance of that organisation's IT system over the medium to long term and the implications this has had for the innovative abilities of the wider organisation. It will then compare this with existing literature on the development of IT, on outsourcing and on the intangible factors surrounding social capital and knowledge. The purpose of this chapter is to explain the methodology and research methods that have been used to guide and structure this research.

To achieve this, the chapter will discuss the overall nature of enquiry adopted in this thesis and the nature of the research question that has been proposed. It will then examine the nature of the phenomena to be researched, building on the theoretical propositions that were derived in the literature review of chapter 2. This will lead to a justification for using a qualitative research technique, for basing the findings of the research around specific case studies and for adopting an interpretive methodology in building and analysing these. This methodological approach will lead to a rich and detailed understanding of how outsourcing has been implemented in specific situations against which the initial propositions can be evaluated and refined.

An examination of relevant theories identified in the literature review led initially to a definition of the apparently relevant objects, mechanisms and theoretical propositions that were considered likely to be encountered and of a framework linking these. This set of definitions will be discussed. Based on this, the way that the initial research question was broken down into specific areas for exploration within case study organisations will be described.

The chapter moves on to describe and justify the research method that was used for collecting and building case data and the various field protocols that were developed for this. Following this there is a section that reflects on the implementation of the

research method, what happened when this was developed in the field and consequent implications for the knowledge claims that this thesis will ultimately make.

3.2 Nature of enquiry in this thesis

3.2.1 The object of enquiry

The object that I will study in this research project is the IT system of the firm or organisation. To be relevant to this study, that IT system must have been affected by IT outsourcing, a process that changes the organising structures, social capital and knowledge relationships within it. A methodology for enquiry needed to be selected that would allow for the nature of this object and produce data from which theory could potentially be created.

Sayer (1992) discussed how systems may be defined as 'closed' or 'open' depending on the nature of the objects and mechanisms that operate within them. Two conditions define a closed system: intrinsically, objects within the system must exhibit 'no change or qualitative variation' (p.122) in their nature and thus causal powers, extrinsically the relationship between causal mechanisms in the system and relevant factors outside it must be constant. The distinction between open and closed systems is relevant to the choice of a method for their research. In closed systems, the sequence of events will be regular in nature; A will always be followed by B. In open systems, regularity may be observed but constant regularity cannot be assumed, A may be followed by B but not always (Sayer, 1992). The IT system within a firm seems to violate Sayer's conditions for closure. As discussed in Chapter 2, alongside its hardware and software components it contains human and social objects whose nature cannot be invariant or predictable in a mathematical sense. Further, the mechanisms in IT systems are sensitive to the environment in which they operate; for example the definition and perception of quality for an IT application's configuration design will vary with the context in which the application is used; for example, different contexts will have differing relative demands for reliability compared with speed of delivery or cost effectiveness.

My conclusion that IT systems are open not closed in nature suggested to me that a quantitative research methodology is unlikely to deliver a satisfactory result in this project. Such an approach would aim to find reliable and repeatable conjunctions or correlations between factors and these are unlikely to be present. Alongside the IT system's open nature, there are further problems of comparison between cases that flow from inconsistent definition of outcome factors (like 'innovation'), variability in the

timing of any effects that outsourcing might have on these factors, and the difficulty of controlling for different operating or market contexts. Taken together, these would be likely to render impossible the reliable quantitative analysis of those intangible and social aspects of the IT outsourcing phenomenon that I find interesting.

Instead, I have chosen a qualitative methodology, which seeks to develop a detailed understanding of the objects and causal mechanisms within the IT system. Before starting with fieldwork, I determined two aims for this qualitative approach. The first was to identify major factors (or objects) within the IT system that could be changed by outsourcing decisions. The causal relations and their associated mechanisms both among these major factors and between the factors and the rest of the IT system were to be examined, accepting that causality in this situation may be significantly influenced by the industrial or public service context in which the IT system is operating. My second aim was to explore, again contextually, how the properties of the IT system causally influence the effectiveness of the organisation in which they are used. The aim here is to make sense of the ways that factors within the IT system create outcomes that are favourable (or unfavourable). The sensemaking or interpretive process that I would use for this is further expanded in the next section.

The choice to reject a quantitative research approach means that statistical generalisation from my research result will not be possible. However, by developing an understanding of these two areas of factors and causal relations, analytical generalisations, that is generalisations to relevant theories (Firestone, 1993, Yin, 2003), will be created.   This process of relating findings to the existing theories that are relevant, especially to the social factors or objects identified in the IT system, would generate further insights or extensions to these theories. As well as this, the approach will deepen qualitative understanding of the social objects and causal mechanisms that are present in IT systems. A study of how these are affected by outsourcing will provide guidance to practitioners who are seeking to understand more comprehensively the potential long term impact of IT outsourcing projects on the competences of their organisations. Description of these in case studies will also create the conditions for naturalistic generalisation (Stake, 1995) through which practitioners can relate the vicariously expressed circumstances of the case to their direct experiences. Finally, the exploration in detail of the IT system and the effects of outsourcing on it may generate interesting ideas for further research.

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3.2.2 The approach chosen for the enquiry

The basic idea of sensemaking was defined by Weick (1993) as '…that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs' (p. 635). He goes on to generalise that 'Sensemaking is about contextual rationality. It is built out of vague questions, muddy answers and negotiated agreements that attempt to reduce confusion.' (p.636). This description of an albeit imperfect process, but one which I could use to understand and interpret events, struck me as one that fitted with my own experiences as a practitioner in management in general and IT outsourcing in particular. It seemed to be the best (or maybe least-worst) approach for interpreting the real situations in which I would encounter and try to describe IT outsourcing and its consequences. This opinion was reinforced by the definition of interpretive studies given by Orlikowski and Baroudi (1991), these studies showed 'evidence of a nondeterministic perspective where the intent of the research was to increase understanding of the phenomenon within cultural and contextual situations; where the phenomenon of interest was examined in its natural setting and from the perspective of the participants; and where researchers did not impose their outsiders' a priori understanding of the situation' (p.5).

Based on this, I decided that this thesis should follow a process of sensemaking, using an interpretive methodology to construct a conceptual framework that could apply to organisations that use IT outsourcing. It is sense-making of the role outsourcing plays in how the IT services of an organisation provide a basis for innovation. It is sensemaking of the literature that describes how IT has developed as a force in organisations and the benefits and problems it has created. It is sensemaking of the knowledge, social capital and innovation related strategies of professionals in the organisations studied and the way these are described and developed.

Based on Weick's words, the phenomena under study in this thesis are not static. Reality is ongoing; it is a state that changes with events and the actions and ideas of those encountering them. Reality is retrospective; I can only interpret what has happened, not what is happening or might happen in the future. Reality is contextual; IT systems have developed and outsourcing decisions have been made in the unique circumstances of the organisations I encountered. Using Weick's adjectives, making

sense of reality is vague and muddy; I collect data using the questions I see as the right ones based on my vague appreciation of the literature I happen to have read, I develop meaning from interviews in muddy conjunction with my interview subjects.

The conclusions that this thesis may reach, based on such a process of sensemaking, are thus shifting in nature, backward looking, relevant only to the situations I investigated and my imperfect interpretations of these. What then is my claim to the value of this enquiry?

Schwartz-Shea and Yanow (2012) seemed to point me to an answer to this question. An interpretive research exercise, such as my project represents, 'shifts responsibility for the applicability of research learning to other research settings from the researchers to the readers of the research' (p.48). To allow this to happen I, as the researcher, must describe this context in as complete a way as possible. This led me to a decision to incorporate detailed case study descriptions of the organisations I visited into the body of this thesis (these will be found in chapters 4 and 5). My observations and descriptions of the situations I encountered and the context in which these occurred while imperfect are, I hope, sufficiently detailed for the reader to extract learnings that are relevant for other situations from the vague mire of my interpretation.

An initial theoretical perspective, formed partly from the literature I have studied and partly from my personal experience as a practitioner is also seen as important by Shwartz-Shea and Yanow (2012). This theory and experience combine to give me *a priori* knowledge of the topic of my research. In interpretive research the importance of this knowledge '…is seen not only in shaping the development of research interest, but also as potentially playing a key role in the conduct of the research.' (Schwartz-Shea and Yanow, 2012 p.26). The approach I am using is not a grounded one, with no initial theoretical perspective but rather one where I actively use existing theory and my own background knowledge to shape the research process and findings. The importance of some formality to the initial perspective is emphasised by Eisenhardt (1989) as a means of overcoming the problems that the background knowledge (and opinions) I have can introduce. She comments 'it is impossible to achieve this ideal of a clean theoretical slate. Nonetheless, attempting to approach this ideal is important because preordained theoretical perspectives or propositions may bias and limit the

findings' (p.536). Deriving initial propositions and frameworks from literature before starting on fieldwork will, if not clean the slate, at least add some order to it.

Once fieldwork is completed, the data I collect must be ordered and analysed. The processes for collection and ordering, as research methods, will be described later in this chapter. At this point I would like to reflect on the process of analysis and the contribution this will lead to. It is not my aim to produce findings that are devoid of theoretical development; even though the intensely social nature of my underlying data as I have described would seem to hamper this. Alvesson and Karreman (2007) draw a helpful distinction between data and their concept of 'empirical material'. The former are 'inextricably fused with theory' (p. 1265) while the latter emerge from the interpretation and background of the researcher, closer to the discussion of sensemaking set out above. Hence, through this lens, my underlying data should not be described that way, it is not fused with theory; rather it is empirical material, imperfectly gathered and interpreted by me and others. Alvesson and Karreman also propose an approach to qualitative research that seeks to discover or create theory, rather than justify it, an approach in which the researcher uses the empirical material '…as a potential dialogue partner, leading to questioning, doubting and problematizing existing/dominant expectations and frameworks. Theory is viewed as a potential tool for disclosure, and so are breakdowns in understanding' (p. 1279). Their approach is one where a number of factors are combined in building a case for a new idea: 'illuminating empirical material' (in my thesis the case studies and the interviews they are based on), a 'careful and sophisticated understanding of the relevant literature', an 'interpretive repertoire' and demonstrations of 'reflexivity' (Alvesson and Karreman, 2007 p.1279).

This approach will be broadly followed in this research exercise. The method for collecting the empirical material will be further elaborated and reflected on later in this chapter. The literature has been reviewed and analysed in Chapter 2. My interpretive repertoire is worthy of further exploration as is the process of reflexivity. These two factors will each now be discussed further.

The interpretive repertoire or a researcher can be described as the set of theories and knowledge he or she has mastered (Alvesson and Karreman, 2007). As such it represents a lens through which the researcher looks at and interprets empirical

material. Alvesson and Karreman describe 'scholarly' researchers as those who have mastered a few areas of theory in some depth, while 'lay' researchers have a wider theoretical span but a lower level of appreciation of each theoretical area (2007). I am on a personal journey from being a practitioner in my field of study to being a researcher and academic (in a field of study that is, at time of writing, only loosely determined). As such, and now equipped with some study of relevant literature, I sit somewhere between the 'lay' and 'scholarly' definitions, not squarely in either group. This creates somewhat of a dilemma when entering a process of enquiry and interpretation about my field of study. The practitioner in me looks for a broadly based and not too rigorous interpretive approach, the scholar seeks to understand issues in depth - but what issues? The process of thesis research and writing is one in which theoretical depth is developed, yet this happens in parallel with a research and analysis exercise in which decisions must be made on the breadth and depth of theory to be used. Adopting a process of reflexivity throughout the phases of collection of empirical material, its description in case studies and the interpretation of these may help resolve this dilemma.

Schwartz-Shea and Yanow (2012) discuss the idea of reflexivity as a way of checking the sense making of a researcher. They define it as 'a researcher's active consideration of and engagement with the ways in which his own sense-making and the particular circumstances that might have affected it, throughout the research process, relate to the knowledge claims he ultimately advances in written form' (p.100). They describe processes of reflexivity and propose two reasons for its methodological significance. First, it encourages the researcher to consider how his position, relative to that of the research subjects, shapes the interaction with those subjects and the knowledge claims that emerge from these. Second, it calls on the researcher to consider how the research community of which he is a part conditions both the research questions asked or the very concepts used to explore phenomena' (p. 102).

Regarding the design process for the research and analysis exercise this thesis represents, this section of this chapter is a reflexive one; I am trying to consider here how my nature, the nature of my research topic and field conditions I might encounter could shape the enquiry I am conducting. Yet this alone is not enough. Schwartz-Shea and Yanow (2012) point out that not only do the components of reflexivity

change as the research process develops, they stand on the shifting sands of my own development as a researcher (if you like, the way my interpretive repertoire changes as the study proceeds). Hence there is need for a reflexive process throughout the research and analytical methods used in this thesis. These will be described and discussed from time to time in its chapters.

I will now go on to evaluate the interpretive methodology described here as a means of building understanding in the Information Systems field with which IT outsourcing is most obviously associated.

3.2.3 Justification for use of case studies and of interpretive methodology in IT research

The use of qualitative, interpretive methodologies based on field or case studies has become an established technique for researching intricate problems in the information systems field which effectively includes IT and its management. In this section I will review some relevant papers that explain and justify how case studies with interpretive methodologies can be used.

Developing case studies as a way of understanding the phenomenon of IT outsourcing both complements and supports an interpretive methodology. Stake (1995) describes the relationship between case studies and interpretivism, 'our observations cannot help but to be interpretive, and our descriptive report is laced with and followed by interpretation' (p.134). Collecting the observations I would need to write a case, sifting and describing this in search of understanding would involve me in the detail and the context of a real situation in which IT outsourcing was used. In doing this I could both use and challenge my own experiences with outsourcing. Experience gave me the basic tools and language I would need to interact with practitioners in the organisations I would visit, I hoped it would also give me credibility as a discussion partner in their eyes. Seeing for myself how others have used outsourcing, understanding their successes and problems would also contextualise and challenge my own experience, forcing me to limit, or at least recognise the subconscious bias that my experience could bring to my analysis.

Making comparisons between cases, and between cases and theory, would help reduce my own information processing bias as well as deal with any prejudiced opinions I might bring from my personal experiences with IT outsourcing (Eisenhardt, 1989). Eisenhardt also claims that conceptual conflicts the case study approach brings about can lead to novel theory generation saying, 'This constant juxtaposition of conflicting realities tends to "unfreeze" thinking, and so the process has the potential to generate theory with less researcher bias than theory built from incremental studies or armchair, axiomatic deduction' (p.546).

Orlikowski and Baroudi (1991) studied IS research in leading journals across a five year period in the 1980s, noting the dominance of positivism as a research approach in that period. They expressed the view that the dominance of one specific research paradigm had limited the types of phenomena that had been studied and the ways that study had been completed, limiting the generation of new theory. Further, positivism is limited by its 'disregard for historical and contextual conditions as possible triggers of events or influences on human action' (p.12). More use of interpretive or critical methodologies would acknowledge the difficulty of eliminating, and the value of using the interpretive scheme of the researcher. It would also accept that context and time are each factors that shape phenomena in the information systems world. Finally it would acknowledge that aspects of reality that are socially created and subject to differing interpretations both exist in and are relevant to the world of information systems. Orlikowski and Baroudi distinguished between two types of interpretivism: 'weak' interpretivism accepts that some objective reality exists, attempts to uncover this and admits the use of positivist methods to achieve deeper understanding of causal mechanisms. 'Strong' interpretivism assumes that all reality is constructed in the perception of the researcher and thus is not amenable to further research by other approaches. This distinction seems relevant to my project; while I aim to understand the more social facets of IT outsourcing, I do not rule out that objective relationships exist in the phenomenon when viewed as a whole. These may be uncovered by a consequently 'weak' interpretive approach and proposed as items for further research.

Walsham (1995) evaluated the use of interpretive case studies in information systems research, building amongst others on the work of Eisenhardt discussed above. His work recognised the importance of theory in interpretive IS research. Theory provides a starting point for the creation of concepts that can be tested against empirical data.

This prescription for the relationship between theory and data is echoed in the later, more generalised approach to interpretive methodology of Schwartz-Shea and Yanow (2012) discussed in the section above. Walsham also provides helpful guidance on generalisation from interpretive research. He proposes four broad categories of generalisation: development of concepts, generation of theory, drawing of specific implications and contribution of rich insight (p.79). These, he writes, while not predictive of future situations, 'should […] be seen as explanations of particular phenomena, derived from empirical interpretive research in specific IS settings, which may be valuable in the future in other organizations and contexts.' (p.79).

Walsham's guidance on generalisation provides justification for my methodological approach. I have aimed to develop a concept from existing theory and test this in specific IS settings. The concept will contribute to IS research by supporting explanations of behaviour in IT outsourcing settings which may be valuable in other IS contexts.

Klein and Myers (1999) recognised that by the time of their writing, interpretive research had emerged as a valid and important approach in the information systems field. In this they acknowledged the earlier work of Orlikowski and Baroudi (1991) and Walsham (1994). They write that 'IS research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such as language, shared meanings, documents, tools and other artifacts' (p.69). They proposed a set of 7 principles for the conduct and evaluation of interpretive research exercises derived from anthropology, phenomenology and hermeneutics. While not repeating these here, I have taken these principles into account in my approach to analysing the data collected for my dedicated case studies and will refer to them further later in this chapter.

I have discussed here the basis for the interpretive approach to enquiry that this thesis uses and the justification for choosing such a qualitative methodology. I have also tried to justify why a case study approach was chosen and used for the collection of primary data.

The next section of this chapter will describe how I developed the initial research questions into an initial theoretical framework to use in collecting case data.

3.3 The development of Research Questions

3.3.1 Initial research questions

In this section, I move on from describing the nature of the enquiry of this thesis to the more specific objects of enquiry. These flow from the research questions defined in Chapter 1 and the literature analysis of Chapter 2. An initial definition of these objects, based on theory from existing literature, helps to manage any bias introduced by the preordained theoretical perspectives that I, as a researcher, introduce from my prior experience in the field (Eisenhardt, 1989).

The aim of this research is to interpret how decisions on the way IT assets are sourced can affect organisational competence and advantage. This was encapsulated in two overall research questions:

RQ1 'How do social capital and contextual knowledge support an organisation's ability to innovate using information technology?'

RQ2 'How is innovation competence affected by changes in social capital, knowledge and structure that are created by IT outsourcing?'

The phenomenon these research questions address is one in which an organisation makes a broadly defined business decision, to outsource its IT functions. Over a long period, this decision affects an equally broadly defined quality of a business, its ability to deliver innovation. An attempt to understand the causality between the IT outsourcing decision and the future innovative capability has both methodological complexity and analytical risk. These emerge from the number, qualitative nature and contextual variability of the factors that might intervene between the initial outsourcing decision and its consequences.

To address this, the factors that could be identified within the IT and outsourcing literature were combined to create the notion of an 'IT system' whose complexity could be empirically explored in the case study research approach chosen. The literature review in Chapter 2 identified three contextual domains within this system: the technological domain of the IT applications and platforms, the structural domain of the organisation and the knowledge domain created by the IT platforms. Some proposed relationships between these domains were also described, some formal and tangible,

others more social in nature. Four propositions were ultimately derived about how the tangible and intangible factors in the IT system might interact to promote innovation competence.

These three domains and the proposed relationships between them are shown in the high level framework shown in figure 3.1. In the next section the development of an initial theoretical basis for fieldwork will be described.

3.3.2 Development of initial approach to fieldwork
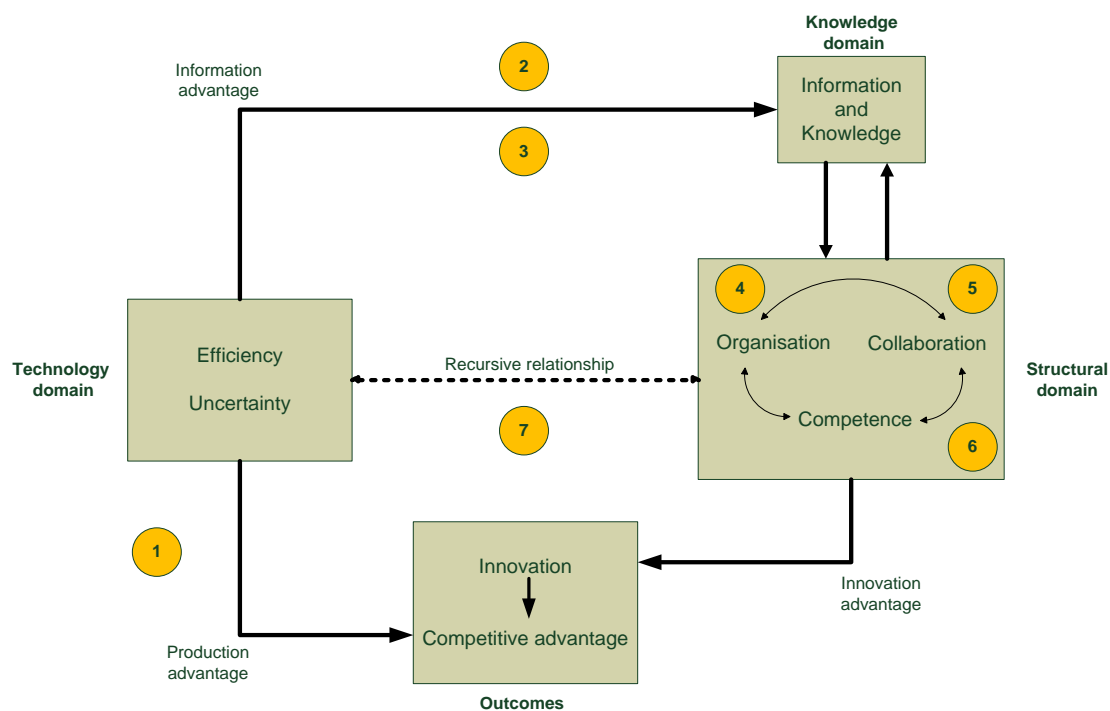
Figure 3.1: Initial ordering framework of the 'IT system'

Based on the literature, an initial ordering framework that shows how the IT system influences innovation outcomes was proposed, this is shown in figure 3.1. Within this framework, 7 relationships of interest were initially identified. For each of these the literature was used to propose a view of the potential effects of outsourcing on the IT system of the firm and the ways that these might influence innovation processes. These propositions form the basis of the substantive questions in the case study

protocol (Yin, 2003) that was used in fieldwork. The 7 propositions are listed below and numbered in alignment with figure 3.1.

1.   IT outsourcing reduces the operating costs of the organisation compared to a situation where all IT is managed within the organisation. This production advantage of outsourcing erodes over time as transaction costs increase.

2. The use of outsourcing materially increases the organisation's ability to use IT generated information and IT knowledge as a source of innovative performance improvements.

3. The risk of opportunistic behaviour by the outsourcing vendor is always offset by the ability of the organisation to introduce competing vendors during contract renegotiation.

4.   Contractual governance in outsourcing agreements does not interfere with the formation of revised tacit organisational processes after the disruption of the outsourcing transaction has passed.

5. Outsourcing improves the result of collaboration within the organisation as new knowledge resources from the vendor are added.

6. Outsourcing leads to improvement in organisational knowledge of key systems, operational processes and business processes.

7. Longer term motivations of the organisation and the vendor overcome emerging contractual barriers to adaptation of the outsourcing relationship to handle unforeseen external challenges.

The next section will describe the research method used and will discuss how these theoretical propositions were used to direct data collection.

3.4 Research method

3.4.1 Case selection and access

The project called for me to gain access to organisations with large scale IT systems and significant experience of the use of outsourcing within these. Methodologically, I would then collect data, using questions derived from the framework developed in the previous section.

An ideal case selection process would have involved creating a population of potential cases and then drawing research targets from this by a process of theoretical sampling (Eisenhardt, 1989). My relatively short timescales and lack of research profile made this approach impractical. To compensate I used my personal contact network to identify three candidate opportunities. Each was large, used IT outsourcing in different configurations and was in a different sector from the others. They used different vendors and a mixture of off- and onshore outsourcing. Two (Agency and Bank) were based in the UK, the third (Telco) in continental Europe. Over a period of several months in 2013/14, I negotiated access to Agency and Bank. I failed to secure agreement with Telco in the time available and had to remove this from the study. While disappointing to lose a case, I realised as data collection proceeded that the further detail Telco would have given the study, while adding an interesting cultural slant (by virtue of its operating location), was likely to be marginal in the social and knowledge related fields that were of highest interest.

Access was negotiated through an initial contact person with whom I either had a good initial relationship or was introduced to by a credible third party. I explained the purpose and benefits of my study to this person and outlined the types of people I would wish to interview. A list of potential participants was then agreed, both in the leadership team of the IT organisation and with its suppliers, and an introduction to me was issued to this list by my contact person. This method both led to the creation of a strong research base and boosted my credibility as a researcher through the internal introduction. No interviews requested were subsequently declined.

I presented myself to the subjects of the research as an experienced person in the field. Before the meeting, I sent all subjects a written description of my proposed research to which a short biography was attached. This made clear that I had

significant experience in the IT field ('as CIO', a recognised term denoting the leader of an IT department) and specifically in a range of outsourcing activities.

The purpose of the biography was both to set an expectation that I would not require low level instruction in the IT field yet more importantly to position myself as a peer in the community of practice. This, I hoped, would lead to a more open and even dialogue in which I would form part of the data generation process; developing intersubjective meanings of the topic of interest alongside the participants.

3.4.2 Data collection

Data was collected in semi-structured interviews which I conducted with the list of participants I had agreed with the internal sponsor. The interviews were scheduled in 1 hour slots (the time of senior IT managers is usually limited and their diaries crowded). After the usual social niceties this typically allowed for 40-55 minutes of conversation; in a few cases the participant wished to carry on for longer and I accommodated this. All interviews but one were recorded, the participants were informed in advance of my intention to do this and this was reconfirmed at the start of the interview. In one interview a participant was uncomfortable with the recording but was happy for me to take written notes. A protocol of data security and confidentiality was discussed and agreed; the recordings and transcripts that I would make, would be for my own use only (not published in this thesis nor returned to the organisation), neither would individual participants be identified or quoted in the case study that was finally produced. Table 3.1 shows the indicated job roles of the interviewees and their position in the reporting structure of the organisation. All interviewees were either overall responsible for IT management, a first line report to this individual (or a peer at the same hierarchical level) or the senior responsible individual for relevant vendor operations.

Code	Job role	Reports to:
A1	Head of Department - IT responsible	Board
A2	Senior Manager	A1
A3	Senior Manager	A1
A4	Senior Manager	A1
A5	Senior Manager	A1
A6	Senior Manager	A1
A7	Head of Vendor team	Within vendor organisation
B1	Head of Department - IT responsible	COO/Board
B2	Senior Manager	B1
B3	Senior Manager	B1
B4	Senior Manager	B1
B5	Senior Manager	B1
B6	Senior Manager	Peer of B1
B7	Senior Manager	Peer of B1
B8	Head of Vendor 1 team	Within vendor organisation
B9	Head of Vendor 2 team	Within vendor organisation
B10	Head of Vendor 3 team	Within vendor organisation

Table 3.1: Description of interviewee roles

While this qualified as the basis for an interpretive research study under the criteria proposed by Klein and Myers (1999), other significant data collection techniques were not used. Document based investigation of the commercial and contractual agreements supporting outsourcing would have yielded data that was at best of peripheral interest but would have created a set of problems around commercial sensitivity (at least at the Bank) that might have damaged or delayed access. Participant observation, given the dispersed and diverse nature of IT work in each organisation while in itself interesting, would have been practically tricky and likely to introduce little relevant data.

Eisenhardt (1989) describes the importance of specifying constructs in the design of theory building case study research. These can provide a 'firmer empirical grounding for the emergent theory' (p. 536). Hence for each interview with a member of the organisations' IT leadership team a standard headline topic list was prepared within which identified concepts could be grouped. This was based on the 7 relationships described in section 3.3.2 that had been identified from the literature and the objects on which they acted. 5 topics were identified and subsidiary questions under each were proposed. The topics were:

- Objectives for outsourcing

- The importance of innovation and IT's role in this

- The development of the relationship with the vendor

- The effect of outsourcing on organisational structures

- The effect of outsourcing on collaborative/relationship/innovation competence

I chose these headline topics because I believed that the answers to questions under them would provide insight into the 7 relationships while using language and subjects that were both familiar and of interest to the participants. The topic list was deliberately not shared with the participant at the outset to allow a free flow of information to be generated that was not constrained by my explicitly set out agenda.

For the interviews with vendors, a different approach was taken. I wanted to avoid the risk that they might feel trapped by me into giving information or opinions that, if expressed in the case study, might prejudice their relationship with their client (the interview protocol notwithstanding). Hence in these interviews a more detailed topic description was prepared and shared with them at the start of the meeting. After they had chance to read through this I checked that they were happy to engage in a discussion of the issues shown, which in all cases they were. In taking this approach I deliberately compromised between the benefits of a free flowing discussion and the risk of an unethical and unintended positioning of myself as a researcher between vendor and client.

The table in figure 3.2 illustrates the process that was used to develop the headline questions and discussion topics for both the IT leadership and vendor interviews and the linkage of these to the 7 hypothetical relationships I wished to examine.

In almost every interview it was possible to address all the topics intended although the emphasis on each was different according to the specialism and interest of the participant. All the conversations were free flowing, I did not explore the issues in a fixed sequence but chose to lead the participant through them as time and the development of the conversation allowed.

The conversations were all transcribed by me from the audio recording, which was always of good quality. The length of the transcripts varied but were broadly in the 7,500 – 10,000 word range. A total of 17 interviews were transcribed split 8:9 across the two cases (in the second case study more supplier interviews were possible).

Hypothetical relationship	Proposition	Candidate polar outcomes		Headline concept	Headline questions	
		Positive outcome	Negative outcome		IT leadership question	Vendor question
1. Securing production advantage	IT outsourcing affects the operating costs of the organisation compared to a situation where all IT is managed within the organisation.	Outsourcing creates a permanent production and transaction cost advantage	There is no permanent production or transaction cost advantage from outsourcing	Objectives for outsourcing	What objectives did you have for outsourcing?	What are the main reasons that clients choose to outsource IT?
2. Securing information advantage (use of information for innovation)	The use of outsourcing materially influences the organisation's ability to use IT generated information as a resource for innovation.	Vendor skills give the organisation the opportunity to achieve advantage from improved access to IT generated information.	The organisation's access to opportunity creating information is lost as outsourcing removes internal skills.	The importance of innovation and IT's role in this	Why is innovation important for you?	What do you consider to be your role in the client's innovation process?
3. Securing information advantage (use of information for governance)	Outsourcing provides insight into IT management processes that allow opportunism by the outsourcer and vendor.	IT generated information does not increase the risk of opportunism in the outsourcing relationship or hamper innovation.	IT generated information leads to opportunistic behaviour by the firm or the outsourcing vendor or both thus hampering innovation.	The development of the relationship with the vendor	Has the vendor invested in the innovation process? Do you see this as important? Was this in the contract?	To what extent is innovation captured in the contract as opposed to being an opportunity to generate further value over and above the contract?

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Hypothetical relationship	Proposition	Candidate polar outcomes		Headline concept	Headline questions	
		Positive outcome	Negative outcome		IT leadership question	Vendor question
4. Development of the organisation (structure)	Outsourcing disrupts the tacit structures that supported innovation in the former organisation and replaces these with contractually governed formal structures	The formal organisational relationships created between the firm and the outsourced IT function improves innovation performance.	The disruption of tacit organisational relationships created by outsourcing damages innovation performance on an ongoing basis	The effect of IT outsourcing on organisational structures	How important are clear, up-front agreements with the vendor compared to effective working relationships? Do you consider both as viable governance methods?	To what extent do you rely on agreed and documented processes between you and the client for the delivery of innovations?
5. Development of the organisation (collaboration ability)	Outsourcing restructures the social capital of the organisation as norms and values of the vendor are injected into existing collaboration methods	The contribution of parties' knowledge to collaboration is clear for both the firm and the vendor leading to an improvement in innovation performance	Responsibilities for knowledge contribution in collaboration between the parties is unclear or contentious. A common language of innovation fails to develop.	The effect of IT outsourcing on collaborative competence	How would you describe the effects that IT outsourcing has had on your informal ways of organising?	Is there a role for emergent process, coming from unplanned working relationships in generating innovation?

Hypothetical relationship	Proposition	Candidate polar outcomes		Headline concept	Headline questions	
		Positive outcome	Negative outcome		IT leadership question	Vendor question
6. Development of knowledge (IT competence)	Outsourcing changes the organisation's competence in knowledge of key systems, operational processes and business processes.	The firm retains an appropriate level of competence in IT system as a whole, complemented by the vendor where needed and reacts to the need for a change in vendor management approach	The firm loses IT competence and this is not replaced by the vendor, levels of control over the vendor tighten.	The effect of IT outsourcing on relationship competence	What are the most important changes that you see in the way that IT is managed after the outsourcing compared to the situation before?	What do you see as the key competences that a client needs to get the best from the outsourcing relationship?
7. Development of technology alignment to business goals	The change in IT governance created by outsourcing affects the organisation's ability to maintain human and technological alignment	The firm develops its organisation and technology in harmony supported by knowledge from both parties.	Organisational and technical developments fall out of step with each other as IT system knowledge is lost.	The effect of IT outsourcing on innovation competence	How has outsourcing altered the competence of the IT organisation?	How do you balance knowledge resources (skilled and experienced people) taken in from the client with resources from your own organisation?

Table 3.2: Development of headline questions from hypothesised relationships

3.4.3 Ethical considerations

This research project is interpretive and exploratory. It does not aim to create action in the researched organisations nor to make public judgements as to their effectiveness in managing IT outsourcing. Therefore any possibility of harm to these organisations as a direct consequence of action initiated by the research is very limited.

To ensure open participation at both organisational and individual levels the key ethical concern was one of anonymity. Organisations like the Bank have a competitive position to protect and I could not allow my research to compromise this. Hence I decided early I the process to conceal participants' identity and to minimise specific description of their activities, doing this only where it was needed to contextualise the social and knowledge related issues that were of most interest to me. Anonymity also helped to secure open participation from the individuals I interviewed although I was surprised at how open people were prepared to be with their views on the situations we discussed. This was possibly a reflection of their relative seniority in the organisations they represented and that the discussion points reflected real internal debates. Had I conducted interviews with staff at a working level in the organisations the willingness to contribute freely might have been more limited.

To understand any ethical issues that might emerge from this research, I used the ESRC Framework for research ethics (Economic and Social Research Council, 2015). I chose this because of its currency and its relevance both to potential further research and to the University of Exeter Business School's ethical policies; this framework being cited in these as a source of detail on ethics principles and of practical guidance for their use in practice. The framework specifies six key principles of ethical research which the ESRC expects to be addressed in research proposals. Below I will address each of these and describe my response and, where appropriate, the actions I have taken.

1. Research participation should be voluntary

In both the case study exercises I conducted, my lead contact in the organisation gave me a list of interviewees to contact. This was in response to an initial discussion between us about my areas of research interest. All the interviewees were senior managers in either the client or vendor organisations. In both cases the lead contact also offered administrative help in setting up meetings. I contacted the participants individually several days before each meeting, providing an introduction to myself, a description of the proposed research study and my intentions for the interview. In no case was the interviewee reluctant to be interviewed or surprised when I arrived to interview them.

2. Research should be worthwhile and provide value that outweighs any risk or harm

Taken as a whole, my research aims to deepen understanding of a widely used IT management method. It could provide insights for practitioners that would allow more effective outsourcing arrangements to be made, leading to improved innovation and thus commercial or service results. There was no intention to achieve this goal at the level of the individual case, I made no specific recommendations as a consequence of my work. Each lead contact was provided with the case document for their organisation (which form chapters 4 and 5 of this thesis) and will receive a summary of my overall conclusions when this thesis is finalised. Hence I believe the risk or harm to the organisations involved is minimal. Participants' risks are protected by the voluntary nature of their contribution and by the anonymity attached to this.

3. Participants should be given appropriate information about the purpose, methods and intended uses of the research.

As discussed above, this was provided in advance of the interview. Its receipt was confirmed at the outset of the meeting and an opportunity to ask further questions was offered.

4. Participants' preferences regarding anonymity and confidentiality should be respected.

All contributions to the research, both at organisation and individual level were anonymous. No names or roles are identified in the case studies or the analysis of these. Interview data was recorded and transcribed but these transcripts remain in my possession only, have not been shared with the participants or their organisations and are not part of this thesis. Interviewees were asked explicitly for content to record conversations at the outset of each, this was given in all but one case. In this case I made interview notes. During the interviews I took care not to reflect on or introduce the views I had heard others express, protecting their anonymity and ensuring that each interview was as isolated a data collection activity as possible.

Vendor protocol was slightly different as I was conscious that the research could potentially reveal information from vendor to client, especially where a single vendor was involved whose anonymity would be impossible to secure. In all interviews with vendors I sent them a more detailed description of the specific topics I wanted to cover before the meeting. This gave them an opportunity to talk more generally about the topics if they did not want to focus on their specific client. In the case where only a single vendor was used, the vendor was sent the relevant section from the case study for approval before the whole document was shared with the client organisation. This was secured with no need to make revisions.

As a final check, the completed case study chapter was sent to the organisational sponsor for approval before incorporation into this thesis. I held a meeting with each sponsor to secure this approval and answer any questions they might have about the case. Only minor factual revisions were made as a consequence of these meetings.

5. Research should be designed, reviewed and undertaken to ensure recognised standards of integrity are met and quality and transparency are assured.

