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**MANAGING CHANGE IN SERVICES  
OUTSOURCING: The influence of power and  
governance on implementation success**

Royston E. Morgan

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The University of Sussex

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## Abstract

### **MANAGING CHANGE IN SERVICES OUTSOURCING: The influence of power and governance on implementation success**

This research evaluates the change observed during the implementation of an outsourced application development within a large defence organisation in Europe. Whereas most extant research focuses on the firm level or dyadic relations this research aims to uncover how different outcomes can be explained by attending to the micro-processes and specific mechanisms of work between purposive actors as they create the new service.

The research was a longitudinal, six-year in-depth participant observation focused on the implementation of an HRM application carried out by six case organisations within a consortium formed to implement the service. The results of the field study are based on a grounded analysis from semi-structured interviews, focus groups, documents, and over 5,000 email communications involving a total of 62 stakeholders. A conceptual framework of neo-institutional theory, practice and power was used to analyse the process of change as the consortium worked together to deliver the outsourcing.

The findings showed that political goals and behaviour influenced and shaped the outsourcing implementation and exposed the systemic nature of conflict within a constrained project context. The high conflict observed was shown to negatively influence success and supports the notion that strong contracting is only effective in stable contexts. It was also shown that tight control can negatively impact collaboration, by reducing adaptability, forcing vendors to take an inflexible posture. This type of behaviour was observed to increase power and conflict within the project and buyers reacted by increasing control and applying sanctions. This resulting in increased conflict and was a form of feedback loop. The findings also showed control in general is ineffective and can be overwhelmed in situations where there is high demand uncertainty. These observations add to the outsourcing and power/political literature by showing the central role of power and conflict and suggests the final configuration of an outsourcing is a negotiated order that may be at variance to the original objectives.

**Implications for practice**

From a practical perspective, managers should think carefully before rushing into tight preventative contracts and consider the complexity of the demanded service and degree of completeness in their requirements. High uncertainty can lead to outsourcing failure, conflict within the implementation, and unmet expectations, unless specific mechanisms are in place to mitigate this. Furthermore, embedding new work processes and procedures to manage the service within the buying organisation is fundamental to how outsourcing actually works. Buyers and suppliers must pay attention to the design and implementation of processes and routines to manage effective delivery of the outsourced service.

## Acknowledgements

I would like to acknowledge and thank my former colleagues and friends within all the case organisations for their support and frankness during this research project. I really appreciated the openness and professionalism in discussing sometimes complex issues emerging over the lifetime of the project in what were occasionally difficult situations. I would also like to thank my supervisors: Dr Des Doran and Professor Constantin Blome for their support and guidance throughout the development of this thesis. In particular, I would like to thank Des for supporting my application and giving me the opportunity to study this problem on the PhD programme at Sussex.

I dedicate this thesis to my wife Stephanie, who doubled as my unofficial supervisor, and my daughter Elizabeth. Without their support and love this would not have been possible.

## Glossary

### Organisation Short Name Description

<b>Agency</b>	AG	The contracting and procurement organisation of DefOrg
<b>Agency IS</b>	AGIS	Agency's second role as IS service provider to DefOrg
<b>DefOrg</b>	DefOrg	A defence organisation operating in Europe and North America
<b>HRMDept</b>	HRM	The HRM department Allied Command Operations DefOrg
<b>IT&amp;V</b>	IT&V	Independent Test and Validation organisation
<b>PersonSoft</b>	PS	A specialist Defence software provider based in UK
<b>System Integrator</b>	SI	A large Pan-European system integrator and software provider
<b>TestCo</b>	TC	An offshore test and training organisation based in Romania

### Terms Short Name Description

<b>Agile Development</b>	Agile	Iterative incremental deliveries of completed functions delivered in sprints
<b>Back sourcing</b>	Back source	Returning an outsourced service back under internal control
<b>Bespoke</b>	Bespoke	A tailor made software solution built to the specific needs of the buyer
<b>Configuration</b>	Config	Creating software elements that change the system behaviour
<b>COTS</b>	COTS	Commercial off the shelf - a generic software package tailored to requirements
<b>Critical Design Review</b>	CDR	A project milestone where the design is validated and agreed
<b>Deficiency</b>	Bug	A failure of a functional, documentation or system element of the delivery
<b>FAT</b>	FAT	Factory acceptance test - a software test executed at the supplier location
<b>FOC</b>	FOC	The Final Operating Capability of the outsourced service.
<b>HRMSys</b>	HRMSys	The software and service solution delivered by the project
<b>Incumbent</b>	MAPS	The existing software solution at HRMDept
<b>Insourcing</b>	Insource	Sourcing from external provider but managing the service internally
<b>IOC</b>	IOC	The Initial Operating Capability phase of the outsourced service
<b>Offshoring</b>	Offshore	Outsourcing to an organisation outside the country boundary
<b>Outsourcing</b>	Outsource	Contracting an external organisation to provide service for an agreed fee
<b>Preliminary Design Review</b>	PDR	A project milestone where the initial concepts for the design are agreed
<b>Requirement</b>	Requirement	A atomic simple textual statement of functional or system need
<b>SAT</b>	SAT	System acceptance test - an integrated test of the entire IT system
<b>Shared Service</b>	Shared	Centralising a service and providing this to other parts of the same organisation
<b>Statement of Work</b>	SOW	A statement defining the project specific activities, deliverables and timelines
<b>UAT</b>	UAT	User acceptance test - the acceptance of the functional delivery
<b>Use Cases</b>	UC	A charting technique used for design based on universal modelling language V2
<b>Water Fall</b>	Water fall	An implementation approach that emphasises staged sequential process