My research design, field protocols and interview scripts were all discussed with one or both of my thesis supervisors and their views and feedback taken into account. Through their experience they provided a valuable reference to accepted standards of research and a check of my compliance to these. I maintained a good contact

with the lead participants from the case organisations throughout and their review of the final case document provided further assurance of quality from a different perspective.

6. The independence of research should be clear, and any conflicts of interest or partiality should be explicit.

As a university based researcher I have no formal links to organisations that provide services in the IT outsourcing industry. My research is funded exclusively by the university. Hence there are no formal conflicts of interest of which I am aware. My previous work experience as an IT practitioner who was involved with outsourcing does introduce an aspect of partiality, at least in my approach to data collection and analysis. I have openly discussed this in this document and was clear to my research participants that I was Director of IT for a large organisation in the early 2000s. This organisation (which no longer exists as an independent firm) had no competing interest or overlap with the organisations I researched.

3.4.4 Approach to case development

The act of 'writing up' the case study is a key step in the analysis process. Eisenhardt (1989) refers to this as 'within-case analysis' proposing that case write-ups are 'central to the generation of insight' (p.540). Yin (2003) points out the importance of the case write-up for communication of the situation of the case for others. Such clear communication is also needed for the process of 'naturalistic generalisation' described by Stake and Trumbull (1982) in which the case reader theorises based on relating the material in the case to his or her own experiences. The case write-ups for the Agency and the Bank have been produced to fill these three purposed and hence form an essential component of this thesis, they will be found in Chapters 4 and 5.

The case studies were written as single case narratives, essentially using the question and answer approach (Yin, 2003). Cross case analysis is not carried out in the case study chapters although is it used in the discussion Chapter 6. The case write-ups are grounded in the interview transcripts. To manage the large amount of information these contained the NVivo qualitative analysis tool was used. The

transcripts were loaded into NVivo for analysis at a detailed level. Three capabilities of the NVivo package were extensively used: coding, annotations and memos.

A scheme of coding nodes was set up based on the headline topic areas of the semi-structured questionnaire described above. Below these, further nodes were used to capture information at a higher level of detail. For example, under the coding node 'Outsourcing objectives', subsidiary nodes of 'Cost reduction', 'Quality', 'Access to resources', 'Agility' and 'Other' were set up. Some of these subsidiary nodes were set up initially, others were introduced as interesting categories of data emerged in the process of reading the transcripts in detail. All the transcripts were manually coded against this developing scheme of coding nodes (a process that required some revisiting of earlier transcripts as the need for new nodes was identified). The facilities within NVivo for automatic coding were not used. This coding process was carried out separately for the two case studies although a single set of nodes was used. The separation of the two coding exercises was dictated by the timing of the research but also allowed a more thoughtful consideration of the individual cases to be made.

As the coding proceeded, I found it useful to make observations or contextualising comments on some elements of the transcripts. The annotation facility of NVivo allowed this without the need for me to edit the transcription at all. Thus my comments or explanations of the interview text were captured alongside the original text.

My holistic understanding of the case began to develop as I coded the transcripts. To manage the ideas and knowledge that this process was generating I started to draft the case study sections in rough form using the memo facility in NVivo. This provided more facilities than a simple notepad as individual statements or claims I created could be linked back within the software to the specific comment or comments in the transcripts that supported them using a 'see-also link' facility. In this way a consolidated and supported initial draft of the case study document was made. From this a second, more formal draft was created, this was checked for completeness with a report generated from NVivo which presented the categorised, coded comments in full for each of the case studies.

The final part of the process was a check with the organisational sponsor of the formal second draft of the case study. This was done at a further face to face meeting before which a copy of the draft case was sent by email. This meeting had two objectives: to check that the sponsor was happy to allow the case study document to appear in the final thesis and to get further feedback on the high level observations I had made on the case. In preparation for each meeting the case document was sent in advance to the internal sponsor, allowing at least 5 days for it to be read through. To guide the discussion in the meeting a Powerpoint summary of the key points of the case along with my observations was also prepared and taken to the meeting. In both meetings the cases were approved with only minor factual changes. The discussion focussed on the observations and the sponsors' views of the next steps with their respective outsourcing situations. I left the meetings with the impression that the act of describing the cases in these documents was in itself worthwhile, not just for me but also for the sponsor. In both cases I also believe I could go back for further projects in the future.

3.4.5 Approach to analysis

The two cases present rich descriptions of IT outsourcing in current practice. They do not represent a base of data that is suitable for positivistic analysis, that was never my intention, but they do provide the 'in depth examination of and exposure to the phenomenon of interest' (Orlikowski and Baroudi, 1991 p.14) that is called for in an interpretive methodology. My analysis is then based around a hermeneutic approach of presenting the contextualised empirical data to the theory and assessing where there is fit or conflict, this comparison provides the basis for extensions to the original theory and is one of the evaluation principles ('The fundamental principle of the hermeneutic circle') proposed by Klein and Myers (1999 p.72). To approach this, an analytical structure is needed as there is a lot of data and a lot of theory to assess. I decided initially to base this around the seven relationships of interest that are described in section 3.3 above. As the fieldwork and analysis progressed, I revised this to a simpler structure of four propositions, derived from literature in Chapter 2, that are used to provide the structure in Chapter 6. (The reflection on the research process that led to this change is described in more detail in section 3.5.3).

This reaction to an apparent contradiction between theoretical preconception and actual findings is another of the evaluation principles proposed by Klein and Myers ('The principle of dialogical reasoning') (1999 p.72). For each of these propositions, the relevant literature had been identified and assessed (see Chapter 2) providing me with a starting point for analysis. The analysis leads to further and final propositions, which aim to develop the existing theories that formed the start point of the process. These represent the conclusions of this thesis and are described in Chapter 7.

The minimum number of case studies needed to provide convincing empirical grounding for theory is around 4 (Eisenhardt, 1989). As I had only two detailed cases that were dedicated to this study I reviewed a further five cases of IT outsourcing found in existing literature. These were summarised and built into the final analysis of the propositions in chapter 6.

During the process of completing the fieldwork, both in managing the interviews and thinking about the transcriptions as I made them, I recognised that other theoretical approaches could also be relevant and interesting. The interpretive methodology I had chosen allows (or encourages) the use of a developing theoretical base as research progresses based on exactly this type of reflection, this is the 'Principle of Multiple Interpretations' (Klein and Myers, 1999 p.72).

3.5 Reflection on my preconceptions, the data collection process and development of the analytical framework

The notion of reflexivity is an important one in interpretive research when case studies are used (Stake, 2000). It refers to 'a researcher's active consideration of and engagement with the ways in which his own sense making and the particular circumstances that might have affected it, throughout all phases of the research process, relate to the knowledge claims he ultimately advances in written form.' (Schwartz-Shea and Yanow, 2012 p.100). This is relevant to my exercise in three ways. First, my background in the area of interest might affect my sense making from the research data. Second, the role that I as an individual played in the data collection and analysis activities inevitably would influence the outcome of that process. Reflecting on those activities might help resolve or at least understand the implications of that influence on the value of my research conclusions. Finally, as described in detail above, the approach to data collection and participant questioning was based on a theoretical view of the problem I had derived from literature; how well did this stand up to the test posed by the field? Does this theoretical view still adequately inform any conclusions I might advance?

In this section I will examines these three issues in more depth, considering the practical and theoretical questions separately.

3.5.1 Reflections on my background in the area of interest

I was first involved with outsourcing when I became director of IT for a medium sized mobile phone company in the Netherlands in May 2001. My predecessor in the role had been encouraged by our Board of Directors to look at how we could bring more efficiency and focus to our IT operations. The solution chosen was to make an outsourcing contract with a large international IT services company. Outsourcing, he and our CEO argued, would bring much needed expertise into our organisation. IT was not our speciality, we were a mobile phone company after all. The company we planned to engage was recognised as expert and experienced in the field, much better placed than our own people for helping us in an uncertain future. By using an outsourcing strategy we could focus our management resources on the real

competitive challenges we faced in marketing a new product against fierce competition.

The chosen vendor would take responsibility for managing the IT hardware, networks and internal communication systems that our organisation used. It would also be responsible for all the desktop workstations. It would even buy all the IT assets from us, providing a useful boost to the cashflow of a young organisation in a rapidly growing market. This was only a part of the IT work, we would carry on doing IT application development and management internally using the hardware platforms and networks that would now be managed by the vendor.

So taking over the new role was for me, at the time an experienced product and financial manager but one with little direct IT experience, an attractive proposition. The staff who would be affected by the outsourcing had agreed to the change, all the messy HR related negotiations were resolved. The outsourcing vendor had started to manage operations. I just had to manage the more interesting and forward looking parts of the IT operation with expert support from a major global player.

This turned out to be a hopelessly optimistic view to take. Within months our parent company had decided to split our firm in two, meaning that the IT and the outsourcing contract also had to be split. This change was completely unexpected at the time the agreement was signed. Fights broke out between my internal IT developers and the people who had moved to the vendor, some things that could be done before seemed now to be impossible, this was put down to short sighted power games between middle managers. In one meeting I had to step in physically to avoid fists being thrown. I had daily calls from other senior managers, including the CEO, complaining about poor response from the newly outsourced helpdesk, people who had been prepared to bend the rules to get them what they needed before, now would not play the game.

After some initial fumbling around a new relationship manager was put in place by the vendor. He turned out to be practical, hard-headed but avuncular, gaining respect among my middle managers as well as his own. He and I soon became good colleagues and friends. Between us we gradually reshaped the relationship and the way that services were designed and managed. We renegotiated the contract to take account of the split, a tricky and time consuming process. We

managed the interests and relationships between our more senior colleagues and within our corporate parents. This was a stressful but ultimately satisfying project, gradually the benefits of efficiency and standardisation of our IT infrastructure services began to be seen.

Two years later there was more corporate turbulence, too complicated and irrelevant to this story to describe here. I was asked by Board members if we could do more outsourcing to the same vendor. I recommended not to. Rapid introduction of new services, forced by the competitive markets we worked in, had led to a set of IT applications that were unstable and in a state of continuous change. Documentation was poor and we relied on a body of loyal experts, many of whom were contracted to the organisation rather than employed, for the knowledge that supported our innovation and that we needed to fix things when they went wrong. Despite my recommendation, a decision was made to go ahead. I was replaced as IT Director by another manager more compliant to the Board's wishes and moved to a new role in the organisation. Two further waves of outsourcing took place over the following two years. First the application management roles were moved, then the tricky area of application development. Both went to the same vendor that we were already using for the infrastructure. For the latter deal, it was agreed that cost savings could be made by moving some of the work to the vendor's offshore site in Mumbai.

By 2006 another three years had passed and much had changed. The company had been sold to a new owner and many of the original Board members had moved on. The new managers were frustrated by slow progress with IT, especially with its ability to support the new products they needed to launch. It seemed that very little work could be delivered by the outsourced teams. The company by this time had a very small IT organisation, responsible only for architecture, design and project management. Almost all of the experts we had relied on a few years earlier had moved on, or been moved out. My replacement as IT Director left too.

In the intervening years I had worked on another outsourcing project within the company which we had stabilised and put on a good footing, following the relationship discipline learned in my IT infrastructure experience. The Board asked me to come back and look into what had happened with IT. A number of questions were buzzing around. Should we continue with the outsourcing relationship and try

to make it work? Should we end it and go our own way? Should we have a day in court with the vendor?

My conclusions were mixed. The further outsourcing had been messy, many activities that should have happened to document and understand the relationship, to move knowledge from our people to the vendor in an orderly way had simply not happened. It was not clear why this had come about. People pointed fingers. We were however a demanding client, with poor ability to specify stable requirements for change and frequent changes in our priorities. The management processes for specifying, agreeing and tracking work were clumsy and unreliable. Project delivery would fail, too often at the last minute. I took a trip to Mumbai and met a committed and talented team, but they felt that they did not get clear enough direction, they were not helped to help us.

I concluded that we had no option but to carry on. We had lost the knowledge we once had, and that we would need to go it alone. Our case for poor behaviour by the vendor was weak with little formal evidence that we could present to a judge. As an organisational that was now profitable, with a large customer base in a competitive market, the risks of the radical change that breaking our relationship with the vendor would represent, were too great.

A few months later, I too left the organisation for a completely different role with a new employer in the UK. I will write no more about this case, as my further learnings about it are based on hearsay. It served however to give me a keen interest in IT outsourcing and how to make it work effectively in real situations. I soon started to look at the phenomenon in a more academic way, starting a path that would lead to this research project and thesis. Two aspects of outsourcing especially fascinated me: the way that knowledge can be at least preserved or at best improved within it and the mix of social and formal relationship structures that are needed to make it work effectively. My personal case experience had given me insights into the good and bad side of each.

We had managed to lose much (not all) of our internal knowledge base but had made a long term relationship with another organisation that had all the knowledge we needed and more. We were simply unable to release this and use it to our advantage. On reflection after the event, we needed to move our knowledge base

from one grounded in the technology to one based more on the process, taking all its social aspects into account. Poor levels of trust between my company and the vendor meant that we would tend to hang on to knowledge, believing that this could help us in some future fight. This caused problems that eventually appeared as a weaker innovation competence. Outsourcing had given us IT platforms that were cost efficient, (generally) stable and allowed the company to do what it needed for our customers at that time. It was just difficult to change these.

I learned about the importance of personal relationships alongside formal agreements in making complex deals work. A formal contractual agreement might be able to take some account of 'known unknowns' in the future but it cannot deal with the 'unknown unknowns' like our need to split the company in two. In the presence of a contract, these can only be addressed by good relationships between the parties. Both types of 'unknown' are surprisingly common, especially in complex technological markets ridden with product, price and distribution changes. There is also quite a low level of IT understanding inside organisations; it is simply hard to describe to an external party how a complex operation or interacting technology and process actually works. Failing to explain, or just getting an explanation wrong, creates new 'unknowns' that will cause the outsourcing vendor no end of problems when it tries to deliver the services the client expects. This lack of understanding is also not limited to the technological or operational fields, how should a helpdesk operator be told to react when the CEO's PA comes on the line with a non-standard request?

I have tried in this section to explain and reflect on my background in this topic area and to indicate the preconceptions that this gave me as I approached the fieldwork and interpretation of its results. In the following sections I will give specific examples of how I addressed this and explain how it supported me in the development of an analytical framework.

3.5.2 Reflections on my role and identity in the interview process

During the process of data collection through interviewing and the subsequent analysis of the transcripts I increasingly reflected on my role in the interview. I am an

experienced interviewer, over many years in management and a long spell as a commercial research analyst I had interviewed on many occasions and for many reasons. Yet despite the mechanics of the interview being easy, the process and its output posed an important question: what knowledge that was truly external to me was I uncovering and what was I creating in the dialogue with the participant or introducing from my prior experiences in the area?

This simple exchange from one of the interviews illustrates my concern:

Participant: We're responsible for enterprise architecture. [Vendor] are responsible for technical architecture.

Interviewer: But you also have application development?

Participant: Yes we do.

Interviewer: And that's presumably…, some is in house and some out to different people?

Participant: That's right yes.

Interviewer: And then [Vendor] sort of sits in the middle. It takes in from development and it's responsible for the technical architecture?

Participant: That's right, they deliver the service integration layer in the middle of that.

In this conversation I seem to prompt the participant for answers giving my own view of the likely structure of the relationship which I formed from my own industry experience as described above and from earlier interviews in the organisation. The result is a shared view of a (probably) uncontroversial issue. This second example is of a more complex interaction:

Interviewer: Do you see that as a big wave of innovation, a big change, as an innovation and therefore having a next step? Or do you see it as a

> progression of these small continuous improvements, these step by step changes, that just take you from the old world to the new world in little…

Participant: That's a really interesting question. I think you've got a lot of small things under a bigger umbrella. So the biggest…, the big umbrella is then the rise of digital in its various forms. That enables a whole load of new things. *Continues…*

In this case my question proposed my own view of a potential structure for an innovation process. The participant took this and built on it further, hence we collectively moved towards a shared view of a more significant issue. This corresponds with another of the principles of interpretive field research proposed by Klein and Myers, 'The principle of interaction between the Researchers and the Subjects' (1999, p.72) which calls for critical reflection on how research materials are socially constructed.

Miller and Glassner (1997) debate the question as to whether interviews are a valid way of exploring reality that is external to the discussion. This is helpful in addressing my concerns about the way my data was constructed. They ask the question: do interviews allow reality to be perceived or do they create the reality in the discussion itself? On one hand, a positivist view of the interview is that it should be structured in a way that 'comes as close as possible to providing a 'mirror reflection' of the reality that exists in the social world' (p.99). On the other, the radical social constructivist view is that 'no knowledge about a reality that is 'out there' in the social world can be obtained from the interview, because the interview is obviously and exclusively an interaction between the interviewer and interview subject in which both participants create and construct narrative versions of the social world' (p.99).

Miller and Glassner (1997) go on to propose an alternative position to this apparent dualism.   They believe that in depth interviewing can be used to gain information about social worlds. The interaction between the interviewer and subject is a key component of this as through interaction an intersubjective meaning is created, intersubjectivity connoting the variety of relations that exist between people's perspectives (Gillespie and Cornish, 2010). If the interview is reduced to a purely

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positivistic process where the interviewer does not interfere in the creation of meaning, that meaning may not be comprehensible to the interviewer.

The validity of such intersubjectively created meanings, understandings, differences or conflicts can still be questioned from a radical social constructivist perspective. To what extent do these represent and describe the (inaccessible) real situation that the interviewee has experienced? Miller and Glassner (1997) argue that such meanings provide the researcher with access to the interviewee's experience and that by using this access to explore the interviewee's perspective of meaning, the researcher can achieve knowledge of their social worlds.

Extending this logic to my own experience, the world I aimed to understand through these interviews had two broadly defined parts. It contained objective realities like contracts, cost targets, organisational charts, realities that could be described and tested in formal ways; for example by looking for shared understanding and common descriptions of the entities involved. There were also more intangible, socially constructed factors, like the relationships between people or organisations and the knowledge and competences involved in the IT system. To understand this world a range of different interviewing techniques were needed. A positivistic approach could be used to understand the objective realities; by using the right questions and prompts a 'mirror image' of the objective reality could indeed be created, the prompting I used in the first example above is simply an efficient way of achieving this. Its results can easily be tested in the approval process set up for each case study.

In understanding the more socially constructed factors a trap seems to exist. I still ask myself if my interview process resulted in consistent creation of a true intersubjective meaning. In some cases, like the second above, I believe it did. However there may have been others where the participant and I left the interview with our own distinct 'narratives' of the social factors we had discussed. The use of multiple interviews based on similar topics may serve to reduce the risk of profound misunderstanding, as may the case study approval process, but the risk remains.

3.5.3 Reflections on the initial theoretical background to the research problem

In my initial meeting with the lead contact at the first case study organisation I quickly recognised that the framework I had initially developed (described above in section 3.3.2) had little direct relevance to his perspective of the outsourcing arrangement and the objectives and challenges it presented to his situation. I retained the theoretical basis but developed the questionnaire approach described in section 3.4.2 to deal with this. This seemed to work well across the two cases and generated much useful data. However in the process of collecting, transcribing and analysing this I came to realise that some parts of the framework seemed more relevant to my research question (and interesting to the participants) than others.

Discussions around the objective realities of outsourcing, the mechanics of contracting, technology and the risks of opportunistic behaviour progressed in line with my expectations. The views of participants were generally consistent and where not, this could be explained. Discussions around the more socially oriented competences of both vendor and client organisations, who needed do what to make the outsourcing successful and how the innovative skills and knowledge of one party should be used by the other were more interesting. This was an area where different views existed between people, where problems existed or were foreseen, where the potential advantages of the outsourcing relationship were not being developed or where such development was difficult.

Reflecting on the theoretical framework I had developed, these interesting issues seemed to be focussed in the structural domain and in the relationship of this with the domain of knowledge. I had identified three inter-related factors within the structural domain: competence, collaboration and organisation but these somehow needed to be related to the knowledge resources of each party. I sketched the diagram shown in figure 3.2. as a start for working out how the theory I was using could be developed. Following further study of the literature, this sketch was later to be developed into the conceptual framework shown in Chapter 2 as figure 2.10.
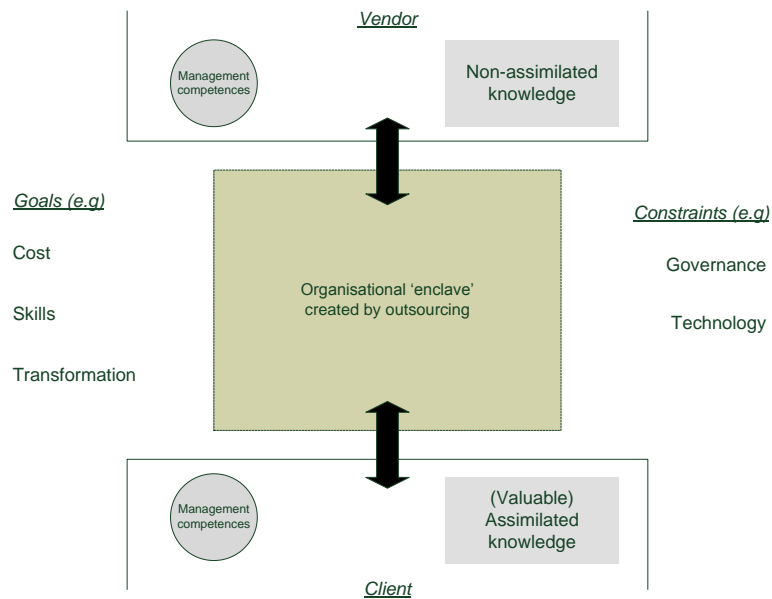
Figure 3.2: Initial ideas on theory development

Organisationally, outsourcing appeared to create a hybrid IT organisation in which the people of the vendor and client would interact, I decided to think of this as an organisational 'enclave'. Each party brought its own knowledge and management competences into this enclave in which these would be combined in its newly created formal and informal organising and social structures. From a knowledge perspective, one goal of outsourcing was to access the skills of the vendor but these were of a generic nature; for example the vendor might have powerful knowledge of a particular IT application but limited understanding of how and why that application was used in the specific context of the client organisation. To be valuable to the client, the vendor's generic knowledge needed to be assimilated with the client's specific knowledge and the organisational enclave was the place where that had to happen.

Yet the organisational enclave existed to achieve a range of specified goals: cost management, access to skills and IT transformation were examples I encountered. It also had constraints placed on it from the governance processes the two parties had agreed and the legacy (of technology for example) that it had inherited.

I realised that the interactions between these factors and the complexity this created in the social world of the enclave possibly explained the diversity of opinion and

ideas that came up in the interviews, but I lacked a strong theoretical basis for describing or interpreting this. My initial theory framework (figure 3.1) was too simplistic in its postulated relationship between structure, collaboration and competence. It also included factors like information generation, risks of opportunism and alignment of technology with organisation which interviewees found hard to engage with.

Hence I returned to the literature to develop in more detail a theoretical basis for understanding the social interactions in the organisational enclave created by outsourcing and their development over time. This led to the four theoretical propositions that are derived from literature in chapter 2 and summarised at the start of chapter 6.

3.6 Conclusion

This chapter has described and justified the interpretive methodological approach selected for this thesis. Based on this it has set out the research questions and the original theoretical framework that informed these.

The choice of cases, methods of data collection and process of case analysis that led to the research findings of the thesis are also described. Ethical issues that emerge from the project are discussed and related to the ESRC framework for research ethics.

Reflection on the processes of fieldwork and compilation of the findings led to two conclusions. First, the data collection method was valid although care needs to be taken over interpretation of the more socially oriented factors where intersubjective meaning was created with research participants. Second, the original theoretical framework of the thesis was not adequate to describe or interpret the knowledge and competence interactions between client and vendor that were taking place in the constrained organisational 'enclaves' created by outsourcing.

To address the second conclusion a deeper theoretical framework, based on the interactions between knowledge and social capital in the IT system was constructed from literature. This set of theoretical propositions will serve as the basis for analysis of the case studies.

The next two chapters contain the case studies themselves which form the research findings of this thesis.

Chapter 4 Case Study 1 – The Agency

This case study is of IT outsourcing in a UK government agency. It was written based on data collected in the second half of 2014.

4.1 Background to the organisation

The UK government reports a total of 345 agencies (Gov.uk, 2014). The agency studied here (referred to henceforth as 'the Agency') is one of the larger public bodies with operational responsibilities throughout England. It has independent management but its activities are sponsored by a Ministerial Department reporting to the UK Cabinet. As such the Agency conforms to policy developed by central government which defines its activities and has a strong influence over how these are conducted.

The Agency employs over 10,000 staff and is responsible for a total annual expenditure in excess of £1bn (Agency Report & Accounts 2013). Its responsibilities and the way these are carried out call for a substantial field force of staff who spend much time away from office locations.

The Agency's IT platforms fulfil four main roles:

- They collect, manage and monitor time sensitive data, some of which has critical public safety applications.

- They provide of data relating to its areas of operation to interested parties, some of whom use this for onward analysis and communication.

- They allow efficient control of the work carried out by staff in the field.

- They support internal controls and enterprise planning

Alongside these application areas, the Agency also has substantial desktop IT, internal data networks and communication networks.   All these are managed by an internal IT department.

4.2 Background to the IT outsourcing decision

This section describes the background to the Agency's decision to outsource IT and the process that led to the existing outsourcing situation.

4.2.1 Outsourcing objectives

In 2006, when the idea of outsourcing was conceived, the broader aim was for it to direct its focus towards its core responsibilities based on a view that IT was not something that the Agency should be doing. IT could better be provided by professional, external specialists.

By 2009, possibly prompted by a change in IT management, problems with the condition of the Agency's IT estate had come to the fore.   This was recognised as being increasingly out of date, inefficient and hard to change. The aims of outsourcing were changed. Now it needed to transform and thereby upgrade IT, creating a system that was in line with the Agency's developing needs. Simply outsourcing the IT estate in its existing condition, while reducing costs, might not bring about these needed improvements and could handicap future efficiency. Outsourcing became a way of achieving this transformation.

Management had questioned the ability of an internal IT team to achieve the transformation they wanted, or at least to achieve it in a timely and cost effective way. They recognised a benefit of outsourcing in that the supplier could be contractually bound to deliver transformation as well as committed cost savings from the efficiencies that the transformation would allow. It would be impossible to bind an internal team to such a commitment.

To help the Vendor deliver this benefit the outsourcing contract was designed to be output based. This meant the vendor would deliver specified and agreed IT services to the Agency, around which the commercial transactions would be organised. Although these services would be based on clearly documented processes the Agency would not be involved in how those processes should be built, provided specified legal and quality frameworks were followed (as would be imposed by health and safety rules or ISO9000 for example). The vendor would thus be

committed to agreed output and cost targets but had much freedom to decide how these should be delivered, allowing it to introduce knowledge and expertise from its wider practice in outsourcing.

Implicit in this structure is that as well as bringing its skills to the transformation phase of the project, the vendor would be engaged to operate the transformed IT system over a 5 to 7 year period. Throughout this period the prices that the vendor could charge the Agency would be charged for IT services by the vendor would fall in real terms. The objective here was to provide incentives; a successful transformation phase would be essential to allow the vendor to achieve the ongoing cost savings required by the Agency in the operating phase, while ensuring its own profitability.

Further, it was recognised that outsourcing offered the Agency a solution to skill acquisition and retention. Hiring and keeping skilled IT professionals in the Agency in a locally competitive labour market was difficult, a practical solution was to use day rate contractors with a high direct cost but low commitment in terms of employment rights and other benefits. These contractors had become established in parts of the IT team where although brought in as a temporary measure, difficulties in finding internal staff had led to their being in place, in some cases, for years.

Thus, where outsourcing began as a project that was strategic in nature, addressing the focus of activity of the EA as a whole, it was implemented in a way that aimed to provide a set of more tactical solutions to specific IT related business problems of capability, cost and skills. This shift in objectives brought about an explicit link between functional improvements created by IT transformation and committed cost saving benefits. It also led to a contractual structure that gave incentives to the chosen vendor based on its successful realisation of this link.

4.2.2 Supplier and scope selection

The idea of outsourcing IT was conceived around 2006. A period ensued during which the detailed requirements for outsourcing were agreed and potential suppliers found. Procurement policies for agencies were set by central government and these were followed; this initially brought in around 60 potential suppliers, helped by events

the Agency organised to communicate itself as an attractive outsourcing prospect. This number was eventually reduced to five, then three serious contenders who were each asked to make proposals in what is known in procurement policy as a negotiated procedure.

The three candidate suppliers were each large outsourcing specialists that operated on a global basis. During 2009, the Agency worked intensively with them to agree a detailed specification of the scope of the outsourcing. This allowed the suppliers to reach best and final offers against which the successful supplier (referred to henceforth as 'the Vendor') was selected and announced in November 2009. A seven year contract was agreed, expiring in 2016.

In the announcement of the outsourcing contract, the following services were listed as included in its scope: Hosting services, Application Operations and Maintenance, Service Desk, Desk Side Support, Network Services and several cross functional services such as Disaster Recovery, Governance, Security, 3rd Party Management, Project and Service Delivery Management, and Quality. Thus the contract covered much of the day-to-day operational aspects of IT but did not include the more strategic function, of IT architecture planning nor the knowledge intensive function of IT application development.

4.2.3 Implications of the outsourcing objectives for longer term innovation

Starting the outsourcing project with an initial focus on its transformation goals may have been a reason behind the vendor not becoming involved in the Agency's innovation processes until recently. Innovation was not a priority for IT management in the early years of the contract, their key objective being a successful and timely transformation of the IT estate along with achieving reliable delivery of the newly outsourced IT services to the wider organisation.

The transformation project turned out to be more complex than expected, leading to a prolonged delivery period. Addressing the problems that caused this commanded attention from both sides in the first years of the agreement. This in turn delayed the

turn of management focus towards exploiting the wider benefits the vendor might offer in the more strategic area of innovation management.

4.3 Development of the relationship between the Agency and the vendor

The relationship between the Agency and the chosen outsourcing vendor developed across three overlapping phases. Initially there was a period of preparation leading up to the actual implementation of the outsourcing, then the relationship was driven by the establishment of the new arrangements and the agreed transformation project, finally the relationship entered a mature phase in which it stood when data for this case study was collected. These phases will now be discussed in detail.

4.3.1 Preparation

This initial phase started as the two parties began to interact over the design of the outsourcing relationship and ended with the transition of around 300 IT staff from the Agency to the vendor in 2009. During this phase formal agreements were formed and negotiated. Expectations were also set in the two organisations around how the subsequent formal relationship would work.

The Agency prepared itself for the transition of staff in a careful way. 18 months before the final date of transition, the people affected were moved to a separate team. Management processes, including a simulated financial system, were set up to simulate as closely as possible the form of arm's length working that was expected after outsourcing. The people who would be affected carried on working in the Agency's offices and remained in the Agency's employment during this time.

This interim transition was seen to be very beneficial. For the people involved, it reduced the uncertainty and anxiety that would be associated with the enforced move from one employer to the other by creating, well in advance, a working situation that would endure after the move. For the wider IT organisation, led in this case by the retained services management team, it gave a chance to become familiar with the new way of ordering and costing IT services that outsourcing would bring and the changes in practice they would need to develop for the new situation. The interim organisation thus reduced the risk of operational and commercial problems arising through mistakes and misunderstandings at the actual time of transition.

Another effect of this interim phase was the identification and elimination of work that had been done on an informal basis in the past. The enforced remoteness of the team from the remaining internal IT organisation got in the way of the casual requests for work that avoided formal processes and that plague IT management in all organisations. This elimination of what was described as a 'grey economy' of IT activity also gave the Agency's IT management a more accurate view of the real amount of work needed to run the IT estate.

The interim phase was followed by a 'mobilisation' phase in which the transferred teams remained unchanged but managers from the Vendor took over leadership responsibility. This allowed the Vendor to build more detailed understanding of the actual processes and routines in use, in preparation for bringing these under their full control. The vendor also started to implement a process of knowledge capture from the transferred staff, using this to assure greater resilience and eliminate the single points of failure that might be based on individual skills and knowledge.

4.3.2 Transformation

As discussed above, the Agency agreed a transformation programme that the Vendor would implement at the start of the contract period. This aimed to rectify a period of relative underinvestment in IT by the Agency before 2008 which had left it with an IT estate that was described as 'antiquated'. The transformation would involve the upgrading of outdated hardware and software infrastructure that would lead to the creation of a more robust and better supported set of internal IT services. By transferring responsibility for delivery of these services to the Vendor, the Agency would also get higher levels of service reliability supported by the hard contractual service commitments that are not possible to achieve in a fully insourced operation. The Agency agreed to pay the Vendor for its work on the transformation project and make required capital investments in new IT assets itself, meaning that risk was shared between the parties.

From the Vendor's perspective a return on the transformation investment would be secured in the form of lower long term operating costs. These savings would complement those from increased operating efficiency to support the Vendor's

commitment to ongoing reductions in the service cost charged to the Agency across the period of the contract.

The implementation cost of the transformation was estimated by the Vendor during the initial negotiation period and then fixed in the contract. The Agency realised (through the 'open book' accounting agreement between the parties) that this estimate was too low, despite not being the lowest of the offers received in the competition between vendors to win the Agency's business. Hence the Vendor risked emerging from the transformation programme bearing a cash loss, a risk that did turn into reality in this case.

A planned loss like this can be seen as an effective additional investment by the vendor in the transformation, and in winning longer term profits from the 'run' component of the outsourcing contract. Although the Vendor's management accounting and control policies are unknown in this case, this might create a need for it to achieve additional savings in operational cost if the overall targets for the integrated (transform and operate) contract are to be achieved.

The transformation phase took longer to complete than was anticipated by either party and than was set out in the contract. A factor that contributed to this was the need to run old and new systems in parallel for a time to maintain service to diverse user groups. This created a situation where small operational problems frequently occurred. The unexpected length of the project brought about a series of problems in the relationship between the Agency and the Vendor, as the full delivery of expected transformation benefits was delayed. Alongside this, it became apparent that in some ways the processes the vendor initially used to deliver the agreed IT services did not match the Agency's needs. This led to perceptions among the Agency's IT users that outsourcing had delivered a slower and more costly IT service than before.

4.3.3 Maturity

As the transformation programme has come to an end, the overall relationship between the Agency and the Vendor has entered a mature phase. Working relationships have become established and the two organisations have come to

know what to expect from each other. The benefits of a more resilient and cost effective set of IT services are starting to be seen.

However, the prolonged transformation programme means that this mature phase to the relationship has only been reached in the fourth year of a seven year contract, a time at which attention is turning to the next phase of the Agency's outsourcing strategy. This will be in place by 2017 but agreements in the existing outsourcing contract allow the Agency to move specific services to new vendors if it chooses so to do before that date. Changes to Government policy for the sourcing of IT services affect the Agency's choices about how to proceed after the ending of the current contract with the Vendor and specifically disallow a continuation of the contract in its current form. This policy does not forbid the Agency from forming a new relationship with the Vendor, but requires the scope of any new relationship to be reduced compared to that which currently exists.

The inevitability of change hangs over the relationship in its current phase. This brings uncertainty over longer term working relationships between the Agency and the Vendor that inevitably affect the further development of the relationship in its current contractual structure. Any investment now made by the Vendor in innovation, new skills or changed operating routines must either generate a short term return or bring it a benefit in the contractual renegotiations that are coming up. Equally, the Agency is unlikely to make changes to its current knowledge base, by relying more on the resources of the Vendor through further outsourcing, when it may need capable internal resources at hand in a future operating situation.

4.4 Innovation in the Agency

This section discusses the importance of IT innovation in the Agency and the relevance of this for its outsourcing objectives.

4.4.1 How innovative should the Agency be?

There is an internal debate about what innovation means for the Agency and the role that IT plays in this. Specifically, a question is asked about how innovative the Agency should be compared to private sector firms.

On one side of the debate is the perspective that the Agency should aim for efficiency and should innovate only as far as required to maintain and improve this. This is driven by a paradigm that views the success of the Agency to be driven by its ability to deploy people to address the problems it needs to solve. In this 'bobbies on the beat' perspective, the best solution to operating problems is seen as coming from more labour - not more innovative ways of using labour. So instead of looking for a new way of performing a task, in response to growing demand, there is a simple need for new resources to perform the task in the same way as before.

On the other side, a more opportunistic view of technologically driven innovation exists. This holds that the use of new technology or the development of different ways of working enabled by IT can create opportunities for spending resources more efficiently or for saving on resources. It also recognises that emerging technological tools (like tablet devices and cloud based services) offer the potential to transform the Agency's work in a number of areas, even if specific project examples are only beginning to emerge..

Such opportunism is not strongly reflected in the Agency's planning processes. Through its annual budgeting process, the Agency actively manages the 'bottom-up' planning, prioritisation and selection of investment projects, including their IT components, as well as investments in dedicated IT projects with wider organisational benefits (like system upgrades). There is however no consistent, organisation wide process in place for identifying, developing and assessing 'top-down' innovative ideas that could lead to project opportunities for creating major change.

Both the Agency's IT team and the Vendor recognise the importance of innovation and seem to sit on the 'opportunistic' side of the innovation debate. They have experimented with a number of initiatives to encourage innovative thinking around technology application across the Agency. These have involved setting up

discussions with some internal client departments at management level about their innovation needs and introducing ideas from the Vendor about how technology can address these. Alongside this, potential technology users at a working level in the Agency have been involved in meetings with internal IT experts and latterly people from the Vendor with the aim of developing specific technology application ideas. These initiatives explore different levels and means of collaboration that can lead to innovation. These mechanisms however are not institutionalised as parts of the process fabric of the Agency and the Vendor.

4.4.2 Relationship of innovation strategy to outsourcing objectives

The debate over the Agency's approach to innovation and the current absence of institutionalised innovation processes is relevant to its objectives for outsourcing and the way that outsourcing is managed now and in the future. The organisation's perception of its needs for innovation can directs the hard and soft objectives it sets for its IT outsourcing policy.

There are two poles in the debate that are useful to consider. At one, there is a view that the Agency is inherently non-innovative and recognises no need to change its operational model other than incrementally would be a poor match with an innovative outsourcing partner – at worst it may restrict the outsourcing partner from making the innovations that it needs to make to secure its own (possibly contractually agreed) performance goals. At the other pole, a view that innovation is critical for the future effectiveness of the Agency in responding effectively to its stakeholders' needs will cause it actively to seek contributions from outsourcing partners and other suppliers in collaborative development of innovations. This quest for collaboration would be reflected in both the hard agreements with partners and the attitude taken to their relational management.

This views expressed by IT management in the Agency suggest that it is not at either pole, rather there is a range of individual opinion on the question. This is possibly a reflection of the absence of institutionalised innovation processes. In this quite fluid situation, any intentional or accidental downplaying of the importance of IT based innovation, risks discounting the positive or negative influences of outsourcing on IT

effectiveness and the potential value of the vendor's knowledge resources. This might push future objectives of outsourcing towards cost reduction and quality improvement and away from knowledge acquisition and innovation. It should also be recognised that an important external factor in the Agency's case is its need to comply with central government policy, where a different and probably more generic view of innovation needs will be found.

4.5 Involvement of the outsourcing vendor in innovation

This section discusses the how the Agency and Vendor collaborate for innovation. It describes the intended process, analyses the barriers that have been encountered in implementing this and discusses the solutions that are being put in place.

In the outsource contract it was agreed that the vendor should contribute to the innovative development of the Agency. In this agreement the nature of the innovation the vendor should provide is partly defined, partly left open. The defined contribution would be in the form of new ideas and approaches aimed at supporting the development of the information technology assets the Agency uses, or might use in the future. Before the start of the relationship, the Agency believed that the Vendor's skills and wide range of experience, especially with other public sector clients, would bring improvements to their ability to innovate through this mechanism.

At the close of the transformation project, which as discussed earlier, happened much later than was initially expected, it was felt within the Agency that the vendor had failed to deliver on this part of the agreement.

However this view is somewhat mitigated by questions that have developed as the relationship has entered its mature phase. First, how realistic was the expectation of scope, depth and originality of innovation that the vendor should deliver? Second, had the Agency allowed conditions to develop in which the vendor could effectively contribute its innovation skills? Third, how well do the vendor's internal processes support its ability to contribute to the Agency's innovation needs? Finally, does the existing outsourcing contract provide adequate incentives for the Vendor to be really innovative? These questions are considered in more depth below.

Realism of expectations:

Expectations about the innovation that could be expected from the Vendor are tempered by concerns about the extent to which strategic thinking can be delegated to an outsourcing partner on behalf of the Agency. Innovative ideas that, if adopted,

might represent important changes in the Agency's strategy are seen to be primarily the responsibility of internal staff, not an external party like the Vendor. This view is founded more on an assessment of how feasible it is for a vendor successfully to take on this role than on reluctance to accept external ideas. The vendor's ability to innovate is still wanted, but in support of specific problems or challenges that are originated within the Agency itself. These could come from management across the Agency and from innovation teams in the operating departments and the central IT function. The need for processes and organisational structures to specify challenges and to manage the subsequent dialogue with the Vendor is recognised as these are at present immature.

Conditions for innovation:

The conditions for appropriate innovation by the vendor are acknowledged to have been difficult although both parties are now working actively to change this. The Agency's IT team has hitherto acted as a buffer between the vendor and internal business managers. This has prevented the vendor from seeing and understanding how IT is used in practice. Isolating the Vendor in this was has limited its ability not only to be proactive with ideas for innovative improvements but also to react in a credible way to any needs for innovation that are recognised. The problems caused by the isolation of the Vendor for its innovation activities are now recognised and both formal and informal structures are being put in place to address these. There is however still doubt about how well a less controlled collaboration between the Vendor and internal business managers will lead to positive results for innovation compared with a situation where collaboration is more positively guided by the Agency's IT specialists.

Vendor processes:

The Vendor has a series of internal processes for controlling work done on behalf of their clients. These generate work orders which must follow an internal approval process. The process is not transparent to the Agency and is perceived by both parties to be cumbersome and time consuming. As such, the Vendor's internal processes do not support its acting in the agile way that might be wanted to support innovation.

Vendor incentives:

The incentives for the Vendor to be innovative are limited and restricted by other provisions in the contract and the commercial structure of the relationship with the client. An example of this is the way the Vendor's service charge is set. In part, this is linked to the number of specified items (such as servers and IT applications) in use by the Agency meaning that any efficiency driven initiative by the Vendor to reduce these will damage its revenue and profitability, at least in the short term. Another example of ineffective incentives is the project delivery process. The contract specifies this in a way that allows the Agency to manage strong cost control but does not provide the agility that would be needed in an effective end-to-end innovation process where there is a degree of uncertainty in the outcome.

Summarising this, two overall problems seem to exist with the processes that allow the Agency and Vendor to collaborate in innovation. First, it is difficult for the Vendor to achieve a sufficiently detailed understanding of the Agency's problems that would allow it to contribute to innovation. Second, there exists a set of agreed management routines that, although well intentioned, interfere in the efficient execution of innovation projects.

To circumvent these problems, the Agency and Vendor are experimenting with a new approach to innovation that brings it into the Agency's process fabric more strongly than the existing initiatives discussed above. In this, experts from the Vendor have been placed in a single team along with their equivalents from the

Agency's IT team, based in a single location. This joint innovation team is given problems and asked to come up with innovative solutions. As such it represents a resource in a predominantly operational organisation where space for innovation can be created. The team is intended to present itself as a single entity to the Agency, shortening the communication distance between the Vendor and the Agency's internal business managers and creating managed collaboration.

Freedom from the Vendor's approval processes is created by engaging the Vendor's people into the team on a time and materials basis, the Agency paying for the hours they spend on the team without specific tasks or output being agreed in advance. The formal processes are resumed as defined projects emerge from the innovation phase.

This creates some risk for the Agency's IT management as money is being spent without any guarantee of outcome, however this is considered acceptable in exchange for the benefits of increased collaboration and faster progress with innovation. Also, using the output from this joint innovation team to create timely and well specified projects, that use the processes defined in the existing contract, will benefit both parties. The risk of project failure taken by the Agency is reduced while the Vendor benefits from the higher profit margins brought by increased project activity.

As the Agency shows commitment to the innovation process by taking up-front risk, evidence has begun to emerge of a more effective contribution by the Vendor to innovative thinking, in line with the original contractual obligations of the vendor towards development of IT assets.

4.6 Implications of outsourcing for competence development in the Agency

IT outsourcing calls for the client organisation to develop a set of new competences, as well as to hand over others to the chosen partner. The partner must also work out how its existing competences match the needs of it client. This section discusses how this has happened in the developing relationship between the Agency and the Vendor.

4.6.1 Technological competences that support innovation

The Agency's IT outsourcing was designed in a way that requires it to retain a degree of technology and system knowledge and thus relevant management competence. Three specific areas stand out: management of the enterprise architecture, application development and the collaborative ability to translate specific business requirements into technical solutions. Each is discussed in more detail below:

Enterprise architecture:

Under the outsourcing agreement the Agency is responsible for enterprise architecture, the way that IT systems and processes combine to deliver business requirements. In the retained IT organisation, enterprise architects work in a team along with innovation consultants and solution architects. Part of their output is long term roadmaps showing how IT will support the developing requirements of each of the Agency's business units in the long term. These are used to make an overall IT strategy for the Agency. Through this the competences for defining the future strategy and setting direction for the Agency's IT capability sits squarely within its own organisation. Further, this is a consequence of intention rather than failure on behalf of the Vendor.

Holding the enterprise architecture role means that the Agency retains a strategic competence in IT planning which has not been affected by the decision to outsource.

Application development:

The Agency also retains a competence in application development, held in an internal team of software engineers. This gives it clear insight into and knowledge of individual IT applications, especially those that are highly bespoke to the Agency's needs. A choice exists between using these internal resources or asking for resources from the outsourcing Vendor or other suppliers to fulfil specific project needs. This choice is driven by perceptions of supplier cost relative to internal cost and the level of customisation, calling for understanding of the Agency's specific needs, that the project requires; projects on applications that rely on generally available, 'off the shelf' capabilities are directed towards the outsourcing Vendor.

Major IT projects may be managed in a different way, using specialist system integrators. As the larger projects often involve a number of government agencies and departments working in collaboration, this approach is justified. Here the Agency's internal knowledge resources are important for supporting detailed integration decisions and risk management. The outsourcing Vendor is likely to play a limited or supporting role in these projects.

IT outsourcing has therefore created more options for the Agency for how the competence of IT application development can be managed. Some skills in this area are now held by the Vendor, some are retained. The retained skills are justified in the current mode of operation and are useful when input or direction setting for major IT projects is needed. They also provide a means for the Agency to retaining important knowledge across transition to new outsourcing vendors in the future.

Solution definition:

The IT department in the Agency sits organisationally between the Vendor and the Agency's internal users of technology. In this position it is responsible for collaboratively understanding business requirements and translating these into specific technology projects. The responsible team works with business users to understand how requirements for change or for development of the Agency's activities can be reflected in patterns of work and their supporting IT systems. An example of this would be planning how systems might support the implementation of

a change in government policy. Systems changes or new systems are then designed and projects are initiated.

The role of the Vendor in this area is changing. As discussed above, there is a view that the Vendor can only be effective in meeting its objectives for innovation if it can build a closer understanding of user needs. The collaborative team that has been set up to explore a new way of working may need to develop competence in solution design in parallel to existing processes until a new overall innovation process is established.

4.6.2 Outsourcing governance competences

With the decision to outsource a large part of its IT function, the Agency implicitly accepted a need to boost its competences in vendor management and governance of outsourcing. In part this was achieved by bringing together a senior IT management team in which members brought direct experience of outsourcing or multi-sourcing in different contexts. Alongside this, a demand organisation was created to handle the commercial and service activities needed for effective outsourcing management. Two strands of governance competence can be identified here and are discussed below: the ability to make and manage effective contracts and the ability to create effective managerial relationships with the Vendor.

Contractual governance:

In the preparation phase for outsourcing a disciplined process, mandated by government, was followed for the selection of the vendor, the documentation of the content of the outsourcing arrangement and the agreement of commercial terms. A requirement within this for open book accounting gave the Agency a detailed insight into the potential vendors' cost structure and sources of profit. This process was detailed and time consuming but resulted in a clear understanding on both sides of the commitments involved in the outsourcing before the activity itself was started.

To maintain this understanding as the contract runs, a detailed governance structure is in place requiring regular formal interaction between the Agency and Vendor to

review the status and performance of the services it delivers. This interaction takes place at multiple management levels, reaching the top of both organisations.

In running the relationship, the Agency has followed an organised and disciplined approach to tracking and applying commercial agreements. It sees itself as an intelligent customer in the area of service procurement, taking a proactive management role with the Vendor based on the strong retained team in its own organisation. It believes that the level of scrutiny it applies to the Vendor's services and the charges made for these is more rigorous that would typically be applied in a public sector organisation.

A negative consequence of this strongly contractual approach has been an increase in risk aversion by both the Agency and the Vendor, especially at the lower management levels in each organisation. Agreements which allowed room for pragmatic interpretation have instead been rigorously followed leading to dispute and delay, a factor that was especially evident during the transformation project.

Relational governance:

The strong contractual management competence in both organisations has affected the way that softer, relational governance competences have been allowed to develop. In day to day operations, issues that arise tend to be resolved commercially by reference to the contract, a time consuming and frictional process. In what is described as a relationship relaunch, efforts are being made to encourage dispute resolution between operational managers without reference to the commercial team. More strategically, IT management in the Agency expresses a view that effective development of the outsourcing relationship is in some ways obstructed by the presence of the contract and the strength of the agreements in it.

Despite this background, IT management in the Agency are positive about the attitude and professionalism of their counterparts in the Vendor. A series of incidents where the Vendor needed to take action in an emergency, requiring activity that was outside the immediate scope of the contract, is often mentioned in support of this. Also, the completion of the transformation project and the resolution of the

many commercial issues it created is seen to have led to more delegation of authority within the Vendor, improving relational effectiveness.

Taking a wider perspective on the effect of IT outsourcing on the effectiveness of the Agency as a whole, the position of the retained IT team as a buffer between business users and the Vendor has made this relationship largely transactional. This has prevented until now the development of relational links that could stimulate innovation, or ideas for change in the relationship between the Agency and the Vendor that would make innovation more likely. This has been recognised on both sides and experimental initiatives are beginning that aim to address this.

4.6.3 Human resource competences

The loss of many staff who were moved to the vendor at the time of outsourcing may have longer term consequences for human resource management in the Agency. Specifically the ability of the Agency's IT team to manage succession in its remaining, yet critical, technical functions.

In the areas directly affected by outsourcing some senior staff were retained after the transition to manage the relationship with the Vendor. However, at the same time, the lower management layers in the hierarchy were depleted. This poses a longer term problem of succession management as the IT organisation now lacks the numbers of junior staff that can provide a feed for succession into more senior positions as their occupants move on to other roles or retire.

This could force the organisation to look externally for senior recruits as vacancies for these occur. This process is seen as expensive, cost being incurred both in the recruitment activity itself and in the longer introduction time needed by external staff. However talented these individuals might be in the IT field, they have no experience in the tacit mechanisms operating in the IT organisation and the wider business of the Agency.

4.7 Vendor perspective

This section of the case study describes the Vendor's view of the IT outsourcing situation at the Agency. In it some of the items already discussed are revisited from the Vendor's perspective.

4.7.1 Background to the Vendor

The Vendor is a large international IT services firm with a significant practice in the UK public sector. It recognises that its clients see it as a source of expertise and practical experience in a range of relevant technology fields. The implication of this is that the team it puts into a client operation must be capable of looking beyond that client's immediate operational needs to a wider, developing technological world in which it is seen to have practical and relevant experience.

This position is substantiated by the Vendor's set of alliance partnerships with major, global IT firms giving it early sight of new technologies as well as a strong buying position. It has also developed a 'co-innovation' techniques that allows it to work with jointly clients to develop applications for the latest leading edge technologies.

4.7.2 Background to the contract with the Agency

The Agency's initial aim for this first generation outsourcing project was to transform an IT estate that was not in the state needed to support the Agency's developing needs. For this, it was recognised by the Agency that the services of a significant large external partner would be needed. The outsourcing of the IT operation in a long term contract was an incentive that encouraged the Vendor to take on the initial transformation project. In this way a commercial agreement was reached that was initially satisfactory to both the Agency and the Vendor.

In general, the Vendor aims to build operating efficiency into the IT operations it takes over under outsourcing agreements. These efficiencies are taken into account in its internal planning allowing its margins to increase as well as returning savings to its client. As well as the margin benefits coming from efficiency, the Vendor has the

potential to make margin on the delivery of change projects which are needed by the client during the contract period but which are not initially planned.

In this specific case, the Agency's transformation project took much longer to complete than was envisaged because it was far more complex than had initially been estimated. Despite this the Vendor has been successful in delivering the agreed cost savings to the Agency and to its other public sector clients. It is also committed to keeping its margins to a reasonable level and supporting this commitment with transparent open-book accounting.

4.7.3 The Vendor's role in innovation

The Vendor is committed contractually to helping the Agency with innovation but the contract does not specify precisely what this means. In part the obligation is met through maintaining a technology roadmap that directs the replacement of out-dated hardware and software assets. However, alongside this activity, which could be seen as part of any competent IT manager's innovation responsibility, the Vendor also should proactively look for opportunities to help the Agency use IT to achieve better outcomes, especially in terms of efficiency and has financial resources in place to support this.

This contribution to innovation has not been delivered well in the period from the start of the contract until recently, prompting a desire to see how different approaches can be used. One area of investigation is the engagement model used in the outsourcing relationship and how this allows the Vendor access to the end users of IT within the Agency. The Vendor recognises that it needs to build more detailed knowledge of the Agency's activities, such as would emerge from an understanding of what staff do day to day in the field. This is difficult to achieve in the current engagement model in which the Agency's internal IT staff sit between the Vendor and the end user community. Changing the engagement model needs management support from within the Agency, which has become available as trust in the outsourcing relationship has grown, but could be seen as a threat to the Agency's staff.

A second issue in developing an effective innovation process between the Vendor and the Agency has been the formal processes for the management of project work that were agreed between the parties at the outset of the outsourcing. This project commissioning process delivers strong controls that protect both parties commercially as well as from major technical failures that could be caused by poorly managed change to critical IT platforms. It is however too slow and cumbersome to deal with small scale innovation programmes that present no major financial or technological risk, especially those that exploit the capabilities of emergent IT platforms like tablets and cloud services.

To address these two problems, the Vendor and the Agency have set up the innovation team staffed by people from the two organisations but entirely funded by the Agency under agreed arrangements from the existing contract. The Vendor sees this as a very positive initiative, reflecting a higher level of trust in the relationship, but one in which a new model of risk sharing may eventually be wanted by the Agency. It could also offer the basis for a modified form of innovation, more focussed on end-user communities, that would move away from the current IT led model. This could generate smaller projects, simplifying the approval processes and thus shortening turnaround time, as well as being more compelling to the end users that would be involved. Hence development of this approach could significantly address the two issues recognised by the Vendor in the existing innovation model within the outsourcing contract.

A third issue is presented in the structure of the commercial agreement between the Agency and Vendor. This effectively rewards the Vendor for the size of the Agency's IT estate, a measurement in which the number of components in the IT estate is translated into monetary terms. Under this part of the agreement, the Vendor will lose revenue if the estate is simplified and rationalised through innovation. Hence to make large scale innovation and rationalisation attractive to the Vendor a potentially significant revision to the contract would be needed. This issue is recognised by both the Vendor and the Agency.

Thus the contract, while requiring innovation in one part, is structured in a way that does not financially motivate the Vendor to deliver it without some sort of revision to its terms.

4.7.4 Development of competence by the client

The Vendor proposes that individual behaviour is a key factor in successful outsourcing. Hence the key competence required by a client wanting to get the most value from IT outsourcing is the ability to work with the vendor to establish an appropriate set of behaviours in the joint team that the outsourcing will form. The Vendor recognises that the process of outsourcing can create negative feelings in the client organisation, these lead to unreasonable expectations of performance and eventually to conflict when these expectations are not met. Also, there is a risk that outsourcing takes away the empathy implicit in the organisational relationships of an integrated operation; putting an outsourced organisation under pressure feels less unreasonable than applying the same pressure to colleagues. Maturity along with experience of outsourcing in the client organisation are important factors in creating a climate in which the right sort of behaviour can be learned and practiced.

In this case, the Agency has matured in its approach over the period of the contract, shifting from one of enforcement towards one of co-operation. It now recognises that success is of mutual benefit; problems will occur but moving forward from these towards improvement is critical to this success. Client organisations that are able only to see the outsourcing vendor as a supplier are not going to get value from the relationship. Instead an approach based on partnership is needed and the Agency and Vendor are currently co-operating on how this can be achieved through the remaining years of the contract.

4.7.5 Governance of outsourcing

The Vendor views the contract as an extremely important part of the governance mechanism for outsourcing. The obligations agreed in it should be understood throughout the teams in both the vendor and client organisations. In this case the Vendor and Agency have set up a set of governance groups at different organisational levels going right to the top of the vendor's organisation, a structure that reflects the scale and importance of this relationship.

The relationships between individuals are important to shape behaviour and set vision but decisions that emerge from these must be reflected quickly in the agreed contract. These relationships are set up during the process of letting the outsourcing contract; the Vendor sees the interaction between its staff and those of the client in that process as an important determinant of the success of the ongoing relationship. Clients are also likely to choose to buy from organisations they feel they can work with, where a cultural fit is perceived. If this situation applies, the outsourcing will start with the potential for good relationships to be formed. To ensure this, the Vendor aims to involve the people who will deliver a contract in the letting of that contract.

Chapter 5 Case study 2 – The Bank

5.1 Background to the organisation

This organisation (referred to henceforth as 'the Bank') is a large and long established provider of retail financial services. Its business is primarily in the United Kingdom. It offers a full range of services to a large client base through high street branch, telephone and online channels.

In common with other organisations in this sector, IT is critical to its business. As they underpin the recording of transactions and customer balances, IT systems that are accurate, with high standards of auditability and availability are essential. The Bank therefore continues to make substantial investments in the capability and quality of its IT estate within which some major systems, like its core banking platform, have been replaced in the last five years.

While acknowledging the importance of IT, the Bank does not have a distinct IT department in its organisational structure. There is no individual CIO role. Instead the organisation has taken a decision to embed IT responsibility across its Operations group. Hence in this document, where IT is mentioned it refers to the function and supporting technology, not to an organisational entity.

In the UK retail financial sector as a whole and in the Bank specifically, operational risk appetite has fallen in recent years, largely because of high profile technology failures (although these have not been experienced by this organisation). These have heightened recognition both of the brand damage that technology failure can cause and of the regulatory consequences of this. The now prevalent use of social media quickly informs user communities about any failures that affect consumers' banking services. This in turn creates a situation where the reputation for competence associated with an organisation's brand will be damaged, even among those user groups that are not directly affected by the failure. In the financial services sector, reputation is important as it is a factor in consumer choice between competing organisations.

Incidents of technology failure has brought increased attention from the industry regulator to the risks these pose to consumers and to the UK economy as a whole.

The regulator now expects senior management in financial institutions actively to manage technological risks on behalf of their stakeholders.   This means that management must be able to explain and justify to the industry regulator how these risks are controlled, alongside the financial risk that is inherent in a lending organisation and, as with lending, be accountable for the consequences of any failure. The regulatory involvement has moved technology risk management firmly on to the organisation's board agenda.

Despite such increasing risk aversion, there is an ongoing drive for IT innovation. In its annual report the Bank comments on the need for digital services that meet the quickly changing expectations of some clients while respecting that other clients will prefer more traditional branch and telephone based contact. This strategy creates a need for innovation in the digital area while maintaining quality and consistency across the widening range of client interfaces that such innovation brings about.

The Bank is in a strong financial position. Its cost/income ratio, a statutory measure of operating efficiency in the sector, is strong relative to many competitors and falling. Despite this, the Bank is seeking further efficiency. One area of attention is the transformation of its IT system through outsourcing to high quality strategic partners. There is a programme of activities relating to this that is managed at Board level and that has a published annualised cost savings goal.

5.2 Background to the IT outsourcing decision

5.2.1 Outsourcing objectives

The objectives for outsourcing are strongly influenced by the inherently conservative nature of the Bank. Although its IT outsourcing project might be seen as straightforward through a financial services industry lens, internally it was seen as a radical and potentially risky strategy. Hence, while the most significant objective for the outsourcing was the reduction of technology risk, the transition to the outsourced state also needed be as low risk as possible if the project was to gain internal support.

The Bank recognised two factors as important in the management of technology risk: access to the right level of human resource and quality of the delivered systems. Outsourcing was seen as a strategy that could deliver both of these.

Human resources with the required type and level of knowledge exist in the major outsourcing vendors, especially as a result of their ability to access large IT labour markets in India and other developing economies. Despite its size, the Bank had previously struggled to recruit and maintain a solid skill base based in its UK offices, leading to poor continuity of resource and 'key man dependencies' in some critical areas.

From gaining access to the vendor resources, it was believed that operational quality could be improved by outsourcing and continuity risks reduced. Transition of development and support activity to outsourcing vendors would force consistency into the documentation of system capabilities and support processes. The need to manage formal relationships with the vendors as opposed to the softer, internal relationships that existed before, would put focus on quality of service. The creation of contracts would give real force to service level agreements and service penalties, a situation that is impossible to achieve within a single organisation .

After risk management, the second priority for IT outsourcing was to create more agility in the IT system that the Bank was using. Agility is difficult to measure but is generally assessed by the time it takes for new ideas to be developed and released.

This 'time to market' for new products and services, in the UK's competitive retail financial services environment, is seen as an important factor in driving the Bank's competitiveness.

One part of achieving agility is also having access to the right resources at the scale needed as mentioned above. Before outsourcing, the Bank would experience cost and management problems when it needed to scale up resources quickly for large one-off projects. This would typically result in the hiring of day-rate contractors, a massive and costly recruitment effort as hundreds might be needed. Outsourcing vendors were seen as a solution to this problem as they maintain large internal resources which can be efficiently deployed across the development projects of their multiple clients. This resource base potentially offers their clients easier access to specialist skills and knowledge when this is needed, taking the project based recruitment problem away from the client.

Cost management and reduction was the third factor behind the decision to outsource. The Bank has a long term programme for the management of costs and the management of IT costs through outsourcing is one component of this. Across ongoing and foreseen development and operation activities, outsourcing was planned to bring more control over resourcing costs and a lower resourcing cost overall. Three factors would contribute to this cost reduction. First, the more stable workforce of the vendor would replace parts of the unstable, contractor staffed workforce that the Bank was using before outsourcing. Second, the vendors would introduce a large element of labour from India, a labour market the Bank had no ability easily to access itself. This would realise the benefits of the offshore 'labour arbitrage. Third, as mentioned above, the costs of scaling up to deal with large projects as these came along would be reduced.

The Bank's outsourcing approach balanced these three factors of risk, agility and cost in the specific sourcing decisions that were made. It was decided for example not to follow the lowest possible cost strategy because the risks of this were seen to be too high. Avoidance of operational risk, and the need possibly to justify supplier selection to the industry regulator in the event of some unforeseen future incident, was material to the selection of high quality 'tier 1' partners and the relegation of cost considerations behind this.

5.2.2 Supplier and scope selection

Around 10 years before this research was completed, the Bank made initial attempts at outsourcing two specific areas of its IT activity. These were perceived as unsuccessful, possibly because of failure to transfer knowledge to the partner at the time. Hence for this project, before possible vendors were selected, the scope of the services to be outsourced and the plan for transition were each carefully designed. The scope was based on 12 development centres, each one set up to address a specific function of the overall IT system. These were designed to provide a framework for the effective partitioning and sourcing of services as the transition to outsourcing proceeded. (This development centre concept had been used in the Bank before the outsourcing project began. However, before the current outsourcing project started this had been abandoned in favour of a practice based model which was not seen to be a success.)

A vendor, to be named as a 'strategic partner' would be selected for each development centre from an approved panel and contractually retained for a defined period. The panelling method allowed the decision on the partner's potential fit with the Bank to be separated, at least initially, from the decision as to specifically what services that partner would be called on to deliver. Some partners have won contracts in multiple development centres resulting in around 6 major relationships being in place at the time of research. The existence of the panel has also served to create competitive pressure on the partner chosen for each centre as that partner is aware that at the end of its contract others are waiting to take over should the Bank not be satisfied.

Each strategic partner is responsible for development activities within the scope of the development centre as well as the ongoing support of the relevant IT applications that exist or are developed during the contract period. This reduces (but does not eliminate) the role of the Bank in brokering between change and operational activities. It also encourages the building of knowledge links between the development and support functions inside the partner's organisation which are helpful for effective innovation and application development.

Initially, a well priced agreement was made with each partner by using external consultants who specialise in this type of outsourcing negotiation. Thus an important part of the detailed work in procurement of outsourcing is itself outsourced. The consultants step in with support for negotiation by providing benchmarking data. Also, by acting as negotiating agents, they provide a weight of negotiating power that is only needed occasionally by the Bank and which could not justifiably be permanently retained.

The choice of a relatively large number of development centres as the basis for sourcing allowed the Bank's full transition to outsourcing to take place over a prolonged period of time. This was deliberately intended to reduce risk, albeit at the expense of higher legacy costs incurred in the parts of the former organisation that are retained for longer. At the time of research the contractual arrangements for the final development centres were being concluded, around three years after the first centres were outsourced.

The outsourcing project did not involve a large scale transfer of staff from the Bank to the chosen partners. One reason for this was the shift of much of the IT work to the partners' centres in India, another was the presence of a large number of day rate contractors in the Bank's IT teams. Instead of transfer, Bank staff from the legacy IT team were either selected for positions in a retained IT team, redeployed in the Bank or accepted redundancy terms.

5.2.3 Implications of the outsourcing objectives for longer term innovation

The need for innovation, especially in the area of new digital services to meet the changing needs of its customers, is clearly expressed by the Bank. However there is little evidence that satisfying this innovation need was an important objective of the outsourcing project. The contribution of the partners' resources and skills to innovation via the leading objectives of risk management, quality improvement and cost management as described above is however clear.

Formally, the agreements with the partners feature commitments to innovation. These may be in the form of hard contractual agreements to set up jointly controlled innovation funds, or softer aims around idea generation and early stage development

of these. The partners are also encouraged to be innovative in the way services are delivered as a consequence of their commercial commitments to quality and productivity improvement. This creates a *de facto* shared improvement objective driven by innovation; operational innovations drive quality improvements for the Bank's customers, these in turn drive down incident volumes, drive up efficiency and improve the partner's profit.

5.3 Design of the outsourcing structure and transition towards it

5.3.1 Management structure for outsourcing

The outsourced IT functions and thus the strategic IT partners, play a significant role in the support of the existing and new IT services that the Bank relies on for its daily operations as well as in the development of technological capabilities that underpin its digital strategy. To control this, a management structure has been designed to direct and monitor the activities of the strategic partners and to provide the link between their knowledge base and that of the Bank. In this structure the Bank has a set of 'retained' IT teams that interact with the partners, these are staffed by people from the former IT organisation as well as external recruits.

The retained teams are split into specific practices that reflect in part the structure of the operational organisation before the outsourcing took place. A Programme Architecture practice supports the high level design of IT systems and retains a link between the target and actual IT architecture of the Bank. Technical Practices include subject matter experts (SMEs) covering the major systems in use and are responsible for all high level design work, for setting coding standards and processes or exceptionally to review code provided by development partners. There is a Business Analysis practice to shape project design, a Project Management practice and a Test practice to supervise the work of the development partner in the testing centre. Quality assurance is performed by the retained team although as knowledge about specific systems builds up with the strategic partners it increasingly turns to the relevant partner for quality assurance expertise. An Application Support team is responsible for partner activities in maintaining performance of the live operational systems and for the capacity, service and operational risk management that these systems require.

IT development activity is organised within a set of programmes that each include a number of projects. These programmes are aligned with various internal clients and with the Bank's overall development priorities as set by its Board. The programmes effectively represent the commitment for capability change that the technical group has made to the Bank as a whole.

Newly developed capabilities that are sourced from the strategic outsourcing partners are related to the development centres for which each partner has responsibility (a vendor may have a contract for more than one development centre). In many projects the Bank's needs are provided by capability from several different IT platforms, hence the contributions of a number of relevant development centres need to be integrated. The primary responsibility for the design, planning and subsequent integration of delivery sits with the retained project management team and subject matter experts. Another level of technical integration between the development centres is provided by the development centre with responsibility for testing. This interfaces with the others involved in each project to ensure that the required end-to-end service can be offered as specified.

From a control perspective, resources in the development centres are allocated to projects that sit within the programme structure recognised throughout the Bank. This creates transparency and a degree of accountability. If there is more demand for development resource than can be satisfied at any one time, priorities are set by the heads of the project management team based on the overall business case for the project and the strength of its alignment with the Bank's corporate strategy. If an agreement on resource prioritisation cannot be reached at this level an escalation through the Bank's management structure is possible, this rarely if ever happens. A further level of structure and transparency is provided by an IT release schedule in which a clear timetable for completion of project work is set out.

5.3.2 Transition to outsourcing - moving beyond simply a sourcing strategy

The strategic outsourcing partners were chosen for their ability to offer the quality of service needed by the Bank. They would also bring reduced costs, although as stated above this was not a primary driver of the outsourcing decision. To deliver both these benefits the majority of the IT development and support work was placed in the partners' high quality software and support operations that were already established in India. The introduction of the partners in a new relationship structure with the Bank, as well as the geographical separation of a large part of the operation from the UK base represents a profound change from the historical way of working.

A formal transition from the old situation to the new would ideally be managed in a way that balanced the need for speedy action (to reduce tension and uncertainty among the people in the retained team) with that for time to set up relationships and detailed working routines and to transfer knowledge from the legacy IT organisation to the strategic partners. In practice this has proved difficult to achieve although goodwill on both sides has prevented major problems from happening.

A number of behavioural and social issues encountered in the transition of the Bank's retained staff have been recognised and addressed. The roles of some retained staff have profoundly changed, bringing feelings of dislocation and discontent (this has been captured and tracked by opinion surveys). The turbulence of outsourcing, leading to the departure of colleagues and the fracturing of long standing work relationships was probably a factor in this. In addition, sacrificing control to external partners, even in exchange for improved access to resource and more reliable delivery, was an uncomfortable process for people grounded in a long established organisation of internal relationships with its own distinct and valued culture. People comment that a period of stability is needed during which these people can accept their new roles, recognise that the top down change process to the new model of working is now complete and that a stable situation has been restored. Management still needs to convince the people that change is over and so encourage them to base their actions in the new structure rather than look back to the old. This will allow new relationships and trust to be built with the partners' staff and give individuals on both sides the confidence to make local changes in practice or in degree of control that are too detailed to be handled in the existing higher level agreements between the Bank and the strategic partners.

Hence, if the full transition to the outsource model is seen as a journey, it is one that has not yet led to a mature operating situation. This is partly for the socially oriented reasons above, partly because partners for the later development centres have not yet been contractually agreed but also because the Bank has recognised that it must further develop its competences in third party management and co-operation.

After transition to outsourcing of the initial development centres started, it was realised that an approach based on sourcing competences alone could not achieve the full set of objectives the Bank had set for the programme. The Bank needs to

become much tighter and more disciplined than before in the way it works with its new partners if it is to get the best results from their knowledge, experience and offshore teams. What has been a sourcing programme has therefore evolved into a wider transformation of the way that change in the Bank's IT system is managed. The change process involves not only the IT work of developing and operating IT applications but also softer internal project processes. These have been recognised to include the way that the requirements for change are captured and managed, the evolution of application design through the lifecycle of projects and the subsequent support of applications in line with the needs of users.

The Bank is open to this further transformation although a challenge of retaining the skills required to carry it out in its own organisation is recognised (this challenge will be discussed under 'Technological Competences' in section 6.5). The Bank is helped by its open management culture which allows policy driven dogma to be avoided, there is no 'blueprint' of a required structural form towards which all changes must lead. Rather, there is an acceptance that different ways of internal working along with forms and processes of partner interaction must be tried out until an optimum position is reached. This allows the Bank to work out, along with its strategic partners, an ideal way of directing the cultural development and activities of its retained team as well as an organisational structure that combines the retained IT resources with those of the partners in the most effective way.

5.3.3 Development of the 'multi-sourcing' approach

The vendor panel that the Bank has set up intentionally creates a climate of competition between the selected strategic partners. The rolling schedule of outsourcing means that opportunities for partners to extend development centre contracts as well as new contract opportunities are always in view. Also, the existence of the supplier panel makes obvious the veiled threat of the Bank that new vendors might be admitted to compete for these services in the future. The partners are thereby encouraged not only to compete, but also to protect their individual reputations with each other through making the best possible contribution to those projects in which other partners are engaged. Displays of weakness are discouraged as these might open opportunities for competition to enter. The

complacency that can derive from incumbency over the period of a contract is reduced (but not completely eliminated as vendors who are both expert and well established can raise transition cost barriers to discourage competing offers). This system of mutual competition between vendors is a complement to both the contractual and relational governance mechanisms the Bank has put in place.

The climate of competition between the partners engaged on specific development centres is also a way of regulating and improving quality. Their desire to please through shared success encourages them reciprocally to manage the quality of delivered work and to seek solutions to problems with each other. This reduces the burden on the retained IT organisation to 'police' the partners' inter-relationships, a burden which would force more skills (and cost) back into the retained team.

Collaboration between the partners to offer a better end to end service to the Bank is encouraged. The risks of such collaboration being to its disadvantage are not considered high, perhaps because there are legal implications of which these 'Tier 1' organisations would be wary. More significantly there is the risk that discovered collusion against the Bank's interests would damage or break a long term relationship that is valuable to the partner, the vendor panel again serving to convince that the Bank is open to bringing in new vendors were this to be needed.

Virtual 'platform' teams have been set up to encourage collaboration between the strategic partners working on specified services. This recognises that multiple partners and their development centres are involved in delivering integrated services to the Bank's customers and makes it less likely that partners will direct blame at each other in the case of problems. This virtual, collaborative structure sits alongside a framework of formal operational review processes that is agreed in the outsourcing contracts. The aim of the virtual teams or 'platform forums' is to create an environment where all involved feel a sense of ownership and accountability for the end to end service, not merely for the performance of their own individual system element relative to its Service Level Agreement (SLA). The partners that have been involved in these teams are receptive to the approach even though it is not a contractual obligation. It might be possible to move towards more integrated SLAs, these involving multiple partners in a single agreement, but this idea has not yet been developed.