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## Chapter 1 – Outsourcing: a strategic change

### 1.1 Introduction

Outsourcing is a co-operative inter-firm activity undertaken to improve inter-firm transactions and is 'a decision taken by an organisation to contract-out or sell the organisation's IT assets, people and/or activities' Willcocks and Kern (1998: 29) to external vendors, who then manage the services for an agreed fee (Barthelemy, 2003, Dibbern et al., 2004, Lacity and Willcocks, 1998). It has been argued that the broad aim for organisations outsourcing internal functions is to achieve benefits in cost, flexibility and access to resources. However, actual outcomes have been mixed with some outsourcing contracts achieving poor outcomes with a gap between expectations and actual service performance emerging (Deloitte, 2008). This research is motivated by this problem and paucity of research in-situ and poses a relatively simple question: 'why does outsourcing work in some contexts and yet in other seemingly identical situations fail?' To approach this question the actual practices of work during an outsourcing case will be studied in depth. The findings suggest, that the actual outcome of an outsourcing is emergent and shaped by local adaptations and negotiations, driven by real contingencies, occurring during the implementation (March, 1981).

### 1.2 Research background

Strategic Outsourcing is the subcontracting of part or all of an organisation's internal systems to an external vendor that goes beyond just a simple service contract and takes the form of partnership or alliance (Altinkemer et al., 1994). Outsourcing is a prevalent practice and over 80% of organisations will outsource at least one service (Corbett, 2004). However, despite this widespread adoption there are evident performance issues, increasing dissatisfaction, and an apparent dichotomy as to why outsourcing is so common but lacks empirical justification (Alexander and Young, 1996). In this regard, outsourcing as a business process shares similar sub-optimal outcomes with other large scale changes, inter alia: Business Process Engineering (Holland and Kumar, 1995), Merger and Acquisitions (Cartwright and Cooper, 1993), the chronic problems of ERP implementation (Scarbrough et al., 2008) and even major

failings in large scale projects (Bronte-Stewart, 2009). These failings do not appear to derive from poor decision making per se but from internal factors such as: poor professionalism and communications (Deloitte, 2008), poor understanding of the business or possibly an attachment to implementation practices that 'lack any scientific justification' (Dietz, 2011).

Arguably the IT outsourcing phenomena in the UK and US gained traction in the late 80s and early 90s with a total IT outsource to IBM by Eastman Kodak in 1989 – although there were many similar deals being concluded at that time (Altinkemer et al., 1994). Outsourcing is, therefore, not a new phenomenon: for a long time organisations have sourced functions from the market, for example, in the 60s and 70s bureau based services<sup>1</sup> were common (Cronk et al, 2000). What differs, since the commencement of the outsourcing revolution, is that the term outsourcing is increasingly used as a generic term to describe IT sourcing. Corporations were exalted to do more with less and to release shareholder value as part of concerted effort to address the perceived productivity gaps between Western Industry and the Asian experience. However the diagnosis for the competitive gap stripped away the cultural and social context from the Japanese experience and was mistranslated in a uniquely Western way to focus on; downsizing, outsourcing and business process re-engineering as recipes by which the competitive gap could be closed (Harvey et al., 2001). The call to focus on core competences (Prahalad and Hamel, 1990), Value Chains (Porter, 1985) and especially Peters and Waterman (1982) in 'In search of excellence' lent intellectual justification to outsourcing.

Outsourcing has been the subject of intense research and well over twenty reference theories have been applied, mainly at an organisational level of analysis, in framing the phenomena. Over 90% of all empirical based research on outsourcing have drawn on Transaction Cost Economics, Agency Theory, Resource Based View, Resource Dependency Theory and Social Exchange Theory (Alsudairi and Dwivedi, 2010, Dibbern et al., 2004, Lacity et al., 2010).