The Bank recognises the need to motivate its strategic partners, and that motivation must work at different levels within their organisations. Strong and positive individual level motivation, provided by the relationship climate between the partner and the Bank, will attract the best people from the partners' wider organisations, as these will compete to work on the Bank's account. At a country or business unit level, partners' overall accounts with the Bank must remain profitable and retain a positive outlook if interest and commitment from the corporate centre of the global IT players that the Bank has engaged is to be maintained. This need for a two-sided motivation approach is reflected in the attitude of the Bank to its contractual management of the partners. The contract is seen as a critical element of the relationship, but one that is a 'tool rather than a weapon' in relationship management. The Bank has been prepared to renegotiate elements of the contract making reasonable trade-offs when this is seen to be needed and to be of benefit to both parties. Further the discussions that lead to this are carried out in as open and positive a way as possible, creating the motivating relationship climate that gets the best out of the partners' people.

5.4 Innovation in the Bank

5.4.1 What is innovation in this case?

The Bank aims to project an image of innovation to its customers - the location of a public innovation lab in its head office lobby being a highly visible example of this. This reflects how the pace of change in the financial services industry has increased the importance of innovation capability that is both speedy and reactive. Becoming 'digital' is seen as a way of securing or protecting competitive advantage by responding to customer demands for new services and matching competitor moves.

The increasing abilities of the Bank's customers to use digital channels (through widespread access to personal digital devices) is an important factor in driving change. This has encouraged a gradual shift towards the digital delivery across the range of financial services the Bank offers, both by using the internet direct to a customer's home or mobile location and by providing digital tools that permit services to be offered more effectively in the existing branch network. As a consequence, customers increasingly access services in a range of different ways, meaning that consistency in service quality and delivery across channels has emerged as an important factor. For example a customer's balance must appear the same whether accessed at an ATM, by phone or over the internet. The Bank's internal perspective on innovation has a broader scope of activities than only those that are directly customer facing. This can range from the development of new programmes for digital service enhancement, through platform replacements that alter capabilities to smaller, incremental process improvements that increase efficiency and quality.

The Bank's conservative nature means that although innovation is important, it does not act as a 'trailblazer' in the delivery of services that are totally new to the market. Some competing institutions are seen as more aggressive and experimental with their innovation. This raises the importance for the Bank of having an ability to respond quickly and with high quality to competitor innovations that become successful.

The responsibility for understanding both developing customer needs and the offerings of the competition sits with the customer facing groups in the Bank. These groups must collaborate with the internal project management and technical

functions to plan and design solutions. Organising structures are in place that allow people from the customer and technically oriented teams to exchange information and reach conclusions on how banking service and technology can be combined to develop new customer offerings and modify existing ones.

To control and manage these different types of innovation across the Bank, change activities are clearly directed and aligned - at least at a top level. There are six investment themes against which priorities are set and specific projects created based on a vision of developing capabilities over a period of five years or so. These themes create a framework of links between the Bank's top down strategy, set at Board level and the strategies of individual business areas. The six themes also provide a strong basis for a clear innovation relationship with the strategic IT partners. The themes are publically evident in the offices, leaving little room for doubt around the Bank's objectives. They are displayed in posters on managers' office walls and are consistently recognised in discussions with staff.

5.4.2 The challenge of managing innovation in IT

As described earlier, IT plays a critical role in supporting the products and services that the Bank offers. Limitations in the capability of some mainframe based IT platforms were a barrier to innovation over many years, preventing the development of services the Bank regarded as important in its customer offering. This situation is now largely resolved following a series of major system upgrades and replacements that were completed prior to the outsourcing project and have provided a comprehensive set of IT based banking capabilities.

Despite this recent improvement in capability, service innovation is recognised as a complex and risky process among the managers in the operational departments, reflecting their strong base of experience in IT management in the financial services sector. A clear distinction is made between the process of coming up with interesting ideas and the process of delivering these ideas in the context of the Bank's systems. Implementing an idea in a system must be done in a way that reflects the real (and possibly unstated) need of the customer and manages technology risk for the Bank. This calls for IT staff and management with deep

knowledge and understanding of system capability and how this is used to support services in the Bank's specific IT configuration.

Managers in the Bank and the strategic partners recognise a clear distinction between generic IT capability, as might be bought in with a new system, and the more situated capability of the IT services that are derived from the integration of new systems with the Bank's complete IT platform. The duality of generic IT as a set of theoretical capabilities and delivered IT as a specific source of competitive differentiation for the Bank seems to be well understood.

The management of IT innovation and change is thus a well structured process in the Bank. An understanding of this process is also clearly shared between the management teams in the Bank and those of the strategic outsourcing partners. This could indicate the appreciation of risk and its management that was set as an objective of the outsourcing project.

The next section will describe how the strategic partners specifically contribute to the Bank's innovation process.

5.4.3 Contribution of the strategic outsourcing partners to IT innovation

The contribution of the strategic partners to innovation can be recognised in four broad areas: providing strategic influence, contributing to projects, making operational improvements and influencing IT process development.

The partners were not chosen primarily for their potential to contribute to the Bank's need for innovation. The benefits they could bring in reducing risk, improving quality and providing access to resources at scale were seen to be more significant drivers for their engagement. However, some commitments to innovation have been agreed in the partner contracts and initiatives are being put in place to use their generic knowledge to influence the Bank's technological strategy. One such initiative has involved taking the Bank's leadership team to one partner's innovation lab to create wider recognition of how emerging technology and practices might be used to create opportunities and solve problems in the future.

The strategic partners are directly involved in the delivery of innovative IT capability where this fits into specific projects, this is sometimes described as a continuous improvement contribution. Here they play a direct role in innovation through their involvement in technical roles, especially those that are responsible for the production of detailed system designs. At first sight the direction of these roles is made difficult, at least when compared with the situation before outsourcing, by the physical separation of the offshore developers from the teams working at the Bank's UK offices. The challenge of having effective dialogue with the offshore teams has led to a more prescribed form of working, involving high levels of formality in specification and response. While this may compromise creative ability, it could support improved quality of delivery and hence is in line with the Bank's overall objectives set for outsourcing.

There is an ongoing need for innovation in the way that IT systems are operated, this is described internally as 'innovation with a small i'. Although such innovations have less obvious effects on the Bank's customers than the launch of a new service, they can bring efficiency improvements as well as an improved customer experience. The insight of the strategic partners' staff, who are now responsible for system operation, is an important factor in recognising opportunities for operational innovation.

The move to outsourcing has prompted the Bank to question and critically review its internal working, leading it to transform the way that some processes are handled. The need to work effectively with the partners has thus indirectly had a positive effect on the Bank's internal innovation processes. For example, it has recognised the need, described above, to improve the way it captures, documents and manages requirements for change across project lifecycles. The interaction of the Bank with the partners' operations in India prompted reflections on respective quality systems. Outsourcing centres in India generally have formal quality management systems that are accredited to a very high level, needed to win contracts with specific types of client. The Bank, in common with others in its sector, would not reach or aspire to such levels of systematic quality management in IT development. The differences in formality, process and even language that this brings about would be a brake on effective communication between the Bank and the partners' offshore teams if the relevant internal processes had not been adapted to deal with these.

Some obstacles were observed that will need to be addressed or overcome if a fully effective innovation relationship is to exist. These will be discussed in the next section.

5.4.4 Obstacles to building effective innovation relationships

There is little evidence that a consistent set of structures and routines for building the knowledge of the strategic partners into the Bank's innovation plans has yet developed across all the outsourced development centres. This may reflect the varying levels of maturity of outsourcing across the different centres as the programme is rolled out. The Bank's careful approach to organisational development also seems to resist the early formation of operating procedures that are not evidently needed. However cultural as well as structural obstacles remain.

Managers recognise that the choice of an outsourcing strategy calls on the Bank to adapt its organisational culture, at least in the teams directly involved with the strategic partners. Before outsourcing, IT knowledge was held in primarily in the Bank's own organisation creating a culture in the team of self reliance and a focus on internal resource creation and use. The introduction of the strategic partners and the corresponding reduction in internal knowledge requires a culture with more external orientation; allowing the knowledge held in the partners' organisations to be explored, brought into the Bank and adapted to its purposes. Recognising this, senior management has encouraged staff to be prepared to listen more to the partners' ideas. Effective communication and exchange of knowledge and ideas needs good bilateral (and informal) relationships between the representatives of the partners at all levels and their counterparts in the Bank to develop. The partners, at least at the more senior levels, are competent in developing these relationships but there is a risk that their aim in doing this is still perceived to be more at selling generic services rather than encouraging knowledge exchange and collaboration. Perhaps trust in the relationships between the Bank and partners, while not at all absent, can develop further and to greater depth in their respective organisations.

This perception of the partners as overly sales oriented may also be a consequence of their currently taking little specific innovation risk on behalf of the Bank. Instead

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they are coming forward with ideas based on their own generic global development initiatives that they might be prepared to offer to any client. This could be a further indication that factors of mutual understanding and trust can develop further; the first helping to develop specific and beneficial ideas from generic programmes, the second encouraging more risk taking.

In the area of operational innovation, obstacles to knowledge transfer may emerge from the outsourcing contracts themselves. Although these formal agreements between the Bank and the partners play an important role in setting service level requirements, they can deter the partners' staff from moving from an operational to an innovative role when this might be appropriate. This is not a reflection of unwillingness to co-operate by either party but of the difficulty of making specific contractual agreements that can fit with the operational SLAs and the capabilities of the people provided by the partners in these areas. There is therefore a risk that capability to innovate and change has been reduced in exchange for more efficiency in system operation. The opportunity to improve here is recognised by the Bank, as is that this improvement has both commercial and behavioural aspects.

5.5 Implications of outsourcing for competence development in the organisation

It is generally recognised that management of an outsourcing partner requires different skills from managing an internal team. An issue the Bank has needed to face is how this re-skilling process should be managed at different levels in the retained IT team. Specific areas where new competences needed to be developed or existing competences modified were identified and are discussed below.

5.5.1 Technological competences

The Bank's conservative and risk averse nature has led it to retain a relatively large internal IT team and thus a set of specific technological competences.

Knowledge of the Bank's overall IT system is held by the retained Programme Architecture team and in the individual Technical Practices by 'Subject Matter Experts' (SMEs). The individuals in these teams have detailed understanding of the functioning of individual systems and interfaces, often based on their direct experience as coders within the systems. They were selected for positions in the retained organisation for their capabilities in these areas. The SMEs' role in the new organisation, now including the strategic outsourcing partners, is to make high level system designs, some detailed system designs (around half of the total made) and to check the quality of the code that is produced by the offshore development teams. Implicitly they also support the system integration competence that has been retained by the Bank as a result of its decision to split the outsourced development and support work across 12 Development Centres.

The relationship between the technological competences retained in the organisation and those acquired through the different outsourcing strands is an evolving one. Two problems of managing these technological competences are becoming apparent: the ability of the SMEs in the organisation to retain detailed system knowledge, as the configurations of these systems are changed over time and the need to manage the internally developed 'legacy' systems and code which are highly bespoke to the needs of the organisation. These problems will be discussed separately.

As the strategic partners have become more engaged in working with the Bank's systems their knowledge of the configuration of those systems has grown. The link between growth in this knowledge and the developers' experience of coding in these systems is frequently mentioned. This knowledge growth is not, in itself a bad thing. Conversely however, the knowledge of system configuration held by the SMEs in the retained IT team is reduced by this process. As time passes the SMEs become more distant from the direct experience of coding in the system on which they are expert, compromising their detailed understanding. This is causing the SMEs to begin calling on experts from the strategic partners to help with quality assurance activities.

Legacy systems are generically problematic where they include highly customised software applications that are idiosyncratic to the Bank. These are not recognised applications that might be found in any organisation but instead have been built, usually by an internal team or individual to deal with a specific problem. They may be very critical to parts of the overall IT service. Detailed knowledge of these systems tends to be poorly documented, residing 'in the head' of the individual developer and is thus a difficult competence to transfer to an outsource partner that will tend to have skills in more generic fields. Although many have been migrated towards more standardised applications in recent years, the Bank still has such systems.

Here the competence problem is one of knowledge retention. The people working with these systems tend to be at later stages of their careers with many approaching retirement. The shift towards an outsourcing based system, where the team is smaller and less 'hands-on' in its activities discourages the recruitment of good quality replacements. Further, with the growth of outsourcing more widely and the reduction in specialism within user organisations, a specialist career in one of the global providers can be seen as more attractive to a talented young developer.

At the working level, people from the old IT structure were selected for the retained IT team based on a formal assessment of their potential skills for taking on an envisaged new role. This new role is focussed on assurance while he former was more directly involved in doing IT work. Hence, the actual transition from the old to new way of working required a change in mind-set if the nascent skills recognised in

the assessment process were to be effectively released. Some individuals, found this change difficult to take on and have since opted to leave the Bank, choosing to remain in roles similar to those they had before but with new employers.

5.5.2 Outsourcing governance competences

Many of the managers of the various IT related functions in the Bank have direct experience of outsourcing either as a provider or as a client elsewhere in the financial services sector, many are relatively new to the Bank. This creates an atmosphere of professionalism and control based on real experience. This experience of outsourcing, at least at the senior level of the relationship, encourages the Bank to take seriously the perspectives of the strategic partners and also allows the development of a relational as well as contractual approach to governance.

Contractual governance:

The importance of the contract as a governance mechanism was mentioned by both the managers of the Bank and those of the strategic partners. The contract is seen by all parties as central to the agreement between the Bank and the partners. It serves to anchor the key commitments the parties have made to each other and the agreed critical service levels that must be delivered but also is seen to form a basis for further development of the relationship as the operating environment changes and experience on both sides grows. The general approach to contractual negotiation is that a 'win-win' position for the Bank and the partners needs to be reached. It is not a game in which one party wins at the expense of the other.

It is striking that all parties (the Bank and the partners) have developed this dual view of the contract, reflecting their competence in contractual governance. No opinion was detected among the parties interviewed that the contracts they use are set in stone for the future, to the contrary it is accepted that reasonable changes may need to be negotiated and incorporated during the contract period. It is also expected that more profound renegotiation can be expected at the end of the agreed contract term to adapt to the longer term changes seen in the environment. Even in the relatively

short period that the outsourcing arrangement has been in place there are examples where contractual amendments have been successfully negotiated to allow for unexpected changes in operating needs. This is not to say that the contractual governance is light in this situation; there are formal performance management frameworks in place for both operational and commercial aspects of the outsourcing. Less formally, the establishment of a transparent multi-supplier situation as described earlier creates real pressure on the partners to deliver a service that meets or exceeds the Bank's expectations.

Relational governance:

Alongside the contracts, the quality of the relationships between the individuals on each side of the various agreements are widely acknowledged as critical for success; phrases like 'it's all about people' and 'it's all about the relationship' are used and the analogy of a 'marriage' (between organisations not people) is made. A competence that is evident here is the capability to recruit and deploy people on both sides who are able to manage these special client-vendor relationships that outsourcing creates. This is widely acknowledged in discussions; having a good set of relationships between the Bank and its partners creates a positive climate where those relationships can develop, this is seen as key to success. Both the Bank and the strategic partners describe how important this climate is for attracting the best people to work on the partner account. They also refer to situations from their personal experience with other client organisations where the relational climate has deteriorated to one of a 'blood sport' where open hostility between the two sides leads to a situation where frequent changes of personnel reduce efficiency. Here, in contrast, using the 'carrot' is seen as a much more effective strategy than using the 'stick'.

Good relational governance clearly complements the approach to contract management as discussed above. The positive personal links between individuals create a climate of trust in which hard commercial negotiations can be more openly and effectively carried out. Trust is seen to bring about a situation where tricky discussions can be open in nature, meaning that a satisfactory solution can be more quickly found, without creating longer term damage to the relationship.

There are two further aspects of relational competence that are evident in this case. The relationship network between the Bank and vendors is a complex one in which new relationships need to be forged alongside others that already exist. Many managers here have a long history in the IT outsourcing field and have established contacts from the past with the major vendors used here, they bring these links into this relationship network. This happens at all levels in the respective organisations, meaning that as well as the formally defined operational relationships there are sets of less transparent network links throughout the hierarchy. These links create trust, act to facilitate mutual understanding and are encouraged by the placement of the right individuals for effective relationship management on both sides.

Closer to the working level, a different relational challenge emerges from the extensive use of offshore resources. Effective management calls for relational competence in both the organisation and the locally based staff of the strategic partners. This is needed to overcome the barriers of culture and geography that sit between the UK based Bank and its India based partners. Culturally, the ability to take a more clear and directive approach than would be the case with a western supplier is called for; geographically, the importance is emphasised of using all possible opportunities to make the remote teams feel involved with the Bank's goals, through management visits for example.

5.6 Perspective of the Strategic Partners

Interviews were conducted with representatives of the main strategic partners working with the Bank. This section consolidates their views on specific topics, it has been written in a way that does not allow the specific partner to be identified, restricting some of the underlying details.

5.6.1 Client objectives for IT outsourcing

The partners share the Banks's view of objectives for IT outsourcing projects and recognise these more widely across their client base. They describe how outsourcing has developed in the last decade or so from a strategy that was largely cost focussed to one more oriented to operational benefits. This dictates a change in the way that their client needs to organise for outsourcing. In earlier projects (usually described as '1st' or '2nd' generation) which were very cost focussed, the client organisation could be severely reduced in size and a single vendor would generally be engaged. This would deliver significantly lower costs as operating inefficiencies were eliminated and any offshore labour arbitrage could be exploited to the full.

Client objectives for outsourcing are now more complex, they are seen to have shifted towards achieving flexibility and gaining the ability to exploit the vendor's experience of other client organisations. In the financial sector, risk management has become critical. Cost reduction is still important but is possibly seen as secondary benefit of outsourcing rather than a driver. The relationship with the client has changed into more of a partnership and been complicated by the more common involvement of one of more competing vendors also working for the client. This means that the client's retained IT organisation must be larger, allowing more control over the relationship both with and between the vendors as well as over the output of the service as a whole.

Outsourcing projects are now commonly linked to transformation activities, either of parts of the client's IT infrastructure, of the client's IT organisation or IT related processes. Some of these activities are relevant in this case and are parts of the partners' current or past work for the Bank. The partner's ability to offer such

transformation alongside the agreement to run the systems or provide services over a contracted period is seen as a benefit for both organisations.

5.6.2 Partner involvement in innovation and knowledge

The partners have commitments to innovation as a distinct part of the outsourcing contract. However they do not give the impression that these are driving factors in their agreements with clients in general and the Bank specifically. Innovation proved difficult to discuss as a concrete activity, it is described in a number of ways: as a means of securing promotional advantage, as a method of continuous improvement and as something that clients want in theory but are unprepared to pay for. The contractual agreements are in place but there is little concrete evidence of a plan or process for deriving significant benefit from them.

In contrast, an awareness of the climate that must be created in IT outsourcing to allow development of behaviour that can lead to innovation is evident. The value of partnership developing between vendor and client in place of a simply transactional relationship is recognised. This creates a situation where open discussion is possible, which in turn can lead to the exchange of knowledge between organisations from which innovative ideas and projects emerge. The creation of this partnership climate is not seen as the responsibility of the client alone, rather it is a non-contracted commitment the vendor should aim to deliver.

Partners recognise that there will remain large differences between their knowledge base and those of their clients; in this case they are the technology experts not the bankers. Some knowledge that is relevant to the working of the IT platforms is important to transfer when outsourcing happens but the vendors have established processes and expertise in this area and it is not a cause of problems.

5.6.3 Client competences

The partners are very positive about working with the Bank and see distinct strengths in its approach to the management of outsourcing. It maintains a good open dialogue with the strategic partners which allows them to share a clear

understanding of needs and priorities as these evolve. The partners feel that they are encouraged to join in the thinking process of the Bank. This also means that there are few surprises, change in client priorities or problems in project delivery are accepted as inevitable in this business but an understanding of the reasons for these through dialogue prevents the frustration that can lead to contractual wrangles. The open and friendly atmosphere around the outsourcing also encourages the better staff in the partner organisations to want to work on the Bank's account.

The Bank is seen to have a disciplined approach to its management of IT. Projects are generally seen through to a conclusion, even if suspended for priority reasons they are eventually finished off. To manage architecture planning and system integration across the multi-supplier system it has set up, the Bank is seen to need strong knowledge competences. In some areas its retained team has good knowledge in other less so, especially where large amounts of past IT work has been placed with suppliers and internal expertise has not built up. The positive collaborative environment between the partners and the Bank is seen as a strength in addressing these knowledge gaps.

The commercial system set up by the Bank is seen as tough but fair. The partners recognise the pressure that is on them to compete for business but see this as positive for their own organisations. The Bank's approach to contractual discussions is seen as practical and open, it being willing to reconsider and redesign agreements where unforeseen changes in their operating contexts have come about.

5.7 Results of the outsourcing

The IT outsourcing strategy of the Bank is a big project that, owing to its structure around 12 development centres, is still in a process of implementation which started around three years before the research for this case study was carried out. This section describes the results that could be observed at this relatively early stage.

5.7.1 Cost management

Outsourcing seems to have addressed the objectives set for controllability and predictability of cost as well as providing an easier way of securing required skills than hiring in the UK. Significant cost savings have been made where outsourced development centres have been set up to replace teams that were previously staffed with day-rate contractor resources. However some internal clients, within the Bank who are now using services from the same outsourced centres perceive an increase in cost, probably because previously un-costed activities are now becoming evident in their project reports. At an operational level, some processes that have been put in place between the Bank and the partners are still maturing. Early benefits have been seen but inefficiencies are also recognised. These are currently tolerated as the organisational ecosystem that outsourcing has created continues to learn how best to operate.

5.7.2 Organisational development

The transition to outsourcing seems to have been successfully carried out so far, without any major operational or organisational problems happening. Despite this positive seeming result, managers remain open to questioning if the Bank's approach to the relationship with the strategic partners is the right one. Different models of the relationship exist in individual managers' expressed views: a social or relational model based on partnership and a more instrumental model based on contractual governance. There are also questions over the most effective size and skill composition of the retained IT team. However, as with vendor selection there is

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little evidence of inappropriate procedural or contractual dogma that is blocking experimentation and development.

This is supported by the role of the Bank's commercial team which has avoided being pushed into a mediating role between IT management and the strategic partners, leaving management to take the lead. This creates an impression of the Bank being willing to amend agreed approaches to get the most operationally effective solution, but retaining the sanction of commercial action if this was to prove impossible.

Motivational systems for the retained staff have not fully adjusted to the new way of working and a risk of loss of knowledgeable retained staff persists. Motivation can be created by understanding the way that the new situation is viewed by the retained people and the barriers they see to success in it is seen as an important current management task. The organisation is using survey tools to understand opinion and recognises the importance and value of its internal knowledge resources.

5.7.3 Quality and process improvement

The benefits of the more rigorous management practices that outsourcing has created are now beginning to be reflected in reduced incident reports. However alongside this there is a concern that excessive focus on compliance to service level agreements by both the retained organisation and the strategic partners may be creating behaviours that are not holistically beneficial to the organisation; an example of this is actions being taken to address the symptoms rather than the underlying causes of problems.

The retained IT team as a whole has not yet fully matured in its role nor in its organisational and social relationship to the strategic partners. Trust in the partners is not established at all levels of the team. This can lead the Bank's people to rush into costly compensating activity when things are seen to go wrong instead of turning to the partner for a more structured and long term solution.

5.7.4 Access to skills

The engagement of the partners aimed to provide the Bank with access to skills it needed to operate and develop its IT system. It is hard to assess in concrete terms whether or not this has happened. However, there is also no evidence that it has not. The people interviewed for this case, both from the Bank and the partner organisations, expressed no concerns about the capability of the developing relationships to deliver the agility and quality of services that the Bank is seeking. In the offices visited there is a buzz of activity, development and performance goals are evident on posters and whiteboards, people look positive in their activity, there is a rich cultural mix.

Chapter 6 Discussion

In this chapter the case studies that are set out in chapters 4 and 5 will be examined in relation to the theoretical propositions that have been derived in the literature review, chapter 2. These propositions are:

> Proposition 1 – IT Competence. To create effective IT competences, management must effectively combine technology and structure with contextual knowledge and social capital on an organisation-wide basis.

> Proposition 2 - Knowledge. Effective IT outsourcing creates unique structural enclaves in which social capital can allow the knowledge resources of the client and vendor to be combined to enhance innovation competence.

> Proposition 3 - Objectives. In transition to outsourcing, the deliberate creation of social capital within enclaves is overlooked in favour of securing specific technological or structural objectives.

> Proposition 4 - Governance. The contractual governance applied to IT outsourcing enclaves forces a simplification and codification of knowledge that can limit social capital formation and hence innovative competence.

The two cases offer detailed insight into situations where IT outsourcing has been developed in real practice. This chapter aims to test that practice against the theory and the theory against the practice. Do the cases confirm the predictions of theory? Do they challenge these?

The chapter opens with four sections each dedicated to an interpretation of the Agency and Bank case studies against the each of the four propositions. For each proposition the key observations from the two case studies will be described, related to each other and where relevant, to specific pieces of literature that underpin that proposition. Any quotations from the interviews used in this discussion is identified using the respondent codes shown in table 3.1. These sections conclude with a summary of the empirical findings as they relate to the proposition, an assessment of how the cases do or do not support the existing theory that led to the proposition and

a reflection on the implications of this for the conceptual framework developed in Chapter 2.

The chapter goes on to discuss 5 further case study examples of IT outsourcing, taken from published literature. These cases are described and also analysed against the four propositions. This analysis has less depth and reliability than that of the dedicated cases of Chapters 4 and 5 as access to the underlying data is impossible and the analysis rests on the layer of interpretation already provided by the case writer. However they do provide a useful check of the interpretations of the Agency and Bank case findings.

The chapter concludes with a summary of the analysis and its implications for the four theoretical propositions.

6.1 Proposition 1 – IT Competence

'To create effective IT competences, management must combine technology and structure with contextual knowledge and social capital on an organisation-wide basis.'

In both case studies a large and complex deployment of information technology was evident. The very different contexts in which the Agency and the Bank operated meant however that the IT competences required were varied across the two cases. The nature of these competences and an interpretation of the means of their creation will be discussed in this section for each case.

6.1.1 The Agency

At the Agency, IT is used to direct complex field activities efficiently, to manage flows of information from the Agency's operations to various public destinations (some of these flows having significant importance to the public and time criticality) and to support a distributed workforce in its daily administrative and co-ordinating activities. The Agency's application of IT in relation to its wider organisation closely corresponds to the 'IT core' described by Swanson (1994); it complements and links the administrative and technical cores of the Agency's organisation. It also supports the organisation in building efficiency, an important factor in a situation where value creation is recognised in part as the responsible and effective use of public money (Peppard and Ward, 2005).

The structure of IT management within the Agency is conventional. An IT department includes the functions that correspond to those of system operation, system development and system planning evident in the 1980's research of Olson and Chervany (1980). A single individual (A1) managed these teams, occupying an 'IT director' role. This created a situation where responsibilities for IT and its various sub-ordinate functions were clear to those inside and outside the organisation.

Turning to innovation and change, the Agency does not have a defined innovation process that links the needs of the different parts of its organisation together. It is

not the case however that there is no innovation, rather that the process for it is not discretely recognised and organised.

Within the operating units of the Agency there is evidence of an ongoing need for innovation. A1 described the importance of IT change in supporting,

> *'...critical responder roles and the importance of real time, up to date information, of digital communication strategies and mobile working'.*

However A1 also commented that,

> *'I think it's probably fair to say [innovation is] more important to me than it is maybe to a lot of my colleagues in [the Agency] but they like it when they get it.'*

Distinct areas of innovation activity can be identified. These range from speculative and informal explorations of innovation ideas, through creation of 'digital options' (Sambamurthy et al., 2003) and digitisation of existing services (Lyytinen et al., 2016) to formal and significant investment programmes.

The needs for innovation are articulated (or not) in different ways, sometimes proactively by the units concerned and sometimes in reaction to technologically driven initiatives coming from the IT group. Innovation opportunities also emerge from ideas or developments originating outside the organisation. Reflecting on the Agency's approach to developments in social media for example, A2 commented that,

> *'we have a couple of innovation consultants who whose task is to do some of that scanning, that's part of their role and you know, one of my team in that area now works part time because he's actually part of a social change programme in his local town'*

This illustrates the Agency's willingness to collaborate within a network of external parties at a variety of formal and social levels in pursuit of new knowledge creation to support innovative IT use (Riemer and Klein, 2008).

To be effective, IT innovation must be aligned with the changing needs of the wider organisation. In absence of a structured two-way process of innovation planning in

the Agency, A4 described how innovation ideas were spread to the wider organisation,

> *'We have art of the possible sessions as well with [representatives*
> *from operating departments] where we just share advances in*
> *technology, what's available what sorts of things are going on in*
> *other parts of the organisation, other parts of government, other parts*
> *of the world'.*

Viewed from the perspective of knowledge literature, these sessions would be good examples of fora in which social processes for the exchange and combination of internal knowledge are enacted, leading potentially to new knowledge creation (Nonaka, 1994).

Such a process of pushing ideas for technologically driven innovation from the Agency's IT group into the wider organisation has a strong social aspect; IT change can profoundly affect long established ways of working (Orlikowski, 1996) and both structural and relational social capital will help secure acceptance of ideas for change in more conservative parts of the organisation. IT managers use their knowledge of the Agency's business often drawn from their personal experience in operating roles, to identify problems, propose solutions and seek acceptance of these (A1, A4 and A6 mentioned their operating experience gained elsewhere in the Agency).

Specific roles exist to build collaborative links with the wider organisation along the lines described by Hatzakis et al (2005), A4 described these,

> *'So the [department] relationship managers, [explains]. They're*
> *embedded within that part of the organisation to work out where they*
> *need to go, what they need to do and what that means in terms of how*
> *[IT] can support them.'*

These experiential and relationship examples offer evidence that social capital, in its structural and relational dimensions are present in the linkage between the IT group and the wider organisation of the Agency (Nahapiet and Ghoshal, 1998, Peppard, 2007). This supports the conclusion that IT management in the Agency can be seen

as the series of entwined technological and social objects that was proposed by Zammuto et al (2007). It also points to the existence of 'organising visions' (Ramiller and Swanson, 2003, Swanson and Ramiller, 1997) around which innovation can be structured.

In the Agency's IT group there is a process for innovation known as the 'innovation funnel'. IT people collaborate with colleagues across the Agency, using the methods described above, to identify general and specific ways in which IT services might be used to develop and improve operational activities. Plans for individual development projects needed to realise these are then made. Then, as described by A6,

> *'we pile all those into [the innovation funnel] and prioritise and*
> *attempt to put them on a roadmap for us to invest in'.*

The innovation funnel is thus the process of dialogue, planning and refinement which aligns the technological functions of the Agency's 'IT core' with its administrative and operational activities (Swanson, 1994, Peppard, 2007). Alignment is directed by the IT team which manages the supply of technological innovation to match efficiently the developing demands of the wider organisation. In describing this process of matching demand and supply, A1 talked of the relationship between '*tactical*' needs of the organisation and the '*strategic*' provision of IT capability. This distinction echoes the idea proposed by Sambamurthy et al (2003), strategic IT innovation providing a set of digital options that the wider organisation can choose tactically to exercise.

The organisation wide control over innovation activities is exercised through the Agency's investment planning process in which the departments 'bid' for funding for specified activities. This seems to be a complex and political process in which different forms of funding are matched to different types of activity as part of an annual financial cycle. Projects seen to be significant for the Agency as a whole are easier to get onto the discussion agenda of this process; A6 commented on how this had applied to the IT transformation project that opened the Agency's outsourcing,

> *'the fact that you've got an outsourcing project gives you an ability to wrap a load of necessary things together and present them as a package with more credibility than without outsourcing'.*

An aspect of IT competence demonstrated here is the capability to build organisational consensus for complex and technical change activities which can benefit quality or competitiveness (Marwaha and Willmott, 2006). The Agency case (incidentally) shows here how the use of outsourcing can add to this competence. The nature of the outsourcing agreement with the vendor encourages smaller projects to be aggregated and provides contractually governed assurance of delivery, factors that would be absent were project work to be carried out internally.

The relationship between the Agency's IT department and its internal clients seems to be diverse. There is a core of process and routine but structural social capital along with the experience and knowledge of the people involved are important factors. The social aspect of these relationships is important. In justifying why a particular team should be retained in-house, A5 mentioned its '*capability*' alongside its '*credibility*'. Capability implies an objective appraisal of skill and result, credibility is a more disputable factor that is rooted in cognitive and relational social capital, specifically aspects of network closure they might display (Coleman, 1988). A1, talking of the relationship with end users, said that,

> *'in some areas we actively kind of prompt and cajole and work with them'*

This also describes an environment with strong relational social capital, not one where structures of power and command are always used to secure compliance.

IT management in the Agency supports and encourages innovation from a functionally structured organisation with established patterns of activity and a motivation of public service not profit. The IT department co-operates with the wider organisation to generate innovation ideas and compete for investment funding. Organisational innovation may therefore either lead IT or be driven by it. The innovation competence in the IT team is thus built not only on the technical knowledge it possesses and the technological artefacts is manages but also on its

ability to exploit its social capital in an organisational structure where no consistent innovation policy is in place.

6.1.2 The Bank

The Bank has no distinct IT organisation, nor at the time of research did it have a single head of IT. IT is so fundamental to its operations that responsibility is integrated across different functions in the operations team that reports to its Chief Operations Officer. The respondent B1, who led a division of this operations team was internally identified as having most responsibility for IT development and operations.

The Bank's IT competences are critical to its overall mission. IT plays an essential role in the management and recording of customers' transactions and their changing account balances. If these functions fail, the Bank is seen to fail. The distinction of the 'IT core' from those of administration and technology (Swanson, 1994) is more blurred here than is the case at the Agency. Correspondingly, the consequences of failure in IT, as has been demonstrated by some of the Bank's competitors, could be serious not just for the organisation but for the wider UK economy. In response, the Bank has actively looked to build competence in managing the risk that system failure represents. This quest for risk reduction has thus become a major driver of its IT strategy. It was described by B2 thus,

> *'what do we wake up with sweaty palms in the morning about, risk. Yes. The ability to torch the brand through some massive failure is just so scary, and we've seen others do it, so risk is absolutely at the top there.'*

For the Bank although efficiency and innovation are important and recognised IT competences, they take second place to that of risk reduction. This incorporation of risk reduction as a factor in IT management extends the literature analysis of Dewett and Jones (2001), adding another factor to those of efficiency and innovation. It also perhaps reflects the value that extensive IT use has created in the financial services industry (Schlosser et al., 2015).

In contrast to the largely IT driven approach to innovation seen in the Agency, the innovation process at the Bank is more structured and strongly directed from the top of the organisation. B1 commented on this,

> *'We do have a situation where the investment governance is very centralised'*

Innovation takes place in defined programmes linked to a small number of investment themes that are agreed at Board level and support the long term strategy of the Bank. These set a vision for the Bank's investment in capabilities over a five year period. Forming such a vision solves a social problem of creating consistent direction across a large organisation, reflecting the 'organizing visions' described by Swanson and Ramiller (Swanson and Ramiller, 1997, Ramiller and Swanson, 2003). However, by lacking detail, it creates a problem of knowledge management. The complex and long term investment plan it represents must be interpreted to create the coherent direction setting at individual project level needed for effective IT management. B6, reflecting on the problem of making the plan understandable to the organisation, said,

> *'well you chop it up into [number of parts] and within each of those you can tell a story,…, so you can imagine a set of statements that you'd want to be true against each one of those and then you can start to prioritise investment on the basis of that'.*

The agreed investment themes are evident in the Bank's organisation, displayed on posters seen on office walls. They thereby become part of the relational social capital of the organisation, in the terms used by Nahapiet and Ghoshal (1998), they reinforce trust. An individual working in a small IT project can identify the alignment of his or her activity to the organisation's overall goals and thereby build trust that the activity is legitimate and will be valued. This process of trust building, driven in this way by the clear communication of organisational priorities and goals, is to an extent independent of the structural social capital linking that individual with others in the working environment.

Skilled people in the Bank's organisation play an important role in the IT innovation process. Investment themes are translated into project activities by programme

managers with what can best be described as an IT 'allegiance'. As mentioned, the Bank has no dedicated IT department but the programme managers are experienced and senior IT practitioners with detailed application knowledge as well as a deep understanding of the Bank's processes. Many have direct experience with outsourcing gained either as former practitioners from vendor firms or in similar roles at other financial organisations. Their role, as described by B7 is to,

> *'see what capabilities you need to have to make that strategy a reality'.*

This involves linking corporate strategies to required changes in operational needs and thus to any additions or changes to IT services. When these services are delivered, they must be integrated and passed back to the operational user. At the technological level, IT subject matter experts support programme managers by linking changing user requirements for an IT service with the actual technology work that is needed. Commenting on the experts' role in innovation, B3 said,

> *'I think that innovation can come from any angle really but fundamentally you do need people who understand the system well enough, and how the system works, to be able to actually know whether or not you can even do certain things or not'.*

Having knowledgeable people based in organisational structures that allow their knowledge to be effectively used is a key characteristic of an IT operation such as that in the Bank where complex change is ongoing (Zammuto et al., 2007).

To structure its response to this complexity, the Bank's has put 'development centres' in place. These divide its technology into 12 discrete functional blocks around which knowledge resources can be organised. As these resources may be provided by internal people, by engagement of specialist vendors or by outsourcing, this structure of development centres provides a flexible system for allocating supply of knowledge resource against changes in demand. Long term vendor agreements align with these development centres meaning that risk of poor performance by a single vendor is reduced; this contrasts with the Agency case where a single vendor has been engaged to cover most IT activities. If new knowledge is needed to support an innovative activity at the Bank, the development centre structure allows

new vendor arrangements to be created or changed to accommodate this, without re-designing the entire resourcing system.

The interplay of development centres was described by B6 thus,

> *'we'll have decomposed the solution [...] then we'll say most of this is going off to the [a] development centre but there's also some work on the [b] DC and also some work on the [c] one and on our [d] one. So we'll have functionally broken it down and handed it across to them as packages of work.'*

In a second comment, B6 described how personal involvement with this activity had both a formal and informal nature,

> *'my project accountability runs from there to there [referring to process diagram] but then I will then have ongoing engagement with [a] who will give me feedback on, has it fallen on its arse every five minutes, and then engagement with [b] to make sure that we can then ultimately tie it back to, is it achieving its goals?'*

The IT management structure used in the Bank is therefore one in which innovation emerges from a network of people who use their own technological knowledge and the structural and cognitive social capital of the organisation to recursively relate corporate intentions with project activities. Structural social capital emerges from relationships within and between the development centres, cognitive social capital comes from the top-down shared goals and priorities. IT knowledge in this system is also structured in a way that creates agility in the choice and deployment of specialist vendors as well as reducing risk. This structure conveys authority to the provision of IT competence and probably creates the situation that allows 'IT' not to be named as a function in the organisation chart.

The Bank has a 'top-down' approach to managing innovation, working from strategic objectives for the organisation as a whole, down to specific projects. This contrasts with the Agency's more 'bottom-up' approach, where ideas originate close to the working level and are aggregated into investment proposals. Each approach has both normative and social aspects; a set of projects must be devised that matches

each organisation's needs for efficiency and investment return, equally this must be agreed, understood and respected by the wider community of people expected to deliver and use the services so created.

6.1.3 Conclusion

The proposition examined in this section was:

> To create effective IT competences, management must combine technology
> and structure with contextual knowledge and social capital on an organisation-
> wide basis.

In table 6.1 below, this proposition is broken down into its key components and
against each, the key observations from the two cases are shown.

Concept derived from proposition	Observations in Agency case	Observations in Bank case
Required IT competence	High quality and cost effective services that support field operations and data provision to the public.	Management of technological complexity and consequent operational risk.
Structure of IT activities relating to technology	Single block of activity covering all technologies in use.	Multiple functional development centres each relating to a defined technology scope create resourcing flexibility.
Organisation of innovation process in the whole organisation	Bottom up idea generation and innovation process supported by internal collaboration between IT and operational specialists.	Top down innovation process that aligns IT activities with organisation wide investment themes.
Place of contextual IT knowledge in innovation process	IT knowledge concentrated in the dedicated IT organisation.	IT knowledge encouraged to develop across the wider organisation, partly through the deliberate absence of a focussed IT department.
Role of social capital in innovation process	Innovation driven out of dialogue between IT managers and internal clients. Importance of structural and relational social capital can be seen.	Innovation linked to long term themes with little room for doubt. Importance of structural, cognitive and relational social capital can be seen.

Table 6.1: Key observations, Proposition 1

The observations in table 6.1 can now be related to the theory from which the proposition was derived. This is discussed below under three broad headings.

1. Relation of IT competence to IT value creation and IT/business alignment:

This literature suggests that IT has evolved from a technology for increasing process efficiency to one that provides a basis for organisation-wide value creation (eg. Peppard and Ward, 2005). An IT competence in value creation involves effective use of information (Zuboff, 1988), appreciation of complex digital options (Lyytinen et al., 2016, Sambamurthy et al., 2003) and alignment between IT goals and those of the wider organisation (Aral and Weill, 2007, Peppard, 2007).

Both cases support the value creation literature although the mechanisms for this value creation differ across them. In the Agency, value is created through efficiency, not only of process but also of information management. In the Bank, IT sits closer to the core of its organisational value creation process. The use of IT generated information as described by Zuboff was not apparent in the observations of either case, however the ways of working described in the interviews suggested that it was likely to be present in both organisations as a part of their wider operational activity. This possibly reflects the institutionalisation of information use that has happened since Zuboff was writing in the 1980s. Each organisation actively sought to create digital options but their approaches were in sharp contrast. In the Bank, digital options emerged in support of defined, strategic innovation policy while the Agency created options in a more opportunistic way, driven by a range of more tactical activities. A similar distinction could be seen in IT alignment; at the Bank this was created through clear, organisation-wide priority setting while at the Agency it emerged from recurrent, regular dialogue between senior management, users and the IT group.

2. Structure of tangible and intangible IT resources (the adapted 'diamond' model):

Literature suggests that the structure of IT resources must enable collaboration between knowledge holders inside the IT organisation, in the wider 'client'

organisation and external to the organisation (Riemer and Klein, 2008). It must be flexible and recursive with the changing needs of the wider organisation (Orlikowski, 1996, Zammuto et al., 2007).

Although both organisations have large IT estates, the Agency structured its IT activities in a relatively simple way when compared to the Bank's multiple development centres. These contrasting structures seem to reflect the both the complexity of the IT in use and its criticality to the overall mission of the organisation. Both structures enable the innovation strategy of the organisation and would be ineffective if (hypothetically) applied to the other case. The simple structure of the Agency's activities allow collaboration but this seems to be largely driven by individual action and social capital. The Bank's structure is more systematised and amenable to top-down management but possibly slower to change. This would imply that at the Agency, recursive change in the innovation process might be driven by individual managers working in the process while at the Bank this would come from more exogenous change driven by collaborative action among the designers of the process sitting at senior levels in the organisation.

3. Drivers of IT innovation competence:

The literature proposes that Innovation competence comes from the ability to create contextual knowledge (Tsoukas, 1996). This is built on use of system generated information (Zuboff, 1988), connection to the wider organisation (Hatzakis et al., 2005, Peppard, 2007) and ability to collaborate with suppliers and other external networks (eg. Marion et al., 2014). Dimensions of social capital (Nahapiet and Ghoshal, 1998) provide support for such connection and collaboration (Huysman and Wulf, 2006).

The organisational boundary in which IT knowledge was concentrated was much more evident in the Agency case where there is a dedicated IT department. At the Bank, the absence of a named IT group and the presence and importance of boundary roles (like those of B6 and B7) meant that IT knowledge was more diffuse across organisational structures. This might imply that the Agency's structural approach to contextual knowledge maintenance was weaker than that of the Bank

but in practice this was mitigated by the presence in the Agency's IT leadership team of individuals (like A1, A4 and A6) with substantial operational experience gained elsewhere in the organisation. This shows how connection between IT and the wider organisation can have aspects of a planned process (Bank) or one created by management of human resources (Agency).

In both cases links to external suppliers were important for supporting innovation. Gaining more structured access to knowledge and practice skills available in the market was an objective of both organisations' outsourcing decisions.

In both cases, social capital supported collaboration within the innovation process although the prominence of its different dimensions varied. At the Agency, the simpler structure eventually promoted relational social capital alongside the more obvious structural dimension; people needed to behave in expected ways and trust each other. The more complex structure of the Bank promoted the development of intricate structural social capital while cognitive and relational social capital was created by clear and powerful communication of innovation priorities.

In conclusion, both cases show how structuring decisions influence social capital formation in and around an IT organisation. This in turn affects the organisation's competence in the creation of new knowledge that allows innovation of information technology applications in support of the wider organisation's task. The cases therefore display both the aspects and interactions within the adapted diamond model (shown in figure 6.1 below).
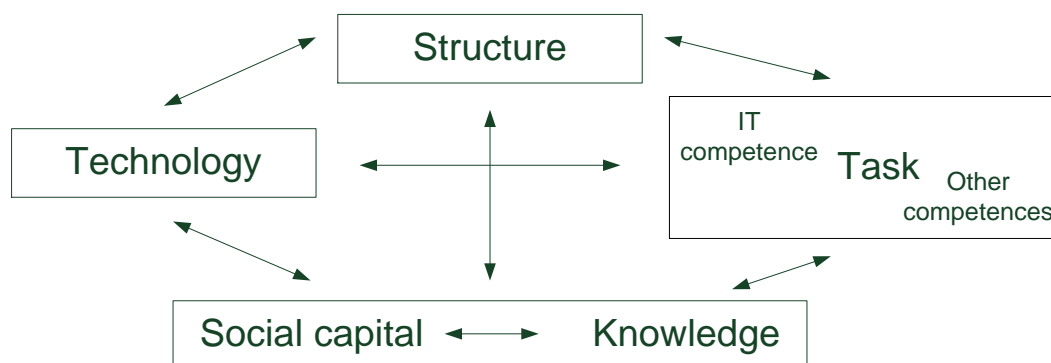

Figure 6.1: Adaptation of Leavitt's diamond to an IT competence

The next section will discuss how the establishment of IT outsourcing enclaves in each case has affected IT innovation competence.

6.2 Proposition 2 - Knowledge

'Effective IT outsourcing creates unique structural enclaves in which social capital can allow the knowledge resources of the client and vendor to be combined and enhances innovation competence.'

The operating contexts of the Agency and the Bank are complex and changing. To continue meeting stakeholder expectations each must be capable of resolving this complexity and responding to the need for change in a timely and efficient way. The IT knowledge and competences they have evolved over a long period of time play a significant role in this. However, based on sound reasoning, each organisation has outsourced parts of its IT competence to external vendors. This strategy was driven by specific goals: technological transformation leading to quality improvement at the Agency, risk reduction through improved resilience of resourcing at the Bank. Both organisations have achieved these goals, along with meaningful cost reductions.

In both cases outsourcing enclaves were set up with little obvious consideration of how the change in knowledge resources they represented might affect the more intricate competence of IT innovation. The importance of innovation was not ignored, it simply had a lower priority in the decision making surrounding outsourcing than some literature would suggest (eg Quinn and Hilmer (1994), Kroes and Ghosh (2010)). Both organisations made contractual agreements with their vendors for innovation to be delivered. These defined commercial mechanisms and incentives for vendors to be innovative (Susarla et al., 2010) but evidence of their implementation was scant.

This section will discuss how the approaches seen in the two case organisations support or refute the proposition above.

6.2.1 The Agency

The Agency chose to outsource its entire application management function to a single vendor. This created a tightly defined enclave to which the people who had performed the function in the original IT organisation would be transferred. The process was described by A6, who had previously managed the affected team,

'We TUPE'd across, of the 200 or so people that worked for me, about 120, 130 moved straight to [vendor]. Some contractors moved directly across to [vendor] and I kept a team of about 25 as a retained team. We made that change 18 months before we outsourced.'

Concerning the softer, more social aspects of the change in organisation made 18 months before the formal creation of the enclave, A6 went on to say,

'they were absolutely clear what their destiny was in all of this right from the word go and there was some management to do through that but that helped the pain towards the end. But it got them thinking in the right way, for when they transitioned to [vendor], and it got the retained team thinking in the right way for the sort of behaviours they were going to expect from a group that were told to think in a very different way, particularly in terms of costing. And that was great, it worked really well.'

The reference here to 'thinking in the right way' and 'behaviours they were going to expect' demonstrates the perceived importance of structural, cognitive and relational social capital in the enclave that was to be formed.

However, when the objectives for the enclave were examined from the more formal perspective of the negotiation, a different view can be seen. Here outsourcing is a formal process for enforcing behaviour and service outcomes. Reflecting on the goals of the outsourcing project, A3 commented,

Key thing for us what that we were able to produce something that would generate higher quality, lower cost but sustainable, […], sustainable services and service levels I guess. So contracted service levels with a third party organisation tend to stick more than supposedly contracted services with an in-house organisation. Or certainly that had been our experience.

In the earlier phases of the outsourcing project, the enclave was responsible for delivering a large technological transformation. In this, the strong 'enforcing' view of outsourcing seemed to prevail. A1 referred to the approach taken:

'I've spoken about my previous incumbent [A1's predecessor] and
you know he was pretty tough on [vendor] but he was right to be, they
were not performing in terms of the contract and he took some pretty
tough action and hurt them very early on in the contract with penalties
that were absolutely contractually right.'

The atmosphere created in this phase of the Agency's outsourcing by both sides' rigid interpretation of contracted service agreements and incentives seemed to limit the scope for knowledge combination and hence for innovation. The problem was described by A3,

'the downside of a contract which is well locked down, which is what
this one is, is it does make it difficult when something completely
fundamentally changes to deal with. Mainly because their question
rightly [...] is how do we get paid for this? '

This was not a situation in which the type of 'complementary competences' discussed by Levina and Ross (2003) would be likely to arise, or even be considered. Neither could a competence of absorptive capacity (Cohen and Levinthal, 1990, Zahra and George, 2002, Aribi and Dupouët, 2015) be developed. The baleful presence of the contract deterred each party from varying its script and making changes to ways of working that could create structural and relational social capital to link the enclave with the wider organisation of the Agency and thus promote knowledge growth and innovation. This reflects the paradox of simultaneously managing efficiency and innovation within outsourcing enclaves (Aubert et al., 2015).

A5's comment reflected on how relational growth might be helpful,

> *'At the moment I would give a view that it feels fairly, from a [vendor] perspective, they would like to be closer to the customer. Now when I refer to the customer, that person would be our internal business customer [...] Working with them we would start to develop and build that and understand what the requirement was etc. and we would get to a point where we would engage with [vendor].'*

But the barrier to this was expressed by A1, showing how the Agency's choices about how to deliver the IT competence of the outsourcing enclave to its wider organisation restricted the development of structural and relational social capital:

> *'We provide a buffer for virtually everything else so we being, [Agency] employees provide the interface between the organisation and [vendor].'*

Until the conclusion of the Agency's transformation project therefore, the benefits delivered by the outsourcing enclave were restricted to the gains in quality and cost efficiency of the IT services that were foreseen, agreed and catalogued at the outset of the relationship (although it must be noted that these were worth having). There was very little evidence of complementary competence development or of new knowledge creation and innovation. Indeed, as A1 commented, innovation remained a low priority:

> *'what did I want them to focus on? I would have said two things up until transformation completed. I would have said transformation and reliability, of current services, maintaining current services. I would not have put innovation, I would not have not wanted to worry them with innovation at that point.'*

This pattern of actions effectively conforms to the first stages of movement around the knowledge matrix of Spender and Baumard (1995) discussed in Chapter 2 and repeated here as figure 6.2.
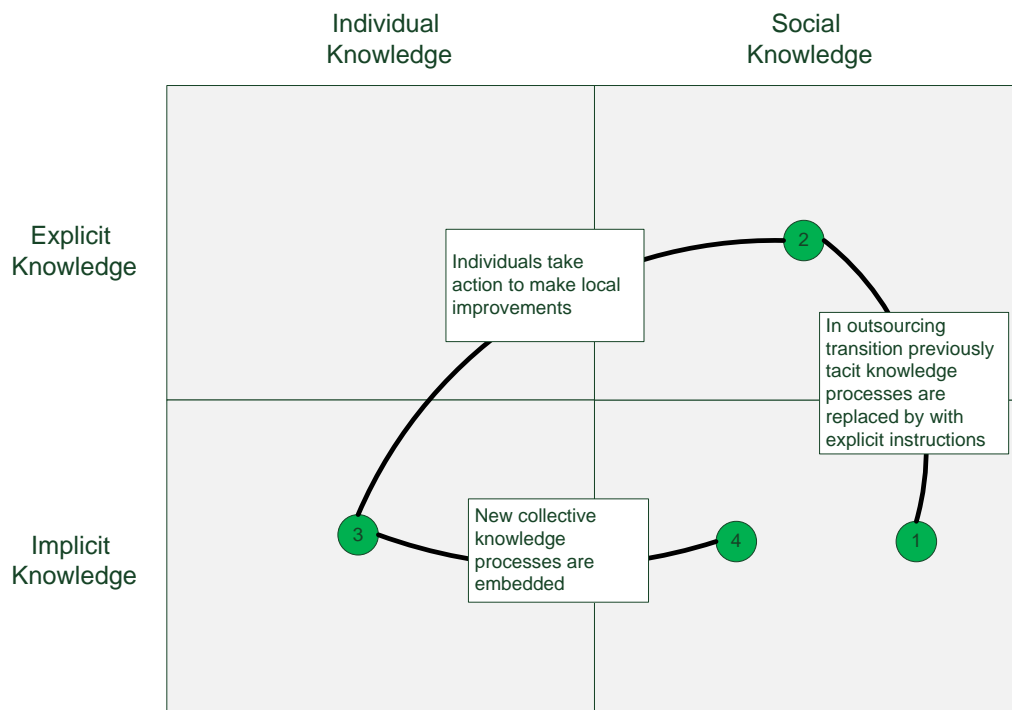
Spender (1996); Organizational Knowledge, Learning and Memory: Three Concepts in Search of a Theory

Figure 6.2: Theoretical evolution of knowledge factors after outsourcing

Before outsourcing, the Agency's IT innovation competence sat in the implicit knowledge resources that were held in the complex social environment of the integrated team. Outsourcing resolved critical quality problems but its discipline affected innovation routines, forcing knowledge into the explicit domain. This is demonstrated by the vendor's attitude to innovation described by A1,

> *'what is it you want us to do, what is the thing we're trying to solve,*
> *how are we going to solve it'.*

A1 saw the process as one where the Agency needed to instruct the vendor on how innovation should happen. This would imply a one-way information flow, not a process for creating new knowledge from the 'combination and exchange' of existing knowledge resources (Tsoukas, 1996).

A2 also reflected on how the processes applied in the outsourcing enclave restricted the development of innovation competence. When asked how the results of outsourcing met expectations, A2 commented:

> *'We've lost flexibility and agility and to a certain degree although the headline is that we've saved xx%'*

A2 likened the effects of outsourcing on new service introduction to a pendulum swinging between extremes of informality and formality:

> *'it's like a pendulum, we went to a situation where the processes were all defined and they're very contractual [...] we managed it to the contract but rather than managed it to the relationship, [...] were very rigorous in plan and contractual terms and the contractual processes those that we'd determined between us, so we've got some horrendous processes around service introduction'*

Recently however, the Agency has recognised that the existing structure of its relationship with its vendor hampers effective innovation and is experimenting with solutions to this. For innovation to happen, these highly operational structures must also facilitate the exchange and combination of knowledge. Indeed, the proposition and its underlying literature suggests that an ideal outsourcing structure for the development of innovation competence is one in which complementary competences and associated knowledge resources of the vendor and client can be developed and combined.

The joint team that was more recently formed to move innovation projects forward is a new structural form, not envisaged at the time of outsourcing, nor present in the contract between the parties. The team deliberately has no internal structure that defines who works for the Agency or the vendor, indeed it is envisaged that people from other suppliers could be introduced to the team were this to be needed. In the new joint team formal processes have been minimised. A1 described it in very simple terms:

> *'they get the problem and say, forget all that paperwork, what's the solution?'*

The agreed processes were not to be forgotten but the formal process of document exchange which would now follow up the jointly developed idea was anticipated to flow much more smoothly, as by this stage both sides would have a shared cognitive view of what was actually required. The creation of this joint team could be seen as recognition of the need to develop the type of social and relational capability-building mechanism discussed by Holcomb and Hitt (2007), using a structural solution to this that complemented those already existing in the outsourcing enclave . Commenting on this A1 said,

> *'I think that in any operational organisation it is hard to carve space to think innovatively and again I think that comes back to why having that joint team helps'.*

The formation of the team could be seen to represent a 'local improvement' to knowledge processes (Spender and Baumard, 1995) and thus a move to allow individually held, implicit knowledge resources to develop; a move to the lower left quadrant of figure 6.2.

The blurring of roles and organisational identities in the joint innovation team permits repeated ties to develop between its members driving up levels of trust between the individuals and the client and vendor organisations they represent (Gulati, 1995). The formation of relational social capital in the joint innovation team that higher levels of trust represent, in turn create the climate of a community of practice in which collaboration can take place (Wenger, 1998). Alongside these developments within the joint team, team members can exploit weak ties to their own organisational networks to introduce or create innovation related knowledge (Granovetter, 1973, Burt, 2005). Also, the relative freedom from procedure encourages information redundancy and 'creative chaos', stimulants of the knowledge generation cycle described by Nonaka (1994). The emergence of a community of practice thus represents the completion of the knowledge evolution cycle of Spender and Baumard (1995) in figure 6.2; the individual actions of managers in the Agency and the vendor having created a situation where individuals could build tacit knowledge and contribute this to innovation processes.

As well as the joint innovation team, the Agency has become prepared to allow people from the vendor to interact directly with its wider organisation. This process

has taken time to evolve and has not come naturally to the organisation. The completion of the transformation programme again seemed to provide new opportunities for social capital creation both within the outsourcing enclave and between it and the wider organisation. A4 described this:

> *'we had a relationship relaunch workshop a few weeks ago which was basically around, OK we've got to the end of transformation, we've kicked seven bells out of each other on the way, it's been a very difficult commercial settlement but we've got a commercial settlement, where do we go from here in the next two and a half years of the contract? And how can we work better together and one of the key things coming out of that is joint engagement with the organisation. Because at the moment they don't.'*

Commenting on the actions resulting from this, A1 said:

> *'I'm going out and meeting a number of our end users in a particular end user group. [A2] and I, and I think now we're taking [vendor] with us, it dawned on us that we'd forgotten to involve [vendor], we're just going to sit down with a group of end users and say, tell me your problems'.*

This type of unstructured approach echoes the concept of 'mindful' and 'mindless' IT innovation proposed by Swanson and Ramiller (2004). The Agency's IT strategists, complemented by specialists from the vendor, are well placed 'mindfully' to shape innovation to user needs if the relational social capital that permits unstructured dialogue about those user needs is in place. This introduction of vendor staff into innovation related discussions with the Agency's operational teams can also be seen as an initiative to create structural social capital and the sort of knowledge broker roles described by Burt (2005) based on which productive network ties can be established in the future.

This development of the original processes for managing the outsourcing enclave reflects that the needs of both the Agency and vendor have changed and the

relationship between the parties has matured over time. The original processes reflected the 'as-was' organisation and had to deal with the short term pressures of the transformation. These can now be allowed to develop to reflect the social more than the transactional aspects of the relationship. This can permit the enclave to release process and service innovation benefits that stem from the transformation and improvement of the Agency's IT core (Lyytinen and Rose, 2003, Carlo et al., 2011). Increased structural social capital between the outsourcing enclave and IT users in the Agency not only allows knowledge creation but also gives the vendor a position in the informational and influencing networks that can grow innovation competence (Peppard, 2007).

6.2.2 The Bank

The structure of outsourcing enclaves at the Bank is more complex and flexible and its approach to governance seems to be more relational than that of the Agency. Here too social capital is developing within the outsourcing enclaves and helping to grow knowledge effectively.

The Bank chose to align outsourcing vendors with its structure of development centres, creating multiple outsourcing enclaves, each with a different scope and vendor allocation. The Bank has retained important aspects of innovation competence within its own organisation these being the roles of planning and integrating the work across the development centres. It therefore relies on vendors to work and innovate in the individual centres, not to assemble elements of work into end to end innovations. Much of the human resource is located in offshore locations managed by the chosen vendors.

The Bank set up a control system for the outsourcing enclaves in which the work done by the vendor was checked by its retained subject matter experts, located in each development centre and based in the UK. This provided a structure that ideally would allow the knowledge resources of the two groups to be effectively combined and the work of the vendor to be controlled. This change in the affected individuals' role was described by B4,

> *'we've redeployed those technical resources into different roles and we're now going through the exercise of the skills required in those new roles is very fundamentally different to what they required in the old roles.   So where it was very technically focussed it's now about how we manage strategic partners, how we manage a third party, how we resolve conflict. It's more management of supplier skills versus deep technical skills.'*

The control system complied with the proposal of Roy and Sivakumar (2012); IT work, now done by the vendors, is essential to the risk management and service quality related core competences of the Bank. Therefore rigid and explicit controls are needed to protect the Bank's business. However, two problems with this structure were described in the case study interviews.

The first problem is that staff in the retained team found it difficult to adapt to the new skills they were asked to contribute as their role in the overall structure changed. Reflecting on this, B5 described the challenges people experienced when asked to manage the softer aspects of the relationship,

> *'Well I used to do that, the partner does that now. How do I govern that? How do I assure that? How do I make sure that's working properly? How much say have I got in it? Can I tell them they need to do it this way or do they just have to deliver the quality output in the right price at the right time?*

Many of these questions reflect nuanced and subtle issues that are hard to capture in a formal, contractual agreement. They could also be attributed to deficits in cognitive and relational social capital. B3 commented on the motivational aspects of the same problem,

> *'people might be thinking, you're asking me to do these new things but I'm not getting any recognition for it, whereas people who are doing that, who are in our partners, you're praising them for what we used to do'.*

This apparent disconnection of people from their new roles seems to reflect a problem of identification, also an element in the relational dimension of social capital (Nahapiet and Ghoshal, 1998). The retained team find it hard to lose identification with their old roles as IT specialists and build identification and trust in their new roles as supervisors of specialists in the vendor organisations. Social capital theory would predict that their motivation to contribute and anticipate value from knowledge exchange is hampered by this lack of social identification (Kankanhalli et al., 2005, Hsu and Chang, 2014).

The Bank has recognised that it must transform aspects of its own ways of working if the full benefits of outsourcing are to be realised by the retained team. Interestingly this happened only after the outsourcing transaction had taken place, demonstrating the Bank's strong abilities to reflect internally and then act to modify strategies after their initial execution. B5 commented on how what was originally seen as a sourcing programme turned into one of transformation,

> *'you need to change your skill base in the organisation because you*
> *will need different skills to manage a third party than you do to*
> *manage a set of developers'.*

This echoes the research of Blaxill and Hout (1991) who proposed that outsourcing could lead to reduced efficiency and increased overhead costs if attention was not given to the residual processes of the organisation. B3 commented further on the softer, motivational aspects of the situation saying,

> *'we have to get closer to our people in that context and understand*
> *where people's heads are and whether or not they're struggling with*
> *some of this…my biggest concern is, that is still a hugely rich and*
> *important population of people in fact much more so than they ever*
> *were now. We have to work out with that population, one how to*
> *build succession but also we need to know how to get them fully*
> *motivated in this world. Because if we can then the model will work,*
> *I'm absolutely convinced it will work.'*

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This comment demonstrates that managers recognise the challenge of building a social environment in the outsourcing enclave that can motivate and retain skilled people on the client side of the relationship.

The second problem is the increasing divergence in the nature of the specific knowledge resources owned by the Bank and its vendors as they take up their respective supervisory and working roles (figure 6.1). The supervisory role is retained in the Bank's organisation while the detailed work is now mostly carried out in the different vendors' offshore units. As physical and cognitive distance between them and the offshore developers grows, the Bank's subject matter experts become less knowledgeable about the actual configurations of the individual IT applications that they need to control. B3 commented,

> *'we haven't worked out, that as that knowledge builds in our partners how do you retain the actual knowledge that you get through the coding yourself'.*

This separation of controlling from working roles has created a knowledge gap between the respective teams but also encouraged the realignment of their roles; B3 also said,

> *'although we're QA-ing we're sort of gradually as things change relying upon our partners to help us build the expertise to QA as well'.*

B1 reinforced this point, emphasising the change that was needed in the Bank's approach to knowledge management brought about by the creation of the outsourcing enclaves,

> *'we understand enough about coding standards on our different platforms, if needs be to do a code review [QA], but more likely to make sure there is a good regime in the partner of code reviews'*

This acknowledges that as the effects of outsourcing gradually prevent it doing the work itself, the Bank's retained team must build new capabilities that allow it to ensure that the partner is taking up this role and meeting the goal of risk reduction.

These capabilities now lie more in the ability to connect with the remote workers than in detailed technical knowledge of their task. Commenting on the effects of moving work offshore, B6 said,

> *'go back a couple of years and all of this would have been mine. So I would have been able to, for the most part, probably walk onto a floor somewhere and survey the scene and see people doing analysis, doing design, doing coding, doing testing. Some of the most successful projects we've had recently have had that model, and if it was running a bit hot or it was running a bit behind it would be very quick for me personally to make a decision and do something about that. And what we now have is layers between me and stuff being done that is quite hard to penetrate.'*

B6 also acknowledged that this perception of a loss of control came in exchange for the significant benefits of lower cost and the ability to add capacity to the system more easily than before.

Finally, B2 acknowledged the difficulty the Bank would have in ensuring that these retained roles remained attractive to individuals in the future,

> *'If I wanted to build my career through my 20s and 30s in say security or some technology, are you really going to want to do that at [the Bank]? Where's the career path compared to doing it in a provider whose raison d'etre is to deliver that service?'*

The two problems described here give an interesting insight into the practicalities of setting up outsourcing enclaves. The Bank has a clear strategy, of risk reduction through the engagement of high quality vendors. It has put a structure in place to implement this, with multiple development centres, an open competitive system of vendor engagement and a supervisory hierarchy involving its retained team of subject matter experts. It has however protected the complex role of system integration across the outsourcing enclaves within its own organisation. In its context, where risks are carefully managed, the Bank seems satisfied with the innovation competence it has developed across its outsourcing enclaves. B7 commented on this:

'I think the outsource firms, are very skilled at helping us unlock some value by understanding actually where these dimensions [of opportunity] are and I think they've learned that over time. However I still think we probably don't have quite an open mind in certain areas where we could actually listen.'

Aspects of these challenges that have emerged in the transition process are related to the formation of social capital in the outsourcing enclaves. If left unaddressed, they could threaten the longer term sustainability of the IT competences the enclaves need to deliver.

People struggle to identify with their new roles in the structure, to understand how their changed hierarchical responsibilities should be carried out. Weak identification, an aspect of relational social capital risks damage to motivation and ultimately to individuals' continued career at the Bank, posing potential problems with succession and the preservation of valuable contextual knowledge. Owning knowledge of the detail, a norm of behaviour in the former organisation, must be sacrificed to the new supervisory role in the outsourcing enclave. Effective supervision, which calls for the vendor to behave in an agreed way but in a very remote location, calls for shared cognition and a level of trust and relationship management skill not needed before.

That these issues are recognised by the management group and actions are being taken to address them is a positive sign for the future. They do however demonstrate how social factors in outsourcing projects can take time to emerge, to be recognised and to be addressed.

6.2.3 Conclusion

The proposition examined in this section was:

> IT outsourcing creates unique structural enclaves in which social capital
> allows the knowledge resources of the client and vendor to be combined to
> enhance innovation competence.

In table 6.2 below, this proposition is broken down into its key components and
against each, the key observations from the two cases are shown.

Concept derived from proposition	Observations in Agency case	Observations in Bank case
Creation of unique structural enclaves	A single enclave was created relating to clearly defined IT management tasks. A single vendor was engaged.	Multiple enclaves were defined based on IT functions. A single vendor was engaged for each enclave.
Approach to managing the outsourcing enclave(s)	Transformation project forced rigid, contractually driven management. Later, a more flexible approach was devised, creating a community of practice around the joint innovation team.	Detailed activity control was set up using retained client staff at development centre level. Competence in integration of work was retained in the client organisation.
Formation of social capital in the enclave	The enclave was isolated from the wider organisation, limiting the development of *linking* structural and relational social capital. Transfer of people helped *all* forms of social capital to develop within the enclave.	Lack of identification of retained team with new organisation as disconnection from former skills and responsibilities increased. Development of cognitive and relational social capital was impaired.
Effect on knowledge creation and thus innovation competence	New knowledge not created until the management approach to innovation was changed and the enclave was allowed access to the wider organisation.	Strong IT innovation competence. Its exploitation is limited by conservative attitude to risk. Addressing emerging social capital factors in the enclaves will ensure this competence is sustained by retaining contextual knowledge in the developing communities of practice

Table 6.2: Key observations, Proposition 2

The observations in table 6.2 can now be related to the theory from which the proposition was derived. This is discussed below under three broad headings.

1. Outsourcing as a change in organisational structure:

The literature presents IT outsourcing as a structural change to the client organisation in which human resource from the vendor organisation(s) is combined with that retained by the client (Willcocks et al., 2011). The organisational enclave created by outsourcing represents a community of practice (Brown and Duguid, 1991, Wenger, 1998) that is defined by the client's system scope and vendor choices.

In both cases the transition to outsourcing represented a significant change in the structure of the IT function. This extended beyond the arrangement of functions on the organisational chart to the ways that activities were managed within and between these functions. Both cases show how the initially designed control processes for the enclave were changed in light of experience. This is most evident in the more established enclave seen in the Agency. At the Bank, the larger number of enclaves and the more embedded nature of the retained team in them seems to provide more opportunities for the development of best practice based on growing experience.

Choices about the application of processes of control influenced how the enclaves developed into communities of practice. The more embedded nature of the Bank's human resources into vendor activities (in spite of their geographic isolation) seemed to offer better support for this than the approach developed at the Agency. There, the isolation of the vendor team and its focus on the lengthy transformation project, seemed to restrict development of any practices that were not seen to create direct economic advantage, despite the enclave containing transferred Agency employees

2. Combination of client and vendor knowledge:

In theory, the exchange and combination of knowledge between client and vendor in a well designed outsourcing enclave enables the creation of new knowledge (Tsoukas, 1996), maintains or improves absorptive capacity (Brown and Duguid, 1991, Cohen and Levinthal, 1990) and hence builds innovation competence

(Rottman, 2008b, Zimmermann and Ravishankar, 2014). However, the disruptive
transition to outsourcing may delay this process as revised knowledge processes
become established (Spender and Baumard, 1995).

In both cases the outsourcing decision probably created more isolation of the
technical expertise of the vendor from the wider client organisation. At the Agency
this happened by design, at the Bank by role redefinition and geographical distance.
The isolation is reinforced by contractual agreements and has, to differing extents in
the two cases, limited the development of the knowledge creation processes
described in literature. In both cases the retained IT group remains in an
intermediary role between IT and the wider organisation; this role is weaker in the
more complex structure of outsourcing enclaves at the Bank and stronger at the
Agency. In the latter case, improvements in the relationship are creating levels of
trust that will be likely to change this situation.

Both organisations have encouraged knowledge exchange by building socially
oriented capabilities that complement the contracted structures: at the Agency this
comes from the formation of the joint innovation team, the Bank has recognised the
need for a planned and organised process of change in supervisory skills used within
its outsourcing enclaves. In both cases the need for these changes in the initial
control structures was only recognised over a period of time, showing how
awareness of desired IT competences continues to develop after outsourcing
enclaves have been formed. Given the importance of formal contracts in both cases
and their influence on behaviour, it is not clear that knowledge processes would have
naturally evolved over time to deliver the IT competences required. The cases
suggest therefore that the cyclical development of knowledge processes described
by Spender and Baumard (figure 6.2) needs management push and direction to
happen in outsourcing enclaves where strong contractual governance is present.

3. Effects of social capital on knowledge creation:

Literature describes how social capital dimensions (Nahapiet and Ghoshal, 1998)
support the combination of knowledge resources and improve absorptive capacity.
Structural social capital creates connections between people (eg. Burt, 2005),

cognitive social capital enables a shared understanding of context (eg. Huysman and Wulf, 2006), relational social capital (eg. Fukuyama, 1995) motivates knowledge sharing.

In both cases, the emergent behaviour of the outsourcing enclaves can be analysed using these theories of social capital. At the Agency, the transfer of staff to the outsourcing enclave created strong social capital along all dimensions within it. However, the problems that arose in the transformation project led to the isolation of the outsourcing enclave from the wider organisation. Until recently, this limited the formation of the linking structural and relational social capital, between the enclave and the wider organisation that was needed to support knowledge creation.

At the Bank, the complex but well understood system of development centres provided a basis for the formation of structural social capital both within and between them. This was helped by the retention of a relatively large team of Bank employees after the enclaves were formed. Strong cognitive social capital was evident among the Bank's people, supported by the top-down and clear communication of mission and strategy across the organisation. In this way, the Bank shows a strong innovation and knowledge creation competence. The emerging lack of identification of the retained team with the outsourcing enclave could impair the development of cognitive and relational social capital in the future. Failure to address this might threaten its competence in knowledge creation and thus innovation.

Both cases partially support the proposition that opens this section. Their initial outsourcing designs each succeeded in achieving the immediate goals set for them but did not squarely address the creation of innovation competence. This shortfall was not critical, as innovation competence was not a high priority in either case and in both, important innovation skills were retained in their own organisations. Yet in both cases, increasing IT centrality means that IT innovation competence will play a critical supporting role in future innovation needs and hence it is likely that outsourcing, albeit inadvertently, disrupts the social capital that supports this. This is more evident in the case of the Agency, where social capital was disrupted by the transformation project. But also in the Bank, a thoughtfully developed outsourcing strategy led to a retained team that lost identification with its role, weakening the

relational dimension of social capital in its outsourcing enclaves. However, the actions that each organisation was taking to improve the effectiveness of knowledge combination processes at the time of research show how attention to social capital develops as the outsourcing enclave matures. Such action may require the creation of new structures, as at the Agency, or may call for management attention to social factors in established management routines as at the Bank.

In conclusion, the two cases shows how the unique management structures in outsourcing enclaves influence formation of the different dimensions of social capital. This gives outsourcing enclaves the ability to act as communities of practice in creating new knowledge and innovation competence. Both cases show that it takes time for the disruption in the social capital of the enclave to reduce, allowing management action to address underlying social factors to be taken.