Alliances, joint ventures and outsourcing all share in common the perceptions

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<sup>1</sup> Bureau services (sometimes referred to as utility computing) offer centralised processing and storage for a fee. This concept is extended by suppliers offering standard third party applications on their hosting platform referred to as Application Service Provision (ASP) or even Software as a Service (SaaS) where a supplier offers its hosted software as a service.

of low satisfaction, relatively high failure rates, poor returns, critical loss of knowledge and IPR, as well as premature closure (Madhok, 1995). What unites these diverse areas is the common thread of organisations working together in a social context and collaborating for a common purpose yet apparently failing to achieve organisational benefits. Little has changed since Mintzberg et al. (1996) asserted that formal approaches have had minimal success in addressing the problem of collaboration as this is embedded in the specific context, and closer attention needs to be paid to the social aspects of collaboration. The ongoing high number of failures, dissatisfaction and a continuing high level of outsourcing activity either means managers are taking decisions in ignorance of the potential risks or there is a 'IT outsourcing paradox' that despite the large scale adoption 'the theoretical benefits have largely not been confirmed' and general evidence for outsourcing's benefits is 'relatively scarce' (Rouse, 2007: 129).

### **1.2.1 IT outsourcing as an embedded process**

Information technology is embedded in the work processes of organisations and much of what is regarded as technology edge is tightly bound to the people, organisational routines, knowledge structures and processes within organisations. This integration with core processes, specific context, and the close relationship with the people delivering the service, mean that IT outsourcing is particularly problematic, and processes, people and technology are tightly bound and functionally inseparable (Orlikowski and Lacono, 2001).

IT is often regarded as a tool or a black-box, conceived as stable and capable of being used by anyone in an unproblematic way (Latour, 1987). User involvement is optional, resistance unproblematic and implementation underpinned by a technologically determinist perspective. And there is ignorance of the way 'technologies play active roles in social systems embodying rules and guiding action' (Boudreau and Robey, 2005: 4). Exchanges between actors during implementation of outsourcing are structured within the social space and must be understood within the 'various social and institutional contexts' within which it is embedded (Orlikowski and Lacono, 2001: 131). From this perspective workplace implementations of technology can be regarded as 'thoroughly social processes' (Berg, 2006).

It has been argued that Information Technology Outsourcing (ITO) is too complex to be fully explained by any single reference theory. This is the situation that has led some researchers to claim a new approach in academic research is needed, moving away from a too heavy reliance on reference discipline theories, towards the development of an endogenous theory of outsourcing based on specific empirically grounded research accounting for the social aspects of change (Lacity et al., 2011a). Research into the practices of implementation going beyond unsupported plausible prescriptions and exhortations is rare (see for example: Cullen et al., 2006). There are very few real longitudinal in depth process studies; technology is treated as homogeneous (as are stakeholders), an overriding unitary perspective prevails, with consistently high level approaches applied that avoid the real practices of work (Van de Ven, 2007).

This thesis aims to examine the knowledge gap in outsourcing and based on the findings proposes that the observed outcomes are a result of a loose coupling between a rational logic of implementation, built on strong contracts and formal project control, and the actual practices of work carried out by developers, project managers and users. Furthermore, no outsourcing implementation is 'de novo' and is always influenced by prior history and operates within a context of competing interest groups. And as a result is essentially a conflictual environment. Everyday problems, failings and inconsistencies within this context cause deviations from plans resulting in differences between initial expectations and eventual outcomes. It is this that can result in a perceived failure in the implementation. This research focuses in detail on the activities and processes during the implementation and adds to the theory of outsourcing by showing how the change actually unfolds and shows that the outsourcing outcome is a constrained and emergent process.

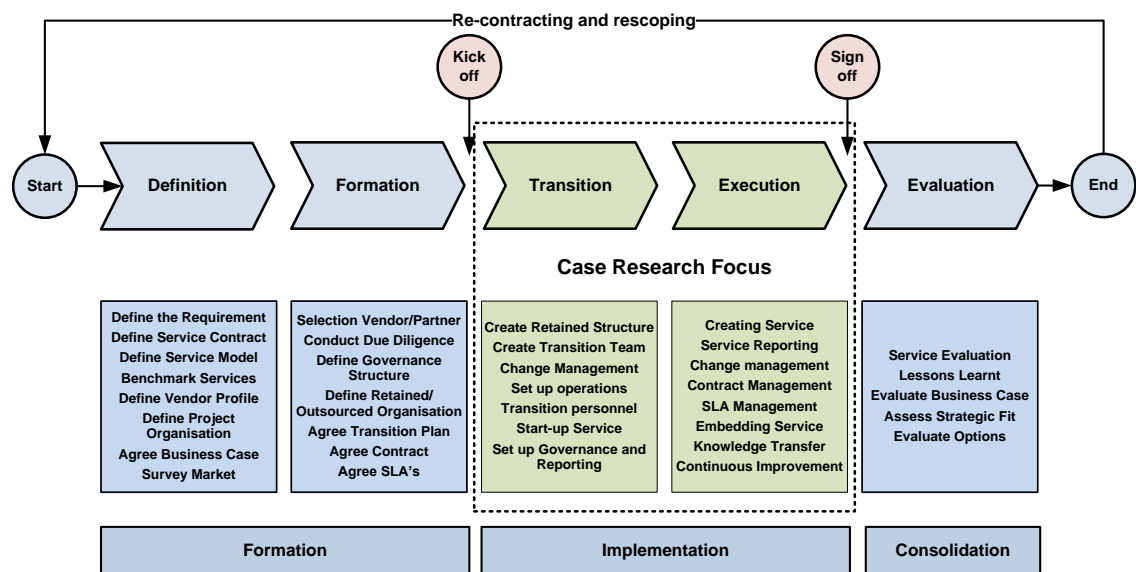
### **1.3 Research focus and objectives**