The importance of the time factor justifies its addition to the conceptual framework that was first presented in figure 2.6. The amended framework is shown below as figure 6.3.

Figure 6.3: Amended conceptual framework, proposition 2

It was proposed that the pressure of objectives and the role of the outsourcing contract also affected both the development of social capital and management's ability to influence this. These will be examined further in the following sections of this discussion.

6.3 Proposition 3 - Objectives

'In transition to outsourcing, the deliberate creation of social capital within enclaves is overlooked in favour of securing short term technological or structural objectives.'

IT organisations, like those of the Agency and the Bank have a modular structure akin the technology they manage. Before outsourcing, they had a common set of components: teams that manage technology architecture, business analysis, application development, testing, application management, project management, a structure long institutionalised in IT practice (Olson and Chervany, 1980). These components fulfil consistent purposes, like the hard disk drive, memory cards, keyboard and monitor of a computer. An IT manager who moved from the Agency to the Bank would notice few differences in the apparent organisational structure after taking the different nature of each businesses and its needs for IT into account. It might be assumed that the component nature of IT management structures has the same type of functional standardisation as its technology; that teams can be taken out and exchanged for new teams which are plugged into existing organisational interfaces where connectors and protocols are standardised.

This is, of course an oversimplification of reality. The structure of IT seen in the Agency and the Bank has layers of procedural and social intricacy beneath those expressed through its visible exterior of their organisation charts (Peppard and Ward, 2005). The teams have a broadly common purpose but they are linked by operating and innovation related routines, their 'instruments of action' (Mathews, 2003) that provide the working practices of the organisation. Beneath this process layer are the relationships between individuals and the social practices that together form the social capital of the organisation (Nahapiet and Ghoshal, 1998).

This section will evaluate whether oversimplification of the structures in IT management proved a trap for managers in the Agency and the Bank as they embarked on their outsourcing strategies. As the outsourcing enclaves were created, were these layered complications of structure overlooked in a quest for a more effective means of achieving short term goals than was available before?

6.3.1 The Agency

The Agency took care over the transition to outsourcing. It recognised different aspects of the procedural and social dislocation the project could cause. However the short term goals of the outsourcing project remained prominent and influenced the effectiveness of the enclave.

The Agency and its vendor agreed a step by step shift of the outsourced teams towards what became the outsourcing enclave using a staged 'mobilisation' process. This took place over an 18 month period and had three purposes. First, it aimed to allow the retained IT team to build an understanding of the behaviour they could expect from the outsourcing enclave. The enclave was, according to A6,

> *'told to think in a very different way, particularly in terms of costing'.*

Changing norms of behaviour on the side of the retained team were also expected. A3 described the management approach at the outset,

> *'The one thing that our ex-CIO insisted, […] is that he wanted that*
> *very rigorous management of services, service levels and particularly*
> *commercials'*

Second it formalised the processes by which the teams interacted, allowing non-procedurised activity to be driven out. This gave the Agency a clear idea of the actual IT workload it might need to pay the vendor to carry out. Problems would arise if activities that had previously been handled informally between individuals entered costed streams of work after outsourcing. The need to identify and resolve these was highlighted by A4,

> *'you have to crack that because you're going to get charged for that*
> *in the future so it's best to iron it out yourself'.*

A3 described how this was managed during contract negotiation, leading to the agreement with the vendor,

> *'documenting everything we do, or everything that we did, assessing*
> *whether that was the appropriate thing to continue to do and then*
> *turning it into legal language that could be contracted against'*

Finally the actions of the mobilisation process clearly identified the people who would be affected by outsourcing, A6 described the effect on individuals,

> *'it got the pain of that out of the way very, very quickly in terms of the*
> *realising they were in that pool'.*

This allowed those affected to adjust their perceptions of employment, at the same time taking pressure off people in the retained teams by confirming that their continuity of employment with the Agency would not be affected by the outsourcing project.

This mobilisation process can be analysed in terms of the outsourcing and social capital literature. The decision to outsource was based on a rational assessment of vendor cost and delivered capability relative to those that might be experienced were IT operations to be kept inside the Agency's vertical organisation (Willcocks et al., 2011). There was then an agreed shift both of people and responsibility that flowed from this assessment and was described in detail in the contract. The operational and innovation related routines that linked this group to the retained IT teams were assessed as far as was possible and documented. The stages of the mobilisation process allowed these routines to be tested and refined before the formal transition to outsourcing took place. The second stage uncovered processes that were partly tacit or hidden in the informal relationship networks of the old organisation (Burt, 2005) and allowed some of the inherent uncertainties in IT operations (Earl, 1996) to be identified and recognised in revised agreements. Some other social effects of the act of outsourcing were addressed by the third stage of the mobilisation process, notably the creation and reinforcement of structural and relational social capital with *either* the vendor or the Agency as their future employer (Ho et al., 2003). An organising structure was then set up in the enclave, similar to that which existed before outsourcing.

However, despite the care taken in transition, the relationship between the Agency and the vendor deteriorated during the period of the transformation project which

started as the transition was completed. A1 attributed this in part to contractually and strategically legitimate action taken to enforce contractual agreements,

> *'I've spoken about my previous incumbent and you know he was pretty tough on [Vendor] but he was right to be, they were not performing in terms of the contract and he took some pretty tough action and hurt them very early on in the contract with penalties that were absolutely contractually right'*

A consequence of this tough and contractually oriented approach was that the behavioural structure that had been carefully put in place became rigid. This restricted the development of social capital needed to link the enclave to the client organisation. People on both sides sheltered in their contractually agreed roles and in the established and documented routines. A2 described this period saying,

> *'we managed it to the contract rather than managing it to the relationship'*

The relationship problems led to action that could be interpreted as aiming to rebuild this linking social capital. This started with the replacement of the leaders of both client and vendor teams. A1 said,

> *'I think the need then to replace the people who were in the beginning in the contract, it was right kind of, to swap people out. And we did it, and [Vendor] did it and brought two different people in who looked at things and said OK, that's history now, it hurt us both., how do we move on?'*

In summary, the choice to mobilise in steps over a long period of time led to some reforming of routines and realignment of social capital at working levels. However, the way the agreement was managed in the transformation project phase prevented the development of social capital between the enclave and the wider organisation. This social capital was needed to recognise and develop the opportunities for innovation that the newly transformed IT estate presented. The change in senior personnel has created a more relational approach.

6.3.2 The Bank

The approach to the development of the outsourcing enclaves in the Bank's project was very different from that used at the Agency. Here a radically new organisation structure for the management of IT was developed in parallel with a more gradual roll-out of outsourcing. The Bank moved, over a period of years, from a practice based model of IT resourcing to one with multiple development centres, each aligned to its major areas of technology and staffed predominately by people from a single vendor (one of several 'strategic partners'). Many of these people were located in that partner's offshore facilities in India. Unlike the Agency, which used outsourcing to realign the structure of its IT operations function with little initial change in people, the Bank's outsourcing project had a major objective of reducing risk by changing out a significant portion of the human resources involved in the operation and development of IT. The deployment of outsourcing enclaves would therefore radically change both structure and people at the same time.

The move away from the practice based model and the engagement of 'tier 1' vendors was seen as a way of more effectively capturing and developing knowledge resources. B1, commenting on the situation that existed before, where knowledge was inefficiently transferred between projects,

> *'we'd organised in a way that didn't directly promote the same people*
> *working on the same platforms over an extended period and the*
> *formal responsibility for passing knowledge on',*

B1 went on to comment on the Bank's expectations of the new partners' contribution to knowledge,

> *'I wanted to institutionalise how the knowledge management worked*
> *and formalise transition to a high standard to get that then into the*
> *domain of the outsourcers as well as us and then perpetuate it*
> *forwards, with organisations for whom that transfer of knowledge and*
> *knowledge management regime is part of their lifeblood.'*

This recognises that the former practice model, while an efficient way of using human resources was not so efficient in managing knowledge. Knowledge that was built up in project teams was lost when those teams were broken up and redeployed

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once the project had concluded. Retaining people and their knowledge in development centres, coupled with the vendors' experience in knowledge management would encourage the growth and transfer of knowledge.

Outsourcing also complemented the move towards development centres by addressing the problem of access to human resources and thus specialised knowledge. Before, the Bank had experienced problems in hiring suitably qualified and experienced IT staff and was forced to turn to the contract market. B1 commented on how the use of 'day rate' contractors created either a structural increase in resource cost or a risk of knowledge that critical knowledge could be lost,

> *'we were also using vast numbers of day rate contractors as individuals who may turn up and do a really good job but they either embed themselves in your organisation at contractor money [...] or they arrive, do a job and go and the knowledge leaves with them'*

Engaging major outsourcing vendors with their access to offshore resources was also seen as a way for the Bank to increase the scale of aspects its IT operation when this was needed. B6 confirmed this,

> *'the scale of ramp up that we've done in some of these areas, we simply could not have done that had we not done these transactions with these suppliers. The fact that we can go and mine in a pool of a billion Indians is material and significant'*

B5 reflected on how the Bank's decisions fitted with more general industry developments and summarised how outsourcing would satisfy its resourcing needs,

> *'The market has moved to an outsourcing world and therefore it's typically partner type resources that can give you the skills that you need. In the future. So I think there's an element of cost, an element of scale and an element of skill'*

The risk of continual knowledge loss and the risks this posed to its IT systems were therefore prominent factors in the Bank's decision to use outsourcing. Outsourcing would deliver contractually governed relationships with a range of large, global vendors who specialised in the type of IT resourcing that organisations like the Bank

require and who could guarantee the provision of skilled resources at an agreed cost. This was intended to give the Bank more ability to manage and get value from third parties than was possible with the previous system. B2 summarised this set of aims,

> *'we go with tier 1 providers who are the best in the business and by*
> *working with them rather than trying to build in-house capability with*
> *a bunch of […] permanent people and a bunch of day rate contractors*
> *who are prepared to travel from anywhere. We must be better off*
> *dealing with tier 1 third parties for whom all their other clients are*
> *also screaming out for agility and speed to market'*

The transition project at the Bank was recognised as one that was significant and that could be disruptive. B1 described it as a,

> *'once in a generation transformational change'.*

It was planned to progress in stages, in a similar way to that at the Agency, here however there were multiple vendor transactions and transitions to complete. In the initial phase, the old practice based structure was abandoned in favour of internally resourced development centres. In these people were 'coalesced' around business functions, IT platforms or technical services (testing for example) rather than around the skill group they represented, the model that had been used in the previous practice based structure. This structure reflects a process driven view of an IT enabled organisation (Boynton and Victor, 1991) but also provides a specific lens through which success can be assessed. Development centres represent specific choices in disaggregation as a basis for alignment of IT assets with vendor and internal competence (Aral and Weill, 2007). Then, in a series of transactions over a period of at least three years (the process was not fully completed at the time of research) vendors, or 'strategic partners' as they are called were selected and phased in on a centre by centre basis, forming individual outsourcing enclaves.

This was not a smooth process and there is evidence that the Bank learned from early mistakes as it progressed. For example, it communicated the rationale for change in a way that acknowledged the importance of social factors in the changing

organisation alongside the goals that outsourcing aimed to achieve. B3 described
how trust was built during this process,

> *'And our first two attempts to source with the mainframe stuff with*
> *[vendor] and [vendor] were woeful. So our in-house team were*
> *hugely disbelieving of our ability to do this well. So when we came to*
> *do it two years ago and really kicked this off in anger there was a lot*
> *of conversations with people to convince people that we had learned*
> *lessons from having done it before and that we wouldn't do that*
> *again'*

As discussed above, protection of knowledge was a key goal of the structural
change that the development centres represented. The introduction of the strategic
partners as a knowledge resource was a further step in achieving this. To supervise
and monitor the quality of work that was carried out by the offshore people working
for the strategic partner in each centre, teams of 'subject matter experts' were built
from the Bank's own staff. The Bank refer to this group as its technical practice.
The technical practice was to be responsible for technical architecture, high level
designs and for controlling the quality of work that was actually received from the
relevant partner. B5 described how the importance of knowledge processes in the
outsourcing enclave was recognised by the Bank,

> *'There's been a big focus on knowledge transfer, and there's a big*
> *focus on knowledge management with the partner […] I've got people*
> *that've been here for 30 or 40 years in [the Bank] and got all that*
> *knowledge, you can't transfer that knowledge in six weeks.'*

But the viability of this in the longer term was questioned by others. B2 expressed
this concern,

> *'their knowledge base and their skill set will over time just become*
> *more and more redundant. It's got a half life which means it'll decay,*
> *the danger is that they don't realise it's decaying and then it becomes*
> *out of date knowledge and out of date skills'*

Despite this debate, it was evident that alongside achievement of its short term goals, the Bank had carefully considered how its existing and future knowledge resource would be managed both before and during the outsourcing transition. This could be seen in its actions to identify the internal knowledge that needed to be protected in its 'subject matter expert' team, in the attention to knowledge processes in the outsourcing enclaves that were formed and in the steps it took to convince its retained people of the viability of the chosen process. The gradual rollout of the outsourcing enclaves also allowed emerging problems to be recognised and tackled. B5 gave specific examples of this, reflecting on questions the retained team were asking in their process of learning their new roles,

> *'OK well I used to do that, the partner does that now, how do I govern that? How do I assure that? How do I make sure that's working properly? How much say have I got in it? Can I tell them they need to do it this way or do they just have to deliver the quality output in the right price at the right time?'*

B4 described how the development of good practice in end-to-end service management, an important factor in the risk reduction goal, had called for action not recognised at the time of outsourcing,

> *'so we're starting to do it by having platform forums so we're bringing all the suppliers in on a platform end to end and we're having conversations about issues, things that we can do differently as a almost like as a virtual team'*

There is evidence of a drive to work with the vendors, accepting that problems might come up from time to time but also that the parties must learn together how best to tackle these. B2 said

> *'let's run towards each other , however deeply unnatural it may feel, if we run away from each other this is just going to get worse'*.

This attitude towards collaboration and learning in pursuit of shared goals was reflected on the vendor side of the outsourcing enclaves, B8 commented on the relationship,

> *'do you want partnership or do you want a supplier? Do you want master-servant or do you want a partnership, what way do you want to get to it? I think [the Bank] have got a particularly enlightened and thoughtful approach which gets them better value than anybody else ultimately'.*

Comments like this indicate a degree of goodwill trust in the relationship, accepting things might go wrong but parties can benefit by continuing to work in partnership.

In summary, the description of the transition process followed by the Bank shows how attention was given to social capital and knowledge management processes alongside the achievement of its risk reduction goal. The step by step change has allowed both client and vendor to learn about emergent positive and negative social factors in the enclaves and develop ways of managing these.

6.3.3. Conclusion

The proposition examined in this section was:

> In transition to outsourcing, the deliberate creation of social capital within enclaves is overlooked in favour of securing short term technological or structural objectives.

In table 6.3 below, this proposition is broken down into its key components and against each, the key observations from the two cases are shown.

Concept derived from proposition	Observations in Agency case	Observations in Bank case
Initial goal of outsourcing project	Quality improvement and cost reduction through documentation of process and technological transformation.	Risk reduction brought about by change in people, structure and competences gained from relationships with large vendors.
Effect of planned transition approach on the formation of social capital	Staged 'mobilisation' separately reinforced structural, cognitive and relational social capital in the enclave and the retained IT organisation.	Staged transition to multiple outsourcing enclaves created initial structural and relational social capital. It also allowed learning about social effects to be incorporated with the transition programme.
Issues during transition that affected social capital	Rigorous management of transformation project impeded the formation of linking structural and relational social capital.	Early implementation problems encouraged management to convince retained staff that the structure was right and act to protect and transfer knowledge within the formed enclaves.
Resulting social capital around the outsourcing enclave	Eventual personnel change at the top of client and vendor teams led to reconsideration of how linking social capital. Could be built.	Outsourcing encouraged growth of social capital in the enclaves. The effects of required skill changes on role identification among the retained team are a recognised barrier to the development of relational social capital.

Table 6.3: Key observations, Proposition 3

The observations in table 6.3 can now be related to the theory from which the proposition was derived. This is discussed below under three broad headings.

1. Strategic goals of transition to IT outsourcing:

Strategic management literature describes how transition to IT outsourcing could be aimed to achieve one or more of at least three potential goals:

- *Reduced transaction cost (Coase, 1937, Williamson, 1985) and ongoing operational costs (eg. Kroes and Ghosh, 2010),*

- *Competitive advantage based on stronger IT management competences (Barney, 1991, Levina and Ross, 2003),*

- *Access to improved IT knowledge and thus innovation competence (Contractor et al., 2010, Kogut and Zander, 1992).*

One or more of these goals can be recognised in both the cases. The initial focus of each outsourcing transition was on IT competence; improved quality of IT services at the Agency, reduced risk of IT failure at the Bank. Achieving cost reductions was a clear goal for the Agency with a focus on ongoing operational costs. For the Bank, operational cost savings emerged as an important 'by-product' of outsourcing, not a clear goal of the project but an achievement that was certainly welcome. Transaction cost optimisation did not strongly emerge as a factor for either organisation, only indirectly in the savings they might experience on the cost of searching for skills and in the case of the Bank in the ability to change resourcing levels quickly. Competitive advantage was not a factor considered by the Agency, not being relevant to its public service goals. For the Bank it was a more significant factor but not one to be achieved at the expense of higher risks.

Each goal mentioned above was envisaged to be supported in some way by the IT knowledge the respective vendor would bring. Both organisations also had confidence in the support that knowledge in their retained organisation would provide for innovation and designed their outsourcing enclaves to use this. At the Bank, this

confidence was somewhat qualified by concerns about retained knowledge degradation over time.

2. The potential conflict between transactional goals and social capital management:

The challenge of outsourcing has been extensively analysed in academic literature from transactional and competence perspectives (eg. Willcocks et al., 2011) although there is more recent attention to its effects on innovation (Lacity et al., 2016) and the social factors that lead to this. The management techniques needed to control transactions and competences may clash with those needed for innovation (Aubert et al., 2015) and social capital effects are hard to manage (eg. Ghosh and Scott, 2009).

At the Agency, the transition process towards outsourcing seemed more oriented to the subsequent effective management of transactions than to the creation of social capital. However the careful mobilisation process, along with the pressure created during the transformation project seems to have strengthened social capital within the separated teams and at the same time discouraged its formation in the links between them. This supports the notion of the management 'paradox' around outsourcing proposed by Aubert et al (2015).

The Bank used a more complex process with multiple transitions over a period of time. It paid significant attention to knowledge protection and management, carefully considering the social effects of the transition on its retained team. This, alongside contract management, seemed to allow the social and transactional effects of outsourcing transition to be managed in parallel. This has created a situation where innovation competences are evident alongside the transactional benefits of outsourcing.

3. Social capital is overlooked during transition as its development cannot be planned:

Literature proposes that the critical decisions in outsourcing transition (Willcocks et al., 2011) force management focus onto goals of structure, technology and resulting IT competence that can be agreed at the outset of the contract (Susarla et al., 2010).

This suggests that the intangible social capital and knowledge related elements of the IT task may be overlooked.

The situation that initially developed in the Agency supported this proposition but now does not. The early focus on transformation and the achievement of the contractually agreed goals forced social capital and knowledge considerations aside. However, the Agency case also shows how this situation can change when different personalities become involved. In the later stages of the relationship there is evidence of a stronger management focus on building linking social capital between the outsourcing enclave and the retained team both in day-to-day relationships and in the formation of the dedicated innovation team.

The case of the Bank refutes the proposition. Although there are problems that remain to be resolved, managers' accounts of the approach to transition demonstrate how knowledge factors and the social capital that underlies these have been carefully considered and managed throughout. The system of development centres as outsourcing enclaves encourages the growth of structural and relational social capital both within the enclave and between them. The embedded retained experts in each enclave aid this process and blur client/vendor boundaries in the overall system, preventing the type of 'us and them' relationship breakdown seen in the early phase of the Agency's project.

The proposition that opens this section suggests that transition forces a focus on the shaded areas of the framework shown in figure 6.4.
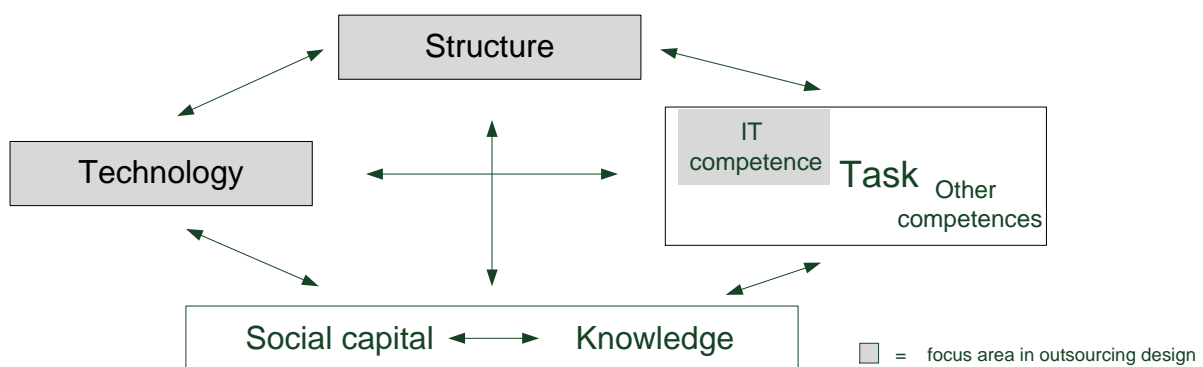

Figure 6.4: Proposition 3, social capital and knowledge are overlooked

The evidence from the cases discussed here refutes this. Social capital factors were taken into account by both organisations. This happened later in the case of the Agency where after a successful transition, attention to social capital was dropped when the technological transformation project became problematic. The Bank recognised the potential social capital effects on important knowledge resources in its structurally more radical project and continues to act to address these.

Relating this to the framework of figure 2.10, it can be concluded that the two cases show how learning from the achievement of *short term* objectives can positively impinge on the formation social capital within the outsourcing enclave, once this has stabilised after outsourcing transition. The cases suggest that the framework should be modified as shown in figure 6.5.
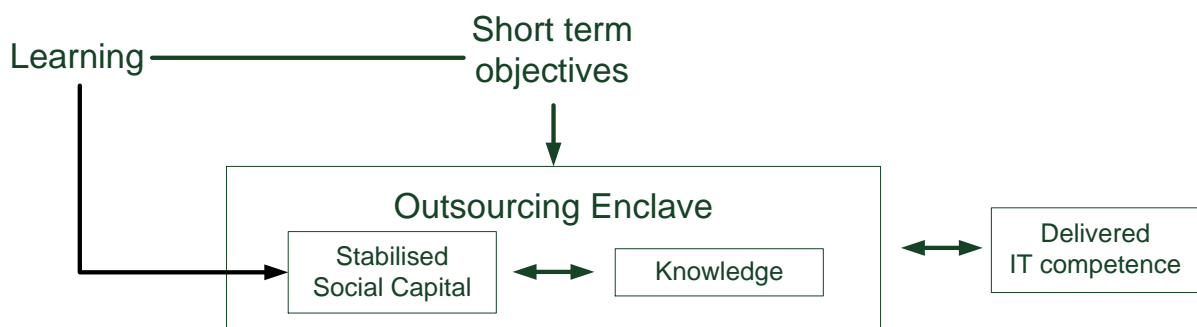
Figure 6.5: Amended conceptual framework, proposition 3

Progressive experience in the achievement (or shortfall) of short term objectives leads to increased learning about the importance of social capital. This social capital might be within outsourcing enclaves or may link them to other enclaves, or internal units, in the client organisation. Management attention can therefore turn from achievement of the initially held objectives of the outsourcing project to managing the social capital that enables its longer term effectiveness. The two cases demonstrate this in different ways: in the Agency the management of social capital is a response to failure in aspects of the relationship that have become important, at the Bank the social capital was more deliberately managed as part of the transition process.

6.4 Proposition 4 - Governance

'The contractual governance applied to IT outsourcing enclaves forces a simplification and codification of knowledge that can limit social capital formation and hence innovative competence.'

The background to their respective outsourcing decisions influenced the choices the two case organisations made about the performance goals they were seeking. These goals were reflected in the formal agreements made with the chosen vendors. These agreements in turn influenced the type of governance that was applied, having consequences for the way both operational and innovation related IT competences were subsequently developed.

This section will discuss how the performance of the outsourcing enclaves in each case was affected by the contractual governance that was applied to them. Specifically it aims to identify how this affected the formation of social capital and hence the ability to create and manage knowledge.

6.4.1 The Agency

The Agency initially planned to use outsourcing to allow more managerial focus on its core mission which did not include delivery of IT competences. That objective seemed to be dropped in the early stages of the procurement process, probably as a result of the influence of a new CIO (Chief Information Officer – the manager responsible for the IT department in the Agency). Objectives shifted to quality improvement and cost reduction. A4 described this change,

> *'we started thinking about this in 2006, 2007 and didn't actually deliver it until October 2009 and the objectives that we had in 2009 were different from the ones we had in 2006, 2007 the original ones were, this is not a basket case but actually it's a standard outsource in terms of focus on your core responsibilities and this isn't something that [the Agency] should be doing'*

A4 went on to explain how outsourcing would achieve quality improvement by transforming an aging IT estate, which had suffered a period of under-investment, and then bring lower costs than before as a operations became more efficient and quality related failures were reduced. The need for skilled people with the knowledge to transform the estate was recognised, coupled with acceptance that these people could not, for all sorts of practical reasons, be recruited into the Agency as employees. Outsourcing became a means of securing the transformation, as well as resolving some of the inefficiency costs in the way human resources had previously been engaged. This could therefore be described as a 'transitional' outsourcing project (Lacity and Hirschheim, 1995).

The early move away from the 'focus' objective could be seen to demonstrate how contractual practicalities came to have a strong influence over the Agency's approach to IT outsourcing procurement and governance. Although the Agency's original focus strategy was in line with that of the early proponents of outsourcing (Quinn and Hilmer, 1994) and strategic management theories concerning use of strategic resources to achieve advantage (Penrose, 1959, Barney, 1991); the shift of objectives towards the quality of the Agency's IT estate, not only shows more pragmatic and short term thinking but also consideration of how such services could practically be procured. A3 summarised this saying,

> *'key thing for us was that we were able to produce something that*
> *would generate higher quality, lower cost but sustainable'.*

Goals, like those set by the Agency, for the transformation or improvement of technology or competences in the IT system can be precise and amenable to contracting. A3 described the formal and legalistic process that was used to agree exactly what the vendor was required to deliver,

> *'So the requirements were in essence, A6 and his team documenting*
> *everything we do, or everything that we did, assessing whether that*
> *was the appropriate thing to continue to do and then turning it into*
> *legal language that could be contracted against.'*

This structured procurement process allowed detailed interaction between the Agency and the prospective vendors over the precise requirements, leaving little room for misunderstanding. The services the vendor needed to supply in the transformation and operating phases were precisely defined and catalogued. A3, who had been involved in the process said,

'it literally involved a year of being stuck in a horrible room with a day-in day-out turnaround of suppliers coming to talk to us, to negotiate through what we were after'.

This led to a clearly shared understanding of what should be delivered, expressed as codified agreements in the outsourcing contract. This process seems to be partly in line with that proposed by Lacity et al (1995), an expert negotiating team was formed which addressed some of the complexity inherent in such an agreement, however the seven year contract that was agreed did not comply with Lacity et al's recommendation to make short term outsourcing agreements. The size of the contract, its 'transform then run' nature and the procurement effort of moving from 60 initial candidate suppliers to one final vendor demonstrate how a short term agreement would have been hard for either party to justify given the cost of the procurement process.

In contrast, the longer term benefits that might arise from new knowledge creation and innovation are more difficult to agree in a contract. A1 summed up a shortfall of the existing contract between the Agency and its vendor,

'One of the key factors for me that is missing from our contract with [Vendor] is some sort of performance, true kind of performance assessment or profit sharing or gainsharing mechanism. Because that's one of the things that has really hit hard for us.'

Significant causal ambiguity (Williamson, 1985) exists between the actions an IT outsourcing vendor can be contractually encouraged to take and its client's achievement of softer issues like innovation or improved focus on core activities. A1 commented on the contractual incentive mechanisms that were in place,

> *'I don't think they incentivise innovation whether it's increasing productivity or whatever. So the only innovation that is incentivised is the stuff that we're clear about at the time.'*

The non-contractual incentives for vendors to be innovative outside the provisions of formal agreements was mentioned by A5,

> *'What gives the hunger and the appetite for a vendor to go beyond where we are now? [...] What is it that gives them that competitive edge as well really and how are they going to be able to look to the new future and how quickly do they respond to it? I just feel at the moment, and it's probably more of a personal thing that they're waiting to be told. ...saying do I wait to be invited to a meeting or do I invite myself?'*

These comments point to one view of the problem of making contractual agreements that can handle contextual uncertainty.

Another view was advanced by A3 who described how provisions for change were actually built into the contract,

> *'we worked through with the suppliers, [...], how we would deal with changes to what we do. We dealt with it via a very clearly identified change control process and which is essentially put things into kind of three categories: stuff that kind of changes as you go along, dot upgrades that kind of thing, new services that come along as part of business as usual, stuff that gets retired [...] We came up with a very clear project process that says if we are going to change something significantly then this is how we'll go about doing it. We also put in specific provision for what would happen if for example the Agency was chopped in two.'*

The Agency's vendor A7 endorsed this more contractually oriented view. The vendor is expected continuously to improve the efficiency of the outsourcing enclave. This effectively represents a contractual commitment to innovation albeit one limited in scope to the agreed IT services the enclave must deliver. In other important areas

such as the 'pass-through' services provided by third parties on behalf of the vendor and in general business and end-user efficiency there is no contractual incentive for the vendor to be innovative. Perversely, innovation that resulted in a reduction of pass-through cost would actually reduce the vendor's profits overall. This leads to a pattern of innovation that is patchy and driven by short term contracted profit opportunity rather than long term structural improvement in services and thus an enduring relationship.

The codified change procedures in the contract did not seem to lead to the type of IT innovation that was more broadly wanted among the Agency's IT team. Reflecting on how well the contract covered the Agency's needs for innovation, A3 said,

> *'I think it is a curate's egg. I think it is probably harmful to the purer research end of innovation and safer for the Agency wide introduction of new stuff, if I can put it that way'*

This comment reveals the complexity inherent to IT innovation that makes its clear description in the necessarily simple and codified language of a contract practically impossible. Without a mitigating mechanism of strong relational governance built on social capital (Oshri et al., 2015), this leads inevitably to a real-world example of incomplete contracting in the presence of opportunism (Williamson, 1985).

As discussed earlier in this chapter, the way that the contract was managed during the transformation phase, seemed to limit the development of more relational approaches to governance. A6 reflected on the early period of the relationship,

> *'To start with it was managing a crisis. Because when [Vendor] took over things were fine for the first few weeks obviously because the existing team were doing the existing things. [Vendor] then started to introduce their own processes and things went wrong and we had a particularly difficult CIO here as well which didn't help.'*

A4, described how the contract had, until recently, remained central to the relationship,

> *'one of the common things that I've heard is that you spend ages*
> *doing the contract and then you put it on the shelf and never read it*
> *again and you just get things working. This relationship has never*
> *been like that, the contract's out every day, every day. I don't think a*
> *day's gone by in the last six months when I haven't had to read the*
> *contract and I'm not like that, I'm more relationship than contract'*

The centrality of the contract was also mentioned by A6,

> *'when there are stressful periods then as you say we just refer back to*
> *the contract and the contract becomes referenced in every*
> *conversation. On both sides, we're as bad as [Vendor] in that'*

Strong commercial pressure and an approach that was contractually oriented from the start encouraged both parties to stick closely to the agreed provisions. The focus on contractual approaches to governance on both sides of the relationship seemed to restrict the development of the social capital needed to allow the more relational governance mentioned by A5 above. This in turn discouraged the development of the non-contracted, more socially oriented activities that could deliver the type of reactive change sought by the more innovation oriented managers in the Agency.

In support of the new approach to innovation discussed earlier in this chapter the parties were working on a 'relaunch' of their relationship. This involved making agreements about ways of working that will complement the agreements in the contract. A4 discussed these saying,

> *'we had a relationship relaunch workshop a few weeks ago which was*
> *basically around, OK we've got to the end of transformation, we've*
> *kicked seven bells out of each other on the way, it's been a very*
> *difficult commercial settlement but we've got a commercial settlement,*
> *where do we go from here?'*

A4 went on to describe how this would lead to a new, more co-operative approach,

> *'ways of working, how we want to work with our teams, behaviour are also now being developed'*

This could be seen as the spread of a more relational approach to governance, already established at the senior level of management, to the wider group of staff in the outsourcing enclave.

6.4.2 The Bank

The Bank's aim of risk reduction led it to build a structure of development centres in which multiple, clearly defined outsourcing enclaves could be created. In each enclave vendor resources, knowledge and skill would be deployed. The Bank progressively selected vendors and implemented outsourcing on a centre by centre basis over a number of years. B1 described how, by learning from its competition, the Bank had rejected the use of a single vendor along the lines of the model used by the Agency,

> *'we had the advantage of being able to look at what some other people had done and see what had worked well and what had worked less well, that took us away from what I would describe as lock, stock and barrel, give it all to one organisation which the single organisation takes the problem or collection of problems off your hands, but I think you've then lost some commercial control and placed a lot of trust in that outsource provider and then you've got a choice about what you retain'*

Possibly as a consequence, the Bank's configuration of outsourcing is more squarely placed towards the developed end of the industry learning curve (Willcocks, 2011). It features use of multiple vendors, of offshore resources and at least a consideration of business process outsourcing.

The role of the contract is important at the Bank, but probably markedly less so than at the Agency. A word frequency analysis of the interview transcripts made with NVivo shows that in interviews at the Bank the word 'contract' was the 22nd most common, representing 0.45% of the total words. An identical test on the Agency's

transcripts revealed 'contract' as the 3rd most common word, with an incidence of 1.03%.

The approach to planning the Bank's outsourcing enclaves was therefore described more in terms of how the system would work, the relationships required and the management of processes within the enclaves. B1 described this,

> *'we went through a sizing exercise domain by domain across the development centres to say, how many people do we need, both in a high level design space and within the development centre in a design capacity, in order to manage the work of the partner, be able to execute the high level design based on the complexity of the systems, the volume of work typically undertaken on those systems and so on'*

The process of contracting came across as one that was led by performance rather than one that created and managed it. This was reflected in a comment by B7,

> *'we've set up a number of development centres, we've got a number of contracts., they won't all be right. There'll be some things to be done, some of the partners will be really great at some areas and some won't be so great at others. So we've still go that learning but also we've got an internal organisation which is trying to learn with it and we're having to give up control which makes us feel uncomfortable as well'*

In support of this, there is evidence that the Bank's strong contract management function has been open to an ongoing renegotiation of the terms and conditions of its outsourcing relationships as all parties learn about their effectiveness and weaknesses. B2 summed up the approach of the vendors to unexpected changes,

> *'they could say, actually why don't we split the dibs in some way and if you do this, we could do that, and they're trying to find a third way which makes something that was a lose/lose become a win/win. And if they've got the appetite to do that then you know you're committed to this long term relationship as opposed to just taking your money'.*

This sensitivity to the potential need for change, acceptance of the consequences of this and precedence given to the long term relationship perhaps reflects the Bank's risk averse nature; reduction of risk requires avoiding the negative consequences of stagnant relationships and building an attitude that allows change and resists rigid pursuit of inappropriate policies. B2 described this,

> *'there's a very thin line between things which are stable which is a really positive thing and things which are stagnant which is a really negative thing'*

One way the Bank avoids stagnancy is by accepting the nature of the contract as incomplete and that as new information is obtained the contract needs to be adapted to accommodate this (Williamson, 1985). It also recognises that such adaptation might come at a cost to itself. The Bank's ongoing monitoring of contract effectiveness and ability to review agreements contrasts with the Agency's period of rigid contractual governance which yielded tangible benefits but damaged social capital in the relationship.

This is not to say that contractual governance is neglected by the Bank. B5 pointed to its importance alongside the maintenance of a good relationship,

> *'there was very much a relationship pull in those contract negotiations, […] I know my [Vendor] account manager well and I've known him for years and I'll talk to him about his house and his daughter and everything and then I'll talk to him about the contract side of things and I'll say to him things like, well unless you get that sorted I'm not going to pay you. Because you need your revenue streams and you need your good customer satisfaction survey scores and actually those are the two things that motivate them at the end of the day'*

B1 mentioned how the contract provided an important basis for the development of the agreements with vendors as operating contexts changed,

> *'if I ever take the contract out of the drawer in order to beat the*
> *supplier over the head with it, then that's a problem, but we worked*
> *together to define as best we could on day one with a sophisticated*
> *service, what is was we were buying and what the partner was signing*
> *up to deliver and that is then supposed to be our guide. Now in all*
> *cases we will end up wiser one year in, two years in, three years in'*

Both these comments illustrate a dichotomy in the Bank's relationship with its vendors. The language used implies the existence of strong structural and relational social capital in the relevant outsourcing enclaves. In parallel however, each party acknowledges and respects the formal simplification and codification of the required activities that the contract represents.