Outsourcing is an important and widespread form of organising sourcing. The outsourcing market is large, for example, the UK market alone in 2011 had a turnover of £207 billion, or 8% of the economies output, and this was still growing at £20 billion annually in 2015 (Oxford Economics, 2011, Whitelane Research, 2015). However, there are apparent performance issues and a dichotomy as to why 'it' is so common a

practice but can sometimes have poor outcomes despite the use of robust implementation techniques. If only a part of this shortfall in outcomes could be addressed the gains would be immense.

Much of outsourcing research has been based on interviews with senior management or decision makers about the definition and formation of outsourcing, with limited attention to the transition and execution phases, due to the real difficulties of observing an outsourcing in-situ.

**Figure 1-1 - Lifecycle model outsourcing**



Source Author: based on Morgan (2009)

The purpose of this research is to explore this neglected part of the problem, the implementation phase of the outsourcing lifecycle (Figure 1-1 derived in the literature section 2.3), where the actual service product is created and embedded into the outsourcing organisation. It is assumed that it is in the actual processes of work the problems emerge. This is approached in this research by identifying those factors in the history, context, and actual development that influenced progress, and from this understand how the change developed over time.

### 1.3.1 Theoretical lens

To enable understanding a neo-institutional, social practice and power perspective will be used to consider how organisational routines and mechanisms constrained and shaped the outsourcing implementation (Zucker, 1987). An institutional lens considers

how organisational routines and mechanisms can constrain implementation processes within an inter-firm context to maintain stability and control (Zucker, 1987). Early Institutional Theory focused on the deeper and more resilient aspects of social structure and is based on the idea that organisations consist of regular patterns and routines across social contexts and have organising principles or logics that operate within organisational fields that act to mediate actor action (Scott, 2004a). Institutions are ‘material practices or symbolic constructions’ (Friedland and Alford, 1991: 248). The underlying assumption underpinning institutional theory is that organisations are deeply embedded in social and cultural practice and organisational structure and practices are ‘strongly influenced by institutional demands’ (Weiss et al., 2013: 3). Barley and Tolbert (1997) earlier argued that institutional theory and structuration are inextricably linked and from their perspective, ‘institutions are to social action as grammars are to speech (ibid: 96).’ From their standpoint institutions represent the material routines and legitimised norms adapted by the process of structuration occurring in the observed practices and processes.

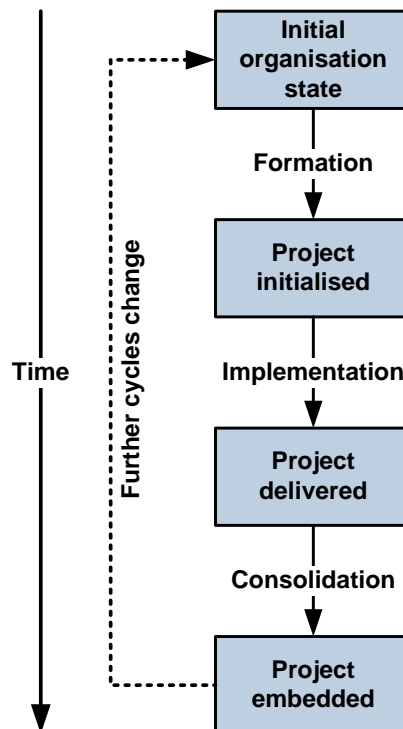
There is a sizeable body of research within the field of institutional theory<sup>2</sup> which considers institutional effects but far fewer adopt a process oriented approach that includes a wider conceptualisation of power (Currie, 2009a). This thesis responds to the call for more process-oriented organisation research that expands the agenda, to not only consider stability and inertia, but explicitly study the process of change emerging from the micro