The vendors used by the Bank reflected this in their comments. B9 described the problem of reflecting relationship considerations in contracts and how this was approached in the Bank's outsourcing enclaves,

> *'you can only get there if there is give and take on both sides and*
> *everything else, so as I say I think here is probably better than most at*
> *that and that is through dialogue and the way that the relationships*
> *are managed'*

B8 was also positive about the Bank's approach to managing the relationship with its partners,

> *'I think [the Bank] have a fantastic attitude around partnering which*
> *serves them incredibly well and I think a number of the other banks*
> *are absolutely brutal about it, it's a blood sport'*

Poppo and Zenger (2002) commenting on contracts propose that 'Well specified contracts narrow the domain and severity of risk to which an exchange is exposed and thereby encourage co-operation and trust' (p.708). This comment relates well to the way the Bank approaches contracting and raises another contrast to the situation at the Agency. At the Bank the contracting framework seems to set up the conditions in which the Bank and its vendors can interact ('the domain') but at the same time does not rigidly impose these conditions if such an action is seen to be

ineffective.   The Agency's contract does this as well, but might also over-specify 'the exchange', the actual artefacts the parties pass between each other, also the relational climate in the Agency was one of penalty based control.

In summary, although the Bank had codified its outsourcing arrangements in enforceable contracts, the relationship with vendors was more conducive to the development of their complementary competences within the outsourcing enclaves. Even in the presence of codified agreements this leads to a more flexible set of role definitions, promoting social capital formation and growth of IT innovation competence.

6.4.3 Conclusion

The proposition examined in this section was:

> The contractual governance applied to IT outsourcing enclaves forces a
> simplification and codification of knowledge that can limit social capital
> formation and hence innovative competence.

In table 6.4 below, this proposition is broken down into its key components and
against each, the key observations from the two cases are shown

Concept derived from proposition	Observations in Agency case	Observations in Bank case
Approach to setting up contractual governance processes	Disciplined contractual build with a single vendor reduced uncertainty by codifying and agreeing IT services known to be needed from the enclave at the time.	Disciplined contractual approach with multiple vendors implemented in phases to allow best internal and external practices to be recognised.
Resulting fitness of the contract for the developing purpose of the enclave	Contract did not capture innovation needs in full and provided a 'refuge' for parties opportunistically to dispute respective interpretations.	Contractual agreements are enforced but there is an acceptance that agreements may need to change as the operating context develops.
Effect of contractual governance on social capital formation	Contractual disputes in the outsourcing enclave restricted the development of relational social capital and thus impeded new knowledge sharing behaviours.	Strong relational governance encourages formation of structural and relational social capital. (This may be offset by the transitional problems observed under propositions 2 and 3.)
Effect of contractual governance on the enclave's ability to deliver an IT innovation competence	Innovation was limited until recently. Efforts to create a more relational approach to governance alongside the contract in support of more flexible innovation processes.	Long term contractual flexibility is set in a context of short term discipline. This, along with social capital supports the development of innovation competence.

Table 6.4: Key observations, Proposition 4

The observations in table 6.4 can now be related to the theory from which the proposition was derived. This is discussed below under two broad headings.

1. The governance applied to the IT outsourcing relationship in practice

Literature suggests that a variety of relationship forms might be appropriate for different IT outsourcing goals (Henderson, 1990, Roy and Sivakumar, 2012). These will call for different types of contractual agreement and consequent choices about mix of contractual and relational governance techniques that allow the creation of social capital in the outsourcing enclave (Lacity et al., 1995, Lioliou and Zimmermann, 2015, Miranda and Kavan, 2005b, Oshri et al., 2015, Poppo and Zenger, 2002).

The cases broadly support this interpretation of the literature. Different relationship forms can be seen to be applied in each; the Agency being more simple, with a single outsourcing enclave and contract, the Bank much more complex. Within the outsourcing relationship each case shows both contractual and relational governance processes. Both client and vendor management describe the importance of each and seem to use them in their personal relationships. Comparing the two cases however, different perspectives lead the approach to governance.

The Agency's approach is more contractual with strong initial adherence to the promissory contract. It has been effective in achieving initially agreed transformation objectives of improved quality and cost. The development of a psychological contract, based on relational social capital has been restricted until recently, limiting IT innovation competence

The Bank's approach is more relational and seems to respect structural and relational social capital factors within its constraining risk management objective. This allowed more rapid formation of a psychological contract and its associated behaviours. Cost savings have been achieved, but not to the maximum level possible, however the relationship shows more flexibility to adapt to the Bank's changing competitive context.

2. The effect of contractual governance on social capital and IT innovation competence

Literature describes how contracts that codify the IT competences outsourcing enclaves must deliver are likely to be complex (Susarla et al., 2010, Willcocks et al., 2011) yet incomplete (Williamson, 1985). Individuals' understanding of these contracts will define their behaviour and actions (Conner and Prahalad, 1996, Koh et al., 2004) and will result in the formation of a psychological contract that is different from the formal promissory agreement (Lioliou et al., 2014, Miranda and Kavan, 2005b). IT competences that are based on the initial contract only may be too inflexible to allow the social capital and knowledge creation needed for IT innovation (Aubert et al., 2015).

The Agency case broadly conforms to this interpretation of the theory. It tried to capture detailed requirements for outsourcing in a strictly enforced 'promissory' contract that seemed to aim for a complete description of how and where the vendor should contribute to the management of IT. This was successful in securing the Agency's short term goals of quality and cost improvement but was eventually shown to be incomplete as parties argued over how specific elements of the contract should be interpreted. This in turn led to a situation where, once the initial transformation project was complete, both sides' adherence to the contract seemed to restrict their ability to form the social capital that could create the innovation competences needed to derive benefits from the transformed IT estate.

The Bank took a more relaxed approach to contractual governance, working hard to build relational processes with its vendors while keeping a close eye on risk. Its more atomised approach to IT management, with vendors divided across development centres and the presence of its own people in these, gave flexibility in the formation of psychological contracts. Essentially the Bank's configuration of outsourcing enclaves allowed it to internalise some of the areas where problems of contractual codification and simplification might restrict social capital and knowledge creation. An example of this would be found in the systems integration function.

This seems at least to challenge the paradox of outsourcing management described by Aubert et al (2015). It has helped to build social capital and an effective innovation relationship with its vendors, albeit with higher costs. Further, the competitive structure that has been set up between vendors motivates them to seek knowledge and show commitment and ability in innovation as this may strengthen their position when contracts are renegotiated in the future.

The cases respectively support and refute the proposition that opens this section. Both show how governance based on contractual codification and simplification can restrict the development of social capital in the outsourcing enclave. However, they contrast each other in the way that the relational governance applied by client and vendor moderates this effect. In the case of the Agency, weaker relational governance allowed the contract to be dominant, at least until recently, therefore supporting the proposition. In the case of the Bank a much stronger relational approach has moderated the effects of the contract, refuting the proposition.

The conceptual framework of figure 2.10 proposes a simplistic relationship between contractual governance and the social capital processes in the outsourcing enclave, the first limiting the second. The two cases illustrate a more complex picture, the moderating role of relational governance being critical to each. This effect is added to the (now fully) adapted framework of figure 2.10 below in figure 6.6.
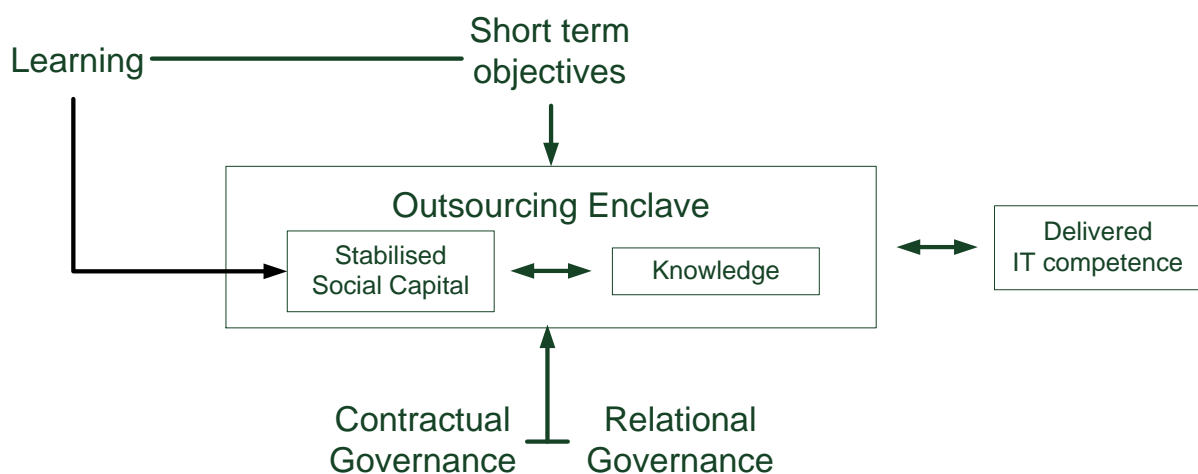

Figure 6.6: Adapted conceptual framework, proposition 2,3 and 4

6.5 Case studies from existing literature

To supplement the empirical findings of this research project, a further five cases of IT outsourcing were identified in existing academic literature. These were either already known to the author or found through a search on the EBSCO database. In this section these cases are individually described in brief and their relationship to the overall findings of this project are proposed. Following this, the cases' support or refutation of the four propositions that are used in this discussion is described.

This section therefore aims to broaden the empirical basis of this thesis, adding to the two case studies which are unique to it as presented in chapters 4 and 5. It also serves to relate the contribution of the two dedicated cases and their analysis that was presented in the first part of this chapter to a wider body of empirical work on IT outsourcing that precedes this thesis.

For convenience of the reader, the analysis in the first section below is mostly presented in tabular form.

6.5.1 Case descriptions and their relationship to this research project

Case 1:

Author(s) and year	Case description	Summary
Kelly and Noonan (2008)	Outsourcing of critical system development for a small financial services firm to a large offshore IT organisation in India.	The case interprets how trust develops between the people and organisations involved as their outsourcing relationship evolves through phases of familiarisation and ongoing operation. It is based on the theoretical analysis of trust proposed by Giddens (1990). Trust is here considered as a facet of social capital, one that reduces anxiety in the relationship. Its creation in response to the real and symbolic actions taken by each party as the relationship develops is described. Building trust in this case created social capital that sustained the project through difficult phases. Reduction in anxiety allowed reference to the contract to be delayed in exchange for making progress with the work.

Relationship of the case to this research project:
The case studies of the Agency and the Bank confirm that trust is an important factor in the creation of social capital but do not examine it to the depth achieved here. The Agency case shows how low trust levels create anxiety and lead to extensive reference back to contractual agreements. The Bank case shows how bringing together people with a similar background eases the creation of social relationships and thus trust. The research project complements this case with its examination of how organising *structures*, within which these trusting relationships can form, can be built in *existing* outsourcing arrangements to encourage *innovative thinking and action*. These organising structures are, to an extent, independent of the relationships that come to exist within them. The research also considers outsourcing arrangements that are *larger and more complex*, in terms of breadth of operation than this case. The research project additionally identifies how cognitive consequences of formal contracting, necessary in outsourcing, may actually serve to restrict the development of trust between the parties.

Case 2:

Author(s) and year	Case description	Summary
Rottman (2008b)	Creation of social capital in software development alliances between a US manufacturing firm and vendors in India.	The case shows how attention to the relational, structural and cognitive dimensions of social capital proposed by Nahapiet and Ghoshal (1998) can lead to more effective domain knowledge transfer between client and vendor. Social capital was created through specific practices that addressed each of its three dimensions as software development capacity was increased. This eased the knowledge transfer process from the US base to the vendors and improved the quality and productivity of the vendors' offshore teams.

Relationship of the case to this research project:

This case identifies detailed strategies for the creation of social capital but provides a context where there is little change to the work of the retained team in the US. The aim of the firm studied was more to add development capacity than to create a changed set of routines in which client and vendor work would be combined as is the case at both the Agency and the Bank. Also the activity covered in this case was relatively small in size amounting to around 50 people from the vendors.

The research project complements this case by considering how social capital processes can aid knowledge *development* in situations where the work of the client and vendor is *entwined* and the adoption of outsourcing involved significant *structural and process change*. Also, the cases of the Agency and the Bank each have different configurations of outsourcing, this provides insights into how configuration can influence the social challenge.

The research project also examines the interaction of social capital creation with the effects of contractual governance that is necessary in outsourcing.

Case 3:

Author(s) and year	Case description	Summary
Willcocks and Kern (1998)	Longitudinal study of the large scale outsourcing of the UK Inland Revenue IT management to a single vendor.	The case describes how contractual processes relate to those of co-operation between client and vendor in a large and complex outsourcing project. The project was significantly affected by an unforeseen government policy decision to provide internet based 'self assessment' submissions to taxpayers. This called for a major change in IT capability during the period of outsourcing transition. Relationship managers in both client and vendor were contractually rewarded for 'partnering behaviour'. It was believed that this incentive encouraged a co-operative approach that complemented contractual governance and allowed the outsourcing to succeed in a context that became challenging.

Relationship of the case to this research project:

This case importantly demonstrates how effective IT outsourcing calls for both contractual and co-operative behaviour. It identifies that there are complex and recursive links between these two levels of behaviour and emphasises the importance of relationship management skills on both sides. It comments on the knowledge balance between client and vendor but does not examine in detail how this influenced the major development project unforeseen at the contract outset.

The research project looks at similar large outsourcing situations that are informed by the client and vendor experience in cases like that of the Inland Revenue, hence it represents an *update* on IT outsourcing policies. It complements this case by examining the recursive relationship between contractual and relational governance approaches through the lens of *social capital theory*.

The research project also looks more specifically at the facet of *knowledge* within IT and how this is managed in outsourcing situations for the creation of ongoing innovation and change. The project also examines in more detail how specific organisational *structures* can be developed within outsourcing to encourage co-operative behaviour that leads to innovation.

Case 4:

Author(s) and year	Case description	Summary
Brito and Nogueira (2009)	Study of a long term partnership type relationship for the supply of developed and configured IT applications to an industrial company 'PaintCo'.	This case describes a long term relationship between an industrial firm and its IT supplier. There is no specific outsourcing contract but the supplier seems to act as a specialist developer of major new IT capabilities to the client (projects mentioned include the provision of ERP systems, CRM systems and replacement of physical IT infrastructure). The relationship is described as a partnership. The importance of social relationships is mentioned throughout. Despite the presence of contracts to formalise the relationship around specific projects, the development of 'personal and social bonds' between the organisations is claimed to play a 'decisive role'. The creation of good communication through social processes has sustained a 'healthy and stable' relationship that has lasted for over twenty years. Personal relationships evolved over time, some emerging from periods of conflict. Developing the ability to resolve conflict 'led to the creation of credibility and confidence' and as such supported the positive development of relationships.
Relationship of the case to this research project: The case is not one of outsourcing in the form used by the Agency and the Bank. The situation is similar in that responsibility for the delivery of distinct competences over a prolonged time period has been given to a single supplier. The key difference is that there is no evidence of a single contract that governs the relationship, instead contracting is on a project by project basis. Hence, the influence of contracted agreements on the long term development of competences across the integrated organisations cannot be isolated. The research project complements this case by analysing how the *structures* in the relationship between client and vendor influence the way relationships can develop between *knowledge* owners on both sides. It also uses the lens of *social capital theory* to describe how the contractual and more socially oriented aspects of these relationships evolve. The research project adds to this case by providing insights into how these relationships evolve over a period in which the client and vendor are bound to work with each other by the *outsourcing contract*.		

Case 5:

Author(s) and year	Case description	Summary
Levina and Vaast (2008)	Study of how boundaries emerge in complex IT outsourcing situations.	The case examines the large scale use of IT outsourcing on a global basis by a US bank. This involves the use of both 'captive' offshore centres, owned by the bank as well as third party vendors. The outsourcing developed over a 12 year period (1996 – 2008) during which onshore resources in the client organisation were progressively reduced. The case data is used to interpret how social boundaries, influenced by different organisational and cultural contexts of the outsourced operations compared to the client, emerge and affect the development of collaboration in IT development and management. Differences in status between client and vendor staff are both produced by these social boundaries and reinforce them. Status is seen as a factor that influences the effective exchange and combination of knowledge

Relationship of the case to this research project:

The case examines in depth the social processes in a complex outsourcing situation, one in which multiple centres are used in two different countries (Russia and India) and where client staff have relative freedom to make sourcing decisions across these. In some senses it is similar to the situation at the Bank, although there the outsourcing is both more recent and more overtly structured and controlled. The case does not examine contractual governance or processes in any detail but it does look at offshore relationships through a cultural lens which could not be applied to the data collected in the research project.

The research project complements this case by looking in more depth at the *organising structures* that client and vendor put in place to create the type of knowledge exchange that are examined here.

The research project adds to this case by looking at *contractual governance* and how this can interact with the social and relational processes discussed here.

6.5.2 Case support for propositions 1-4

The presentation of the case data in these studies by their respective authors does not allow the level of detailed analysis that was possible for the two cases that were specifically prepared for this thesis. It also introduces the additional layer of interpretation that the case writer has applied to the underlying data. However some evidence can be deduced and related to the same four propositions that have been used earlier in this discussion.

This section will describe this on a case by case basis concluding with an overall summary.

Case 1 – Ireland, Financial Services

The focus of this case study is the entity of trust and its role in supporting value creation by IT outsourcing. Trust is a component of social capital (Nahapiet and Ghoshal, 1998), in this case the writers proposed that a key source of anxiety for the client was 'the difficulty in establishing trust in the expert systems of technical and professional knowledge upon which IndiaSoft [the vendor] drew' (Kelly and Noonan, 2008 , p.190); trust and knowledge are related to each other and seen as important factors in creating the innovation that the client was seeking from the relationship. Based on this, this case seems to support proposition 1, competence in innovation emerges from the expert technical knowledge and skills of the vendor but trust in this, hence social capital, must exist. It could be deduced that the use of outsourcing and the arm's length relationship this creates raises the importance of social capital creation as a management concern.

The description of how contractual governance was set up in this case would initially seem to refute proposition 4. The vendor's proposed contract was described as 'minimalist' (p.191), the client CEO is quoted saying, 'I was totally taken aback that, for a company like IndiaSoft, it was not more comprehensive and did not cover more areas' (p.191). From this it could be deduced that there was little codification. The case however mentions a specific incident which led to a dispute. The client failed to deliver an item that was needed for the project to continue, this resulted in project delays and additional costs that were charged to the client by the vendor. It seems

from the case that the vendor had specific expectations both of the delivery itself and of how the client should respond to the formally reported problem with it; the client assumed that the vendor would take a more flexible approach to solving the problem than was actually the case, underestimating the impact under the formal agreement. This incident points to a problem with codification, each side had interpreted the substance and nature of the agreement in a different way. This led to delays which could be seen as a reduction of innovation competence. This specific example provides support for proposition 4, although it must be acknowledged that any wider implications of ongoing contractual governance cannot be deduced from the level of detail in the case.

Organisational design is not covered in any detail in case 1, it rather focusses on the evolution of the relationships between the key individuals involved on both sides. Neither in this case was existing work at the client replaced with work of the vendor, as happened in the more conventional IT outsourcing situations at the Agency and the Bank. This means that the structural aspects of outsourcing mentioned in proposition 1 are here hard to assess. The case does however describe the development of the relationship in two phases, Courtship and Cohabitation. It states that in the second, Cohabitation phase, 'both parties now had to collectively establish communal social practices to enable them to work closely together' (p.195). Without commenting on how they structured their respective organisations to achieve this, this statement indicates the importance attributed to social capital development and would seem to refute proposition 3. Perhaps the absence of legacy practices and associated thinking on the client side left it more open to a more socially open approach to building effective knowledge exchange relationships with the vendor.

The same limitation in structural discussion affects the assessment of proposition 2. However here, irrespective of structure there is a convincing description of efforts taken for the creation of social capital. The case focusses on trust but knowledge management actions are also described. In particular the case describes how individuals were allowed to adopt knowledge brokerage roles and to see the relationship simultaneously from the perspectives of both client and vendor. Talking of the relationship manager from IndiaSoft, the client CEO said, 'Sunil was like a dog with a bone; he was constantly pursuing problems and issues and in the end he knows much more about our systems than we do ourselves' (p.202). The fact that

Sunil had been permitted to take on this role, the process of learning and communication he must have been through in developing it and the evident trust of the client in the result are strong evidence of social capital creation to further innovation competence in this relationship. Hence it is concluded that the case supports proposition 2.

Case 2 – US, Manufacturing

This case focussed on the importance of social capital in supporting knowledge transfer between an outsourcing client and its chosen vendor. It initially described how the firm had failed in its first attempt to move work to an offshore vendor. In reflecting on this failure the firm considered how more effective relationships had worked with their domestic suppliers. A manager said, 'We never considered how much knowledge our [onshore] suppliers brought to the table. Having worked with them for years, they already knew a lot about us and our systems. We underestimated the amount of interaction that took place between them and our users and other developers. There was a lot of information going back and forth that we did not see' (p.157). This remark shows how the firm had come to recognise both the importance of knowledge as a facet in its IT system and the presence of tacit or hidden processes in its relationships with suppliers. This seems to give some support to proposition 1. Knowledge must be taken into account as a facet of an effective IT management competence and the processes that support it can be damaged or removed by a process of sourcing that addresses only the tangible aspects of IT.

The firm's next attempt at outsourcing was described as 'more measured and thoughtful' and led to a realisation that 'the knowledge transfer process for embedded software development was critically important' (p.158). This attempt was supported by the firm's six-sigma approach to quality improvement which calls for a structured process of identifying and addressing potential causes of failure. The quality discipline that six-sigma provided led the client firm to a structured approach to knowledge transfer. In this, the offshore employees from the three engaged

vendors would spend some time working on their projects physically located in the client's US operation and co-operating closely with the client's staff. The case analyses clearly how social capital is generated by this structured approach to knowledge transfer and hence provides strong refutation of proposition 3. In this case the client's technological goals, its structured response to these and the creation of social capital within this are all aligned towards the creation of a high quality output. Quality is a unifying goal that makes a short term orientation irrelevant.

The role of outsourcing in the development of innovation competence in this case is more focussed towards the client's organisation that towards its combination with the vendor. Two reasons seem to exist for this. First, the outsourcing was set up primarily to increase the capacity of the software creation function within the client firm, innovation skills were retained by it throughout. Second, the firm seemed to be concerned to protect its intellectual property from any risks the outsourcing might pose, hence the outsourced work was divided into small packages, no supplier being responsible for an integrated delivery. This created a situation where innovation was very much driven by the client, from this perspective therefore, proposition 2 is hard to relate to this case as it is written. Here, effective IT outsourcing did enhance innovation competence but not by using knowledge exchange processes supported by social capital. Instead, the case uses the theory of network ties to describe how interactions between the client firm and individual suppliers could be combined by the client into new knowledge. It notes '…an internal team working closely on a project with Supplier One would develop strong ties. In addition, that team might also work peripherally with Supplier Two…. While connections did not exist between the suppliers, U.S. Manufacturing teams did interact simultaneously with multiple suppliers, thus increasing network utilization, network ties and the opportunity for knowledge transfer' (p.162-163). Innovation competence was thus enhanced but only within the client firm. This is proposed as partial support for proposition 2.

This case is an interesting contrast with that of the Bank. As here, the Bank uses multiple suppliers (and on a much larger scale, here only 50 people were involved). The Bank however has a more entwined relationship with its vendors, knowledge is spread between its retained organisation and the vendors' on- and offshore teams. The Bank is also less concerned about the risks to its intellectual property, its

vendors are not likely to offer banking services in the UK. Hence in the Bank's case combining knowledge with its vendors on an ongoing basis is more important that transferring knowledge to them. The social and structural solutions it must deploy are consequently also different.

Case 3 – UK, Inland revenue

This case focusses on the management issues that emerged from the 'total' outsourcing of the UK Inland Revenue (tax authority) IT system to EDS in the period from 1994 to 1997. This case is set in a relatively early period of IT outsourcing history and its description misses out some of the softer issues surrounding the management of the IT system that feature in the other cases in this section. It does however identify the importance of co-operative processes alongside the formal contractual processes in generating a successful outcome from outsourcing and describes a case where these work together to generate a broadly successful outcome. The case description does not contain the words 'knowledge' or 'social' although these are present in the analysis section, possibly reflecting their absence from the discussion between the case researchers and their interviewees. Outsourcing in this case seems to have been a politically driven project, its objectives oriented towards technology and process. These are stated in the description as 'to gain rapid access to new technologies; enhance the capability of IT to meet business needs, and especially to reduce development time; optimise IT staff career opportunities and achieve step improvements in efficiency, including cost efficiency' (p.34). Knowledge is undoubtedly present, the writers describe how the IT organisation was highly capable in its knowledge of the functions of the Inland Revenue, but its protection or enhancement through outsourcing is not mentioned. It is hard therefore to assess how this case relates to proposition 3, innovation happens but its roots in the tangible and intangible facets of the IT system are not described.

The Inland Revenue, in a (perhaps unsurprisingly) similar way to the Agency case study exhibited strong capabilities in contractual governance. The case writers comment that 'it would seem that both parties were very secure on establishing the relationship at what we term the 'contractual level'' (p.41). The case describes how it

was realised in the early phase of the outsourcing that 'relationship management needed more comprehensive attention' (p.36). Managers recognised that a different set of skills was needed to complement the contract if an effective relationship was to me maintained. A consultant involved described this in these terms, 'You can tune up the processes on these [contractual elements] but you need to go to a higher level if things are putting the overall goals and the relationship at risk. You absolutely need the commercial skills and business skills to maintain the partnering and the relationship, and make sure you are getting leverage' (p.36). This was recognised and ultimately adopted in both co-operative routines and individual incentive systems. If 'getting leverage' here is taken as including an innovation competence, this case squarely supports proposition 4. The initial contractual form failed to include the need for effective relationship management although this was soon recognised and corrected. It is perhaps understandable too that issues like the importance of relationship skills, which seem to be more readily acknowledged in other cases are here seen as emergent. This outsourcing deal happened while the outsourcing industry was in a relatively early phase of development.

Proposition 3 would seem to be supported in this case. There is no evidence that outsourcing was designed in a way that would develop social capital. This is possibly a consequence of the 'total' nature of the Inland Revenue outsourcing project. The IT staff would be transferred in full to the vendor (in two waves to limit risk), thus they could be expected to take their social capital with them, or at least those elements that sat wholly within the compass of the IT group. The case describes how, as the unplanned self assessment project developed, differences emerged between client and vendor, 'EDS believed the system should be kept as simple as possible….IR management …wanted a tailored package to meet its specific requirements but this greatly increased the risk of failing to deliver a robust system on time' (p.37). The case does not provide the detail that allows the background to this divergence to be understood but it is reasonable to assume that strong social capital linking the IT group (now in EDS) with client management could have helped resolve it. The issue was resolved by early transfer of full project responsibility to EDS and additional spending, an effective, contractually driven solution. This pragmatism could be seen to reflect political pressure for this project

to be delivered, the case states how 'Neither [client or vendor] wished to be seen to fail on such a high profile development project…' (p.37).

The case provides little detail on structure but its comments on the development of formal relationship management and the evident success of the partnering in delivering the self-assessment project indicate that innovation competence was at least protected if not enhanced. The causality behind this cannot be assessed from the case. Hence it is proposed that the case provides weak support for proposition 2.

Case 4 – Portugal, PaintCo

The focus of this case study is the way that IT capability development is linked to the relationships between the users of IT and their suppliers. In a somewhat similar way to Case 1 (financial services), the case explores the development of the relationship between a paint manufacturing firm and its IT supplier, ITSup, over a 26 year period (1980 – 2006). There is no outsourcing that has involved a transfer of people and skills as in the Agency, the Bank or case 3. However a significant relationship has developed over this long period in which the client has used the vendor to provide and introduce new IT applications, customised for its use. The case identifies 18 such IT provision 'episodes' over the period of the relationship.

The role of knowledge in effective IT delivery and its creation through the social relationships between client and vendor are discussed throughout the case description. The case writers, in discussing their evidence conclude that, 'IT assets combined with human IT resources encourage the creation of intellectual capital and synergies exploitation that… [going on to describe case specific entities]' (p.235). This supports proposition 1, created intellectual capital is the basis of IT innovation competence and this comes from the intangible as well as the tangible aspects of the interacting factors involved in IT management.

As the firms in the case worked on a project by project basis, there was no specific outsourcing contract nor a long lasting organisational structure in which one was implemented. Any direct support or refutation from the case for propositions 2 and 4 is therefore absent. On a project level however, the case would seem to refute

proposition 3 saying, 'Although the projects were formalised by contracts, the decisive role of personal and social bonds for increase in proximity between parties was highlighted' (p. 233). The notion of distance or proximity between parties was an element of the analytical dimension of relationship atmosphere used by the writers to analyse the case. It was also clear that the longevity of the relationship both led to and was supported by the social capital that was created during the project periods in which client and vendor had intense contact; 'Social exchange had on one hand and during the projects, a daily, intense and informal nature contributing to the development of personal bonding between the people from both parties' (p.233). Repeated engagement in projects seemed here to create a relationship atmosphere similar to that in the more standard outsourcing enclaves seen in other cases, refuting the proposition 3 that project or outsourcing goals cause social capital creation to be overlooked.

The case describes convincingly the development of a situation where client and vendor knowledge were combined to create intellectual capital. The case writers comment how, 'the informal relationships between PaintCo's users and ITSup's consultants brought out the conditions to build new knowledge in several areas…also about the IT that supported the development of those processes and activities as a whole…' (p.234). Formal and informal interaction between the parties was used to build skills on both sides, 'PaintCo users increased their technical skills on programming techniques and systems administration, through observation in daily, intense and informal contacts with ITSup consultants' (p.234). The case describes a situation where, albeit in a structure of individual project activities, organised interaction activities create social capital which leads to new knowledge creation. Hence, although again this is not a case of formal outsourcing, there is evidence that indicates support for proposition 2.

Case 5 – Global, Banking

This case looks at outsourcing through lenses of social practice and culture, examining the ways that client and vendor interact much more than the reasons for, or results of their interaction. Its focus is the boundaries that can form in complex outsourcing situations such as that examined, boundaries that affect collaboration

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and by implication, innovation. Organisational context, separation, differences in managerial practice and perceptions of relative status emerge as the main factors that can create or remove these boundaries. The tangible aspects of the case, the IT applications and platforms used by the bank in question, the contractual arrangements that supported outsourcing and the tangible results that it aimed to achieve are hardly mentioned. Nevertheless the case supports proposition 1. Tangible facets of technology and structure are evidently present, if not discussed in detail and the intangible factors of knowledge and social capital are examined in depth. Over time the case states how the client's program managers came to realise the importance of social capital in supporting innovation. One acknowledged the social barrier of status that had to be overcome saying, 'A lot of people want to treat Indians as second class citizens…My [project] managers and I have gone through a lot to make sure it doesn't occur. If it occurs, you are shot in the foot as far as counting on innovation with these offshore guys.' (p.320, parentheses in original).

The case describes how, in the early phase of the relationship, very different levels of knowledge on the client and vendor sides led to problems in project delivery, '…knowledge of the financial services industry was mentioned in almost every interview on the client side as something that set offshore and onshore participants apart' (p.313). Although contracting is not discussed in the case, expectations seemed to have been set in the formal agreements that could not be met until knowledge had built in the vendor organisations. Further, this task was hard for the client to understand. A team member is quoted saying, 'We had to teach the Russian developers how a bank's IT functions…to make sure controls are in place, to fix build and development procedures etc….Initially we did not know what they did not know' (p.315). This provides some support for proposition 4. At least in this initial phase, the governance mode adopted did not take the social enablers of knowledge transfer fully into account. Later, action was taken to put these enablers into place, 'The managers drew on their financial resources or convinced the CIO to expand necessary resources to authorize travel, invest in relevant communication systems, hire and fire appropriate personnel offshore and onshore and source more interesting work offshore'.

The argument above would seem to provide some support for proposition 3. At least initially, the design of the outsourcing enclave overlooked the need to create social

capital. The case is an interesting contrast to others in the degree of freedom that managers seemed to have to make individual sourcing decisions based on their own appreciation of the relative effectiveness of different options available to them. This ability 'to choose where and how to source with relative autonomy' (p.311) may inadvertently have contributed to the growth of knowledge and social capital in the complex outsourcing enclave. The case writers comment how, 'In India, many of Global Bank's systems were offshored in a "low-end" maintenance mode for years, allowing developers to learn them over time' (p.316). Managers' sourcing freedom could have encouraged them only to give work with a low risk attached to the offshore vendor, this allowed the vendor to grow its system knowledge and relationship networks without the pressure that might come with a higher profile development project. Early, simple structuring decisions can thus lead to social capital creation if parties are motivated to do this; forcing high profile projects into rigidly designed outsourcing structures with only short term objectives in mind can create risk aversion that restricts social capital growth and new knowledge creation. Proposition 3 is then supported initially but this support will weaken over time.

The case does not comment on the overall effectiveness of Global Bank's IT outsourcing. It does provide examples of how individuals, on both sides of the relationship, took structuring actions that could allow knowledge to develop and grow. The case comments how 'Over time, joint identification, practices and trust had developed on some projects in each setting. On such projects Global Bank's staff helped their offshore colleagues and vendor employees learn onshore software development practices, acquire relevant business knowledge, and gain access to business users' (p.318). This implies that, recognising problems of inadequate knowledge transfer, managers took deliberate action to build social networks and establish behavioural and communication norms. This would seem to show that proposition 2 is supported in this case.

6.6 Summary

The table 6.5 below summarises this discussion of the additional five cases and compares this with the analysis of the findings from the Agency and the Bank.

	Proposition 1 IT Competence	Proposition 2 Knowledge	Proposition 3 Objectives	Proposition 4 Governance
Agency	Support	Partial support	Refutation	Support
Bank	Support	Partial support	Refutation	Refutation
Case 1	Support	Support	Weak refutation	Weak support
Case 2	Support	Partial support	Refutation	Support
Case 3	Little evidence	Weak support	Support (initially)	Support
Case 4	Support	Weak support	Weak refutation	No evidence
Case 5	Support	Support	Support (initially)	Weak support

Table 6.5: Summary of case support for the four analytical propositions

In this table a qualitative assessment is made of the respective cases' full or partial support or refutation of each proposition. Each is qualified by the adjective 'weak' if the case data suggests support or refutation but no specific examples of evidence are found.

The size of this sample and the limitations of the qualitative assessment that could be applied to the independent case studies means that no statistically valid overall conclusion can be drawn about the support of refutation these cases hold for the four propositions.

The table above shows however that propositions 1, 2 and 4 are generally supported. For proposition 3, the position in less clear but there is a slant towards refutation; it is also noted that in the two cases that supported this proposition, structural action was eventually taken that would lead towards its refutation in time.

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Chapter 7 Conclusions and future directions

7.1 Recap of the research approach

The first chapter of this thesis concluded with three research questions. These aimed to explore how social capital and knowledge in the enclaves that IT outsourcing creates might affect an organisation's ability to be innovative, how the design of these enclaves might influence the development of their social capital and how this social capital might itself be affected by the transitions to outsourcing and the governance methods applied to it. The three questions were:

1. How do social capital and contextual knowledge support an organisation's ability to innovate using information technology?

2. How does design and implementation of IT outsourcing configuration affect the development of the social capital needed to support knowledge creation and thus IT innovation?

3. How is the development of social capital in outsourcing configurations affected by client objectives and implemented governance processes?

Literature was reviewed in three broad areas: the developing role of IT including the function of social capital within this, how organisations create knowledge and social capital, and developments in the practice outsourcing itself. Each area relates to both of the others, meaning that there was no obvious order in which to review them. Hence the review started with that which seemed the most general, that of the developing role of IT. The full literature review is shown in Chapter 2.

To gain insight into the developing role of IT competence in organisational innovation, a structured and longitudinal review of the extensive body of literature that describes its evolution was carried out. This shows how IT has developed to become an essential tool in contemporary organisations as well as an enabler of advantage. A synthesis of this literature led to a proposition (proposition 1) that creation of sustained IT competences involves more than just dealing with the obvious facets of technology and the structuring of this to serve the needs of the user organisation. Maintaining knowledge, not only of the functioning of IT but also

of the way it can relate to the organisation's changing needs is also a key factor. Such knowledge can partly be described and written down but is partly tacit, sitting in the ways people behave, how they perceive the organisation and its role, how they use the personal skills they might have taken years to develop. Competence in IT innovation rests on people exchanging and combining their own knowledge with that held by others. This exchange happens within an extended community of technologists, users of IT in the wider organisation and vendors, a process that can partly be organised but which also has intense social aspects. The theory of social capital offers a way of describing these social processes and the way they allow new knowledge to be created. To put together information technology, structure it in a way that meets the organisation's needs, build relevant knowledge and grow this with supporting social capital calls for a particular set of management competences. This was encapsulated in a conceptual framework based on Leavitt's 'diamond' model of the 1960's, updated to reflect the now significant role that IT competence plays in an organisation's task.

The literature review then looked at how dimensions of social capital have been described and how choices over the structure of relationships within and between organisations might affect these. Relating this to the IT management, it was further proposed (proposition 2) that IT outsourcing creates unique structural 'enclaves', defined by the client's choices of system scope and vendor and with responsibility for a specific set of IT competences. In and around these enclaves the personnel of the client and vendor must work together, governance systems specific to outsourcing emerge and new relationship networks grow. The knowledge resources of client and vendor are placed in outsourcing enclaves where the social capital that supports their enhancement or erosion is created. The conceptual model of IT competence was developed further to reflect the specific situation that a transition to IT outsourcing creates.

Relating the social capital and knowledge literature to the body of academic writing about IT outsourcing led to another proposition (proposition 3) about how the objectives set for outsourcing could affect the development of social capital in the enclaves created. Literature describes how an outsourcing project can be a reaction to perceived problems in the existing ways an organisation manages its IT competence. These problems may provide a focus for technological or structural

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action in the early phases of an outsourcing project. Solving the problems that provoked the use of outsourcing could attract a higher priority than an objective of developing the social capital between client and vendor people that might be needed to encourage innovation in the longer term.

A final proposition (proposition 4) concerns the way that outsourcing relationships are governed. The use of outsourcing introduces a contract between the client and the outsourcing vendor, which describes and creates legally enforceable obligations on both parties. To do this, the contract and supporting agreements codify an area of work that was previously vertically integrated in the less precisely defined environment of the client organisation. The elective choices that internal managers previously had about their relationship with IT are replaced by more prescribed procedures needed to allow the commercial relationship that outsourcing represents. Such procedures may also be desirable to formalise and build quality standards into IT activities.   Simplification cannot be avoided when such a process of codification is applied to the intricate and multi-faceted IT activities within the organisation. The contract is likely to focus on those tangible facets of the IT system that can be readily described and dimensioned rather than the organisation's dimensions of social capital. This risks creating contractually sanctioned behaviour that interferes with the development of intangible social capital and consequently reduces competence in innovation.

The literature review and the formation of these theoretical propositions led to an initial conceptual framework. This describes the application of social capital in situations of IT outsourcing where innovation in the IT competence so delivered is needed. It shows how IT outsourcing represents a unique organisational enclave in which social capital enables the creation of new knowledge. The formation of social capital is limited by the objectives set for the enclave and by the contractual governance applied to is. This conceptual framework is shown in figure 7.1.
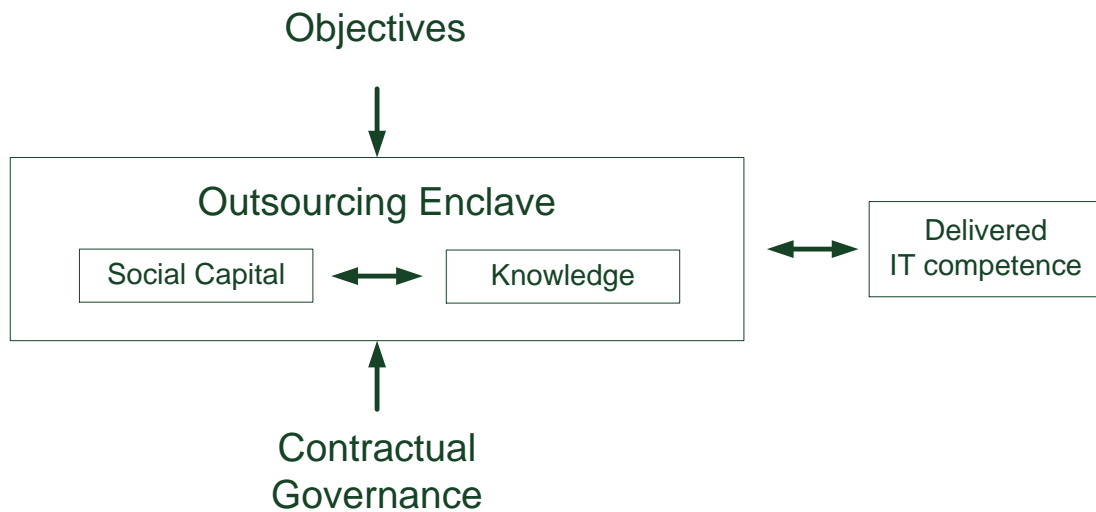
Figure 7.1: Final conceptual framework following literature review

The four propositions and the framework were then applied to two case studies, made specifically for this thesis and described in Chapters 4 and 5. A detailed interpretation of the cases against the propositions and the theory that underlies these is described in Chapter 6.

The remainder of this final Chapter 7 will describe the conclusions of this work, its contribution to theory and to practice and its main limitations. Proposals for further work will also be made.

7.2 Answers to the Research Questions

The first research question was:

RQ1 'How do social capital and contextual knowledge support an organisation's ability to innovate using information technology?'

A sustainable competence in IT innovation requires more than the simple ability to apply changing technology to business problems. The literature review shows that IT has a complex and changing nature with shifting capabilities that must be married with the shifting needs of the organisations that use it. Literature shifted its focus from understanding the technological aspect of IT, seen in the 1980s and early 1990s towards an examination of the wider challenge of managing IT as a fundamental component of organisational innovation in the 2000s. A significant body of literature describing different aspects of the importance of social capital in IT management has also developed. This suggests how the connection between IT innovation competence and business outcomes has come to be shaped by contextual knowledge and social capital within the IT system as well as by technology and chosen organising structures. Based on the literature a conceptual framework showing how four facets mutually interact around the IT competence of the organisation was derived. As shown in table 6.5, proposition 1 relating to this framework, was verified by the two case studies created in this research project. The framework is shown below in figure 7.2.
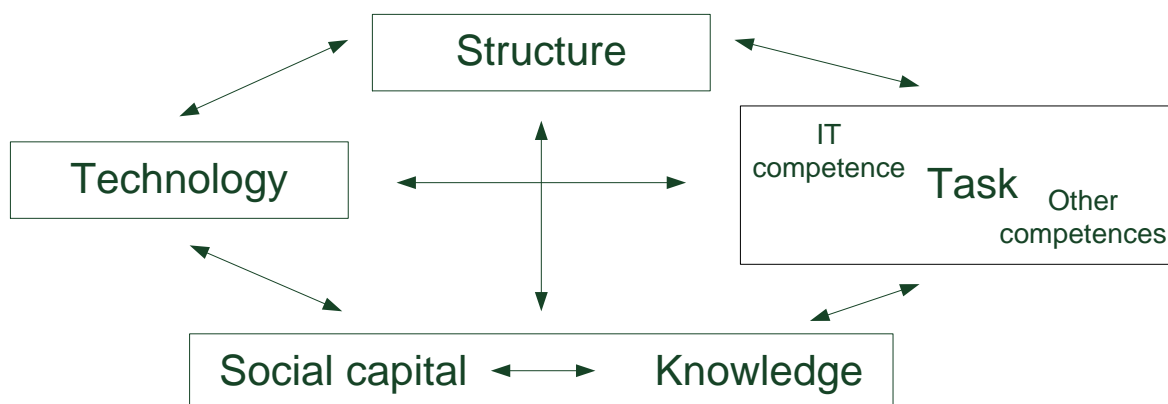

Figure 7.2: Leavitt's diamond adapted for both IT and organisational variables

Evidence from the case studies show how knowledge that supports IT innovation is not concentrated in the community of IT experts in the organisation but scattered. A critical role is played by the internal clients of IT located in the wider organisation who may or may not have knowledge of relevant technology but have insight into the organisations' task. Structural and relational social capital works alongside organisations' formal process of innovation management to bring these knowledge resources together.

The cases give insight into mechanisms that relate organisational innovation to IT innovation competence. They show in contrasting ways how organisational innovation can be driven as a bottom up or top down process and how both formal process and social capital in the organisation align this with IT activities.

The second research question was:

> **RQ2 'How does design and implementation of IT outsourcing enclaves affect the development of the social capital needed to support knowledge creation and thus IT innovation?'**

Transition to IT outsourcing provides a new structure for the delivery of IT competence and hence innovation ability but one in which the interactions shown in figure 7.2 must be maintained. Outsourcing enclaves can provide a focus for the delivery of specific IT competences and the formation of communities of practice in which contextualised knowledge resources can be created. The cases show how this structure can vary in intricacy, from the simple, single outsourcing enclave at the Agency to the carefully designed multiple development centres and their linked enclaves at the Bank.

However, outsourcing also changes the configuration of social capital in the organisation, potentially affecting the performance of the new structure and its effectiveness as a community of practice. Social capital forms within enclaves; both cases show how this is influenced by the transfer of client and vendor people to them. It also forms between enclaves and in the links between enclaves and the

wider organisation. Both cases show that social capital takes time to re-form after outsourcing transition has happened.

Both cases also demonstrate how disruption in social capital can affect performance of the IT innovation competence delivered by outsourcing enclaves. At the Agency, the initial isolation of the single outsourcing enclave from the wider organisation prevented social capital from forming, this limited its ability to develop as an effective community of practice that could support IT innovation. At the Bank, disruption was most evident within enclaves where retained people were seen to lose identification with their changing roles. This threatened the retention of the valuable contextual knowledge needed in the community of practice to seed future innovation.

The qualification of the knowledge benefits of outsourcing enclaves by these social capital considerations means that the two cases only provided partial support to the proposition 2 as shown in table 6.5. Outsourcing enclaves do provide unique structures for the combination of knowledge resources but weak social capital, or social capital that is damaged by the process of outsourcing transition can limit their ability to create valuable new knowledge.

The cases refuted proposition 3 as shown in table 6.5, each demonstrating that social capital considerations were not overlooked when their outsourcing enclaves were implemented. The detail of this was different in each. The Agency carefully managed a staged 'mobilisation' of outsourcing that reinforced social capital in all its dimensions among the staff transferred to the vendor. Its implementation of IT outsourcing did therefore take social capital concerns into account although these were neglected during the subsequent transformation project. The Bank used a staged approach to outsourcing implementation, using this to learn how the effects on social capital could be managed. Its awareness of emerging problems in the identification of members of the retained team with their changed roles demonstrates continued attention to social capital effects in the outsourcing enclaves.

Each case therefore shows how outsourcing will disrupt social capital in and around the enclaves created. The effects of this were managed in each by careful planning of the more human factors involved in implementation. Social capital does however take time to stabilise after outsourcing transition.

Choices of governance method are factors in outsourcing implementation and were shown to influence the formation of social capital in the outsourcing enclaves studied. The cases however contrasted each other in their support for proposition 4 as shown in table 6.5; the Agency showed how contractual governance can negatively affect the development of social capital while in the case of the Bank, contractual governance was implemented in a way that generally reinforced it. This will be expanded further below.

The third research question was:

RQ3 'How is the development of social capital in outsourcing enclaves affected by client objectives and implemented governance processes?

As discussed under RQ2 above, the cases refuted proposition 3 as shown in table 6.5; the importance of social capital was not overlooked when outsourcing transition was planned. This did not however compromise the short term technological or structural objectives in either case. Both seemed to have achieved their objectives; cost reduction and quality improvement at the Agency, risk reduction at the Bank. Objectives were achieved in parallel with the development of social capital, it could in fact be concluded that the objectives played an important role in this development.

At the Agency, although the transformation project impeded the formation of structural and relational social capital, it provided a basis for each party to learn about the type of relationship that was needed for the outsourcing enclave to become fully effective. Action could then be taken, like the change of top management and the formation of the joint innovation team, that embraced the need for social capital repair. The objective was the entity around which learning about social capital could coalesce.

The Bank sought to reduce risk by bringing the competences of large vendors into its own IT structure. Here also, learning about the importance of social capital flowed from this objective. The design of multiple outsourcing enclaves created a situation where structural and relational social capital could grow from the start, cognitive social capital following as the work became established. The staged transition to outsourcing and careful attention to performance allowed problems in social capital

formation to be detected and action taken, the falling identification of retained team members with their changing organisational roles being an example of this. The importance of the overall objective of risk reduction forced all aspects of the transition and subsequent management of outsourcing enclaves to be considered in its light. Thus, although the term 'social capital' did not strongly feature in the discourse observed within the Bank and its vendors, actions that acknowledged its importance were evident.

Turning finally to governance processes, in each case a disciplined and structured approach was evident. The IT competences that were required from outsourcing enclaves were codified, agreed and documented. These agreements formed part of contracts that were important and respected. However, the simplification of IT competence expressed in the agreements posed problems that were handled differently in the two cases.

The Agency case supported proposition 4 as shown in table 6.5. Here the rigid application of contractual terms, while securing the agreed quality and cost objectives, restricted the development of relational social capital between the outsourcing enclave and the wider organisation. This created a set of behaviours, essentially simplified by the contract, that prevented innovation in the agreed set of IT competences that the enclave was tasked to deliver. Only the completion of the transformation project and the appointment of new management eventually prompted the adoption of a more relational approach in which some variation of the agreements could be considered,.

The Bank refuted proposition 4 as shown in table 6.5. It also had clear contractual agreements but was prepared to reconsider these in the light of developing practice. The structural and relational social capital that was encouraged to form, at least at management level, allowed discussion of contractual realities from the start, in a way that was only recently possible at the Agency. The Bank's more relational approach to governance, allowed by this social capital, thus mitigated the effects of simplification that were inevitable in its contract formation processes. As practice and knowledge developed, contracts were allowed to reflect this.

In summary, the approach taken to outsourcing governance was, in these case studies, a meaningful factor in shaping the impact of a structural choice for IT

outsourcing on innovation outcomes. In one, a rigid, contractually oriented approach to governance helped to secure short term objectives but created a relationship climate that prevented the development of needed social capital. In the other, governance that was more relational, based on pragmatically oriented discussions between client and vendor managers allowed structure and social capital to develop. In a more general sense, this quality would help IT management to adapt to changes that are unknown or not recognised at the time of contracting and hence are over-simplified in outsourcing agreements.

7.3 Adaptation of the conceptual framework

In Chapter 2 a conceptual framework for understanding the possible effects of IT outsourcing on competence was proposed based on literature. This was grounded in the 'Diamond' model of change proposed by Leavitt (1966). It represented the outsourcing enclave as a unique structural entity, defined in the client organisation by choices of system scope and vendor that would together deliver a set of IT competences. In the outsourcing enclave, the knowledge of client and vendor would be exchanged and combined, allowing innovation in the IT competence it delivered. This process of exchange and combination is enabled by social capital in the three dimensions proposed by Nahapiet and Ghoshal (1998): structural, cognitive and relational.

The performance of the outsourcing enclave in delivering the IT competence, and in bringing innovation to this, would be affected by two further factors: the objectives set by the client objectives for the enclave that outsourcing might allow and the way that contractual governance was applied to it.

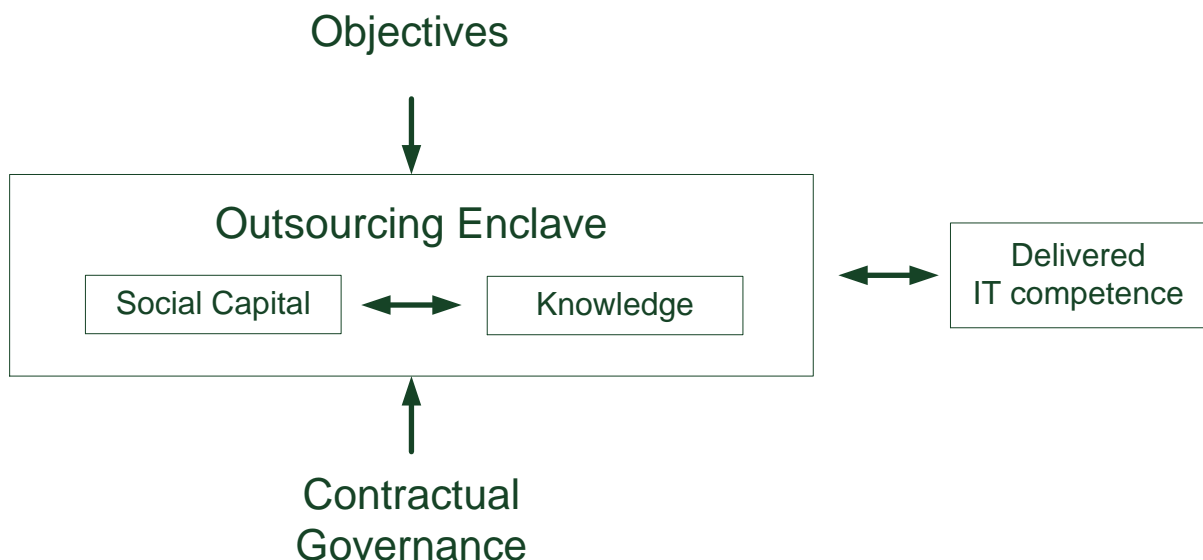Chapter 2 closed with a conceptual framework, displaying all these factors. This is repeated in figure 7.3 below.

Figure 7.3 Conceptual framework

This framework was tested against two detailed case studies, the results being analysed against 4 propositions. The conclusions of this were described in the previous section 7.2.

This exercise suggested the following changes to the conceptual framework:

1. A time factor needs to be added to the framework.

Both cases show that it takes time for the disruption of social capital caused by outsourcing transition to be resolved. This is reflected by their partial support for proposition 2, as shown in table 6.5. The unique management structures that emerge in each outsourcing enclave, influence the re-formation of social capital in its different dimensions and seem impossible to predict with accuracy.

Social capital disruption delays the ability of the enclave to become a community of practice that can create new knowledge and innovation competence. It also restricts management ability to address social capital factors that allow the community of practice to form. A stabilised base of social capital emerges in time that is more amenable to management action.

2. Short term objectives guide management towards relevant social capital actions.

Irrespective of the overall strategic objectives for outsourcing, the short term objectives provide a focus around which social capital effects can be understood. By their refutation of proposition 3, shown in table 6.5, the case studies demonstrated that the management of these social capital effects is not overlooked. Indeed, both cases show how learning from the success or failure in achieving short term objectives can be translated into management action effectively directed at the repair or improvement of one or more dimension of social capital.

3. Negative effects of contractual governance are mediated by the relational governance approach adopted.

Governance based on contractual provisions can restrict social capital development in the outsourcing enclave. Table 6.5 shows that the cases contrast each other in how this is moderated by the relational approach taken by the client and vendor(s) involved. The importance of relational governance alongside application of the contract is already well established in literature (eg Poppo and Zenger 2002). These cases provide further support for this work.

These three changes are shown on the adapted conceptual framework shown in figure 7.4 below.
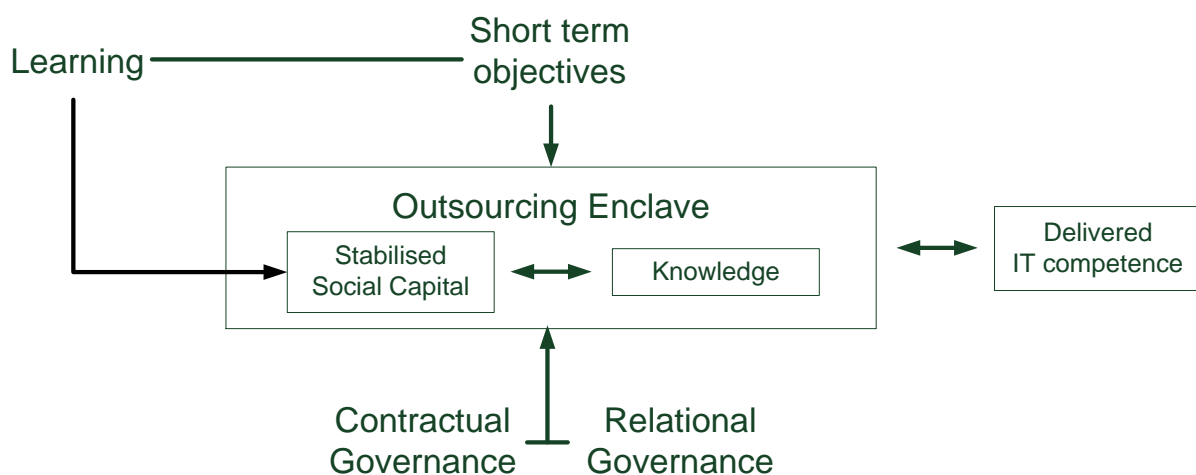
Figure 7.4: Adapted conceptual framework

Social capital emerges in this framework as a factor in the outsourcing enclave whose management may be possible only after a period of time from transition has elapsed. The short term objectives set for outsourcing provide a focus for management action relating to social capital. Social capital is simultaneously affected by the way contractual governance is applied to the enclave. This may be moderated by the relational governance that is also applied.

7.4 Validity, Reliability and Generalisability of the work

The table below describes the measures taken to ensure the trustworthiness of this research and its conclusions. To do this, the positivist concepts of validity and reliability are restated as appropriate to interpretive methodologies, based on relevant methodological research (Schwartz-Shea and Yanow, 2012, Walsham, 1995). Alongside each the measures taken in this work are described.

Standard of trustworthiness	Definition in interpretive research methodologies	Relation to the conclusions of the work
Validity	Schwartz-Shea and Yanow (2012) frame this issue as 'adequacy of explanation and analysis' (p.108). They propose the interpretive researcher should refer to: 1. Consistency of evidence across sources 2. How conflicting interpretations have been engaged. 3. The logic with which the argument has been developed.	These have been addressed in the work thus: 1. Introduction of material from multiple sources into the case studies and their interpretation (chapters 4,5 and 6). The sources are identified in table 3.1. of section 3.4.2. 2. By synthesising the views of contributors, taking their individual roles (and thus perspectives) into account. Making reference back to project sponsor where needed. 3. The logic of the argument is built on the conceptual framework and the discussion of evidence as described in chapter 6. These two factors are respectively related to the four literature derived propositions.

Standard of trustworthiness	Definition in interpretive research methodologies	Relation to the conclusions of the work
Reliability	'The reliability of a given variable,…, rests on the idea that the same measurement procedure, carried out by two or more researchers working on a project,…, can produce the same result.' (Schwartz-Shea and Yanow, 2012 p.93) Schwartz-Shea and Yanow discuss the use of inter-rater reliability measures to check measurement error at the level of individual qualitative variable.	The use of inter-rater reliability measures has not been possible in this PhD research. To compensate, reliability was verified by the organisational sponsors in each case. Case study drafts were prepared using multiple, clear cross headings that establish the relevant variables. These were then verified by the organisational sponsors for each case and discussed in a face-to-face meeting as described in section 3.4.4.
Generalisability	Walsham (1995) describes generalisation in interpretive IS case studies: '…generalizations,…,should be seen as explanations of particular phenomena derived from empirical interpretive research in specific IS settings which may be valuable in the future in other organizations and contexts.' (Walsham, 1995 p.79) He proposes four types of generalisation from case studies, such as those in Chapters 4 and 5: development of concepts, generation of theory, drawing of specific implications and contribution of rich insight.	This research conforms most closely to the first type. Its claim to generalisability rests in the concept of the outsourcing enclave. This could be used and developed in further IS or IT outsourcing research.

Table 7.1: Validity, reliability and generalisability of this work

7.5 Contribution to Theory

This research has developed a conceptual framework for understanding how IT outsourcing affects IT competence, the 'outsourcing enclave'. This is based on a review of IS literature relating to innovation since the 1960s combined with relevant concepts from literature on social capital, knowledge and outsourcing as described in Chapter 2.

This framework builds on the 'Diamond' model of organisational systems (Leavitt, 1965/2010), which proposes that an organisation's changing task is addressed by the mutual interaction of its structure, technology and people. The original model was updated to reflect the value and importance of specific IT competences in the task of contemporary organisations. The conceptual framework further expands the variable in Leavitt's model that related to 'people', dividing this into the two related variables of 'social capital' and 'knowledge' that are commonly used in IS literature (eg. Kankanhalli et al., 2005, Peppard, 2007, Robert Jr. et al., 2008, Rottman, 2008a, Schlosser et al., 2015, Zimmermann and Ravishankar, 2014).

The outsourcing enclave is a unique organisational entity formed at the point of outsourcing transition and defined by the scope of IT competence it must deliver and the selection of a specific vendor. In the enclave, the knowledge resources of client and vendor are combined under a form of developing social capital that is different from that in either organisation.

This concept of the outsourcing enclave, as represented in this framework is believed to be a novel contribution to the academic analysis of IT outsourcing.

The existing body of outsourcing literature recognises the importance of social capital creation (eg. Rottman, 2008b, Willcocks and Griffiths, 2010, Willcocks and Kern, 1998, Ghosh and Scott, 2009) and knowledge management (eg. Mudambi and Tallman, 2010, Weigelt, 2009, Willcocks et al., 2011, Zimmermann and Ravishankar, 2014) in the development of effective IT outsourcing. Structure has also been considered, but mostly at the level of the relationship between client and vendor (eg. Henderson, 1990, Insinga and Werle, 2000) or from a perspective of governance (eg. Gulati, 1995, Lioliou et al., 2014, Poppo and Zenger, 2002). This research adds to this work by bringing together the themes of social capital and knowledge in the

specific structure of the outsourcing enclave; a conceptual model of how the social capital that can support knowledge creation and innovation might be formed in an IT outsourcing context where the pressures of short term objectives and contractual governance are present.

Testing of the conceptual framework was carried out by building case studies of two organisations. These were interpreted against four propositions derived from literature, with the results shown in table 6.5. This empirical process led to adaptations of the original, literature derived framework. The testing identified the importance of time factors, learning from short term objectives and relational governance on social capital formation in outsourcing enclaves. These observations, while not generalizable into theory owing to the limited empirical base of this study, contribute ideas for further research.

The process of testing led to the research and creation of two detailed case studies concerning the implementation of IT outsourcing in a UK government agency and a major UK bank. These case studies, found in Chapters 4 and 5 of this thesis also represent a contribution of this research to IS and outsourcing literature. These add to the body of work already existing in this area (eg. Kelly and Noonan, 2008, Levina and Vaast, 2008, Willcocks and Kern, 1998). They also demonstrate the application of interpretive methodology (Schwartz-Shea and Yanow, 2012) to case building in the field of IT and outsourcing.

The research further extends the application of social capital theory (eg. Nahapiet and Ghoshal, 1998, Burt, 2005) into the context of real organisations. Specifically it uses social capital theory as a lens to understand how the use of outsourcing in two specific case studies has affected their IT management competence. In this regard it responds to the call of George et al (2014) for researchers to use social capital theory as a lens for understanding 'finer-grained issues in client-vendor relationships' in outsourcing (p.124), the issue in this case being the creation and sustenance of IT innovation competences based on effective management of social capital.

7.6 Contribution to Practice

Good managerial practice in IT outsourcing is now widely understood and described in numerous books and articles (eg. Aubert et al., 2015, Barthelemey, 2001, Lacity and Hirschheim, 1993b, Willcocks et al., 2011). Practitioners can also call on the expertise of vendors and independent consultants when deciding how to configure their outsourcing arrangements and how to manage transition. Based on this, it is legitimate for practitioners to see the set of challenges in IT outsourcing as being around service sourcing, contract agreement, implementation and governance.

This research proposes an alternative way for managers to conceptualise the change that IT outsourcing might bring to the organisations that use it. The concept of the outsourcing enclave does not contradict the managerial perspective but rather contributes new insights into how practitioners in both outsourcing clients and vendors can secure long term benefits from an outsourcing strategy. The vision is this: alongside offering a solution to operational problems, IT outsourcing is a way of bringing a new system of knowledge into the organisation but one that calls for the social capital in the new organisational structures that outsourcing creates to develop In support of this. In accepting this vision, practitioners must reflect not only on the challenges of managing the immediate aspects of IT outsourcing, but also on how social capital factors influence the way the longer term benefits of the richer knowledge resource it brings can be secured.

This is not a task to leave for later. The case studies show how creativity in the structural configuration of client and vendor resources from the start can quickly release the power of their combined knowledge resources. They also show that delay can hamper progress in achieving the broader goals of knowledge growth and innovation that may be needed once the short term objectives of outsourcing have been achieved. Good practice means being able to pause in the managerial drive towards IT improvement, learn from the results of early action and reflect on how the structures being planned for the outsourcing enclaves will renew effective social capital between client and vendor people.

Practitioners must therefore form a notion of what such social capital actually is. The three dimensions proposed by Nahapiet and Ghoshal (1998) which are discussed

throughout this research provide a good starting point: it is about effective relationships, network structure and behaviour. These are factors that can be observed, standards can be set and progress can be monitored. Incorporation of this monitoring into relational governance processes, alongside the important operational factors that IT outsourcing must handle, could keep the importance of social capital on the management agenda. Social capital, the climate of the relationship between the people who work within outsourcing enclaves, should not only come to management attention when there are problems, it should be seen as a tool to achieve effectiveness.

This alternative perspective on IT outsourcing and its effects on the IT system of the organisation should also not be limited to IT practitioners. When outsourcing happens, the social sphere it affects is not limited to those with 'IT' in their job title. Outsourcing affects the wider organisation, as well as those parties outside the organisation that contribute to its success. The creation of social capital should not therefore be limited to the outsourcing enclave. If knowledge resources are to be released powerfully and are to drive innovation, practitioners must take into account the effects of IT outsourcing on the social capital of the entire innovation network. This can be an uncomfortable process; managers in the 'IT department' introduce outsourcing, managers in the vendor implement it, processes must change, things will go wrong. If the alternative vision of IT outsourcing is to be achieved, these managers must be prepared to step forward and take responsibility for the change, while advocating a new model of co-operation and improvement that is oriented to the future.

A potential problem area that was observed in both cases studied here, is that of undesirable and unpredictable consequences of the contract. Outsourcing affects individuals at all levels of the organisation and is likely to be difficult for many to accept. The contract and its associated governance processes can provide justification and a refuge for unhelpful practices that can interfere with social capital development. If these practices become ingrained, they will slow progress towards achieving the goal of IT outsourcing offering a new knowledge system for the organisation. Managers can be aware of this slowing and should be quick to act if it begins to appear. If strong relational governance norms can be established higher in

the hierarchy of relationships between client and vendor, these can be used to resolve disputes and address behavioural issues before these become ingrained.

Finally, practitioners in both client and vendor organisations should be aware of the potential trap that contractually enshrined agreements around innovation might represent. These risk offering a refuge from the tricky issues of managing knowledge and social capital that is similar in some ways to those discussed above. Unless a clear vision exists as to how such agreements might be implemented, one that is shared between client and vendor, the contractual words may turn out to be of little value. They should not be regarded as an alternative, but rather as a supplement to a strategy of social capital development as is proposed here.

7.7 Limitations of this research

In this thesis an interpretive methodology has been applied to cases of IT outsourcing that are both complex and contextual. Some of the limitations of this are discussed in detail in chapter 3. It should be noted that reliable generalisations about the phenomena observed in these cases to the wider IT outsourcing industry are impossible to make using this methodological approach. The value in an interpretive methodology comes from the deep insights it gives into the interacting facets of IT and how outsourcing has affected these in the specific operating contexts of these organisations. Based on the principle of naturalistic generalisation (Stake and Trumbull, 1982), and the principles of generalisation from interpretive research (Walsham, 1995), individual readers who see relevance to their own situations or experiences in the research, can draw conclusions about how its observations or ideas might be useful to them.

A weakness of interpretive methodology was encountered here in when it was applied to the practicalities of researching in real IT management environments. The time available for research coupled with the need to get access to busy managers' diaries meant that multiple complete rounds of discussion were not possible. This limited the degree to which themes could be structurally developed across the full body of respondents. This was somewhat mitigated by the ability to develop and explore ideas as the interviews progressed and by the follow up interview with the organisational sponsor. A suggestion for future research studies of this type would be to arrange at least two full rounds of interviews in advance, even if these were close together in time.

The ability to offer generalisation would also be improved if it had been possible to prepare more case studies within the time available, given the practicalities of agreeing access. Cases with different vendor configurations or with different relative weights of client to vendor resources would add richness to the discussions of structure. Cases with different short term goals and pressure to achieve these or with a wider variation in national or cultural backgrounds would all add to the understanding of the conditions under which social capital can best be developed.

Potentially interesting voices are also missing from the data. The research was carried out among senior managers in the case organisations, gathering their perspectives on outsourcing and the social consequences of this. To an extent, by being in place some years after outsourcing had happened, they could be seen as 'critical proponents' of the technique, thereby limited in their understanding and inclined to look at the phenomenon through a specific lens. A fuller understanding of the social effects of the outsourcing process would be gained if it had been practically possible to collect data more longitudinally, allowing the preparation and transition phases of the outsourcing project to be included. Adding managers who would choose (or be asked) to leave the IT organisation during this period would possibly add more overtly critical voices to the study.

The social consequences of outsourcing could also be examined from a working perspective, both in client and vendor organisations. It was decided not to do this, first because of the difficulty in securing a sample across case organisations and second because of the ethical complications it might create; it was not intended for this to become, even accidentally, an exercise in action research.

7.8 Proposals for further research

This research represents an initial exploration of the social capital factors relevant to situations of IT outsourcing. It shows, in the limited context of the cases studied, how these factors can be influenced by structural decisions and why they matter in the creation of new knowledge. During the process of preparing this thesis, and in describing its findings and conclusions, a number of further avenues for research have been identified. These would deepen this research and further understanding of the importance of social factors in operational IT outsourcing projects.

Three further research directions are proposed:

1. Devise and pilot a means of understanding social capital development in the outsourcing transition

Social capital dimensions are well established in academic literature (Nahapiet and Ghoshal, 1998) but little work has been done to measure all of these in the specific situation of IT outsourcing transition. This research highlights how social capital needs time to stabilise before management action that addresses the knowledge and innovation competence of the outsourcing enclave can be taken. A further exploration of IT outsourcing literature on the structural and cognitive aspects of social capital focussing on the period of transition is therefore proposed. Some relevant starting points are identified in Chapter 2 (eg. Peppard, 2007, Riemer and Klein, 2008, Zimmermann and Ravishankar, 2014). This literature, coupled with observations made in this study, could be used to devise a method for testing or measuring changing levels of social capital, specifically among organisations using IT outsourcing and their vendors. This method might be in the form of a questionnaire, or group discussion outline that could be implemented in both client and vendor teams involved in IT outsourcing.

The levels of social capital that were measured, or changes in these, could be tested and validated against perceptions of success in outsourcing projects. Success is very contextual, the case studies made here show how definitions of success can be contested within IT organisations and can change as relationships develop. The

understanding of context, derived in this thesis, could provide a useful starting point for this aspect of the further research. Validation could be further enhanced by relating social capital development to an absolute measure of knowledge in an IT outsourcing enclave. Knowledge measurement is difficult to achieve, but here methods of quantifying knowledge such as proposed in Powell and Swart (2008) might provide a useful starting point.

The ideas on the management of social capital proposed here, supplemented by a validated tool for the measurement of their outcomes, could provide a valuable new insight for both client and vendors using outsourcing. This would add to the repertoire of governance and monitoring techniques that currently exist. Such a project would also represent a change in methodological approach, from 'strong' to weak' interpretivism (as discussed in Chapter 3), allowing more positivistic elements into the study of social factors within outsourcing.

2. Explore techniques for management of multi-vendor IT outsourcing configurations from a social capital perspective

Both case study organisations either used or were actively considering use of multiple vendors for their IT outsourcing. This is not a new idea, it was proposed in the 1990s (eg.Lacity et al., 1995) when techniques for managing a client's relationships with multiple vendors were suggested. Putting the social capital lens on outsourcing allows networks of outsourcing vendors to be examined in a different way. This was highlighted by the situation in the case of the Bank, where a social system *between* the vendors seemed to be evident.

Such a system might be structurally conditioned by the competition between vendors for future work with the client (as was the case at the Bank), but might also have cognitive and relational links that act to support the client's objectives. These could reflect individual vendors' respective skill areas and strengths which can be co-ordinated with those of other vendors to deliver service in an increasingly complex IT environment. A deeper qualitative understanding of the balance between inter-vendor co-operation as opposed to competition might aid both clients and vendors in

raising the effectiveness of outsourcing, especially in situations where heterogeneous client innovation is important.

Another interesting aspect of this further work would be to develop understanding of how approaches to relational governance complement contractual techniques in these multi-vendor situations. This research observed the complementarity of the two governance approaches noted by Poppo and Zenger (2002). It could be of value to extend this by examining how the nature of the psychological contract in outsourcing (Lioliou et al., 2014, Miranda and Kavan, 2005a) might apply in multi-vendor situations.

Experience gained in this project suggests that conducting this research through a large client with existing or intended use of multiple outsourcing vendors would be a good way of securing vendor co-operation. Sensitivity to the competitive factors that play between the large vendors would also be needed.

3. Examine the specific effects of social capital that apply to IT outsourcing situations where extensive use is made of offshore development resources.

In the two cases studied here, one (the Bank) made extensive use of offshore resources. This highlighted the importance of these in contemporary IT outsourcing situations. A factor observed in this case was the variation in proximity of the offshore resource to the client organisation and the means that different vendors used to manage this. In some cases the offshore teams seemed to be 'buried' in the wider vendor organisation, in others they were more directly working with the client.

Offshore outsourcing clearly introduces practical problems such as distance, time-zone differences and communication. It also, along with the management techniques used, has social consequences. In this study these consequences have, to an extent, been overlooked as distinct factors in the IT system that involves outsourcing, they simply merge into the other social issues.

A further research proposal would be to examine the social consequences of offshoring in more detail, qualitatively exploring how the relational, structural and cognitive dimensions of social capital develop between client organisations and

offshore IT teams. This would build on existing work reviewed in Chapter 2 (eg. Ghosh and Scott, 2009, Rottman, 2008a). The decisions made by vendors about how client proximity is managed would be interesting mediating factors in such a study. A concrete aim of this research would be to identify best practices in the management of outsourcing enclaves that foster a social climate in which new knowledge and innovation can be created when offshore resources are included.

This project might be of interest to a range of outsourcing vendors who make significant use of offshore resource, this would include all the larger industrial players. It would likely best be approached from the vendor perspective, using these as the target organisations for research as opposed to their clients.

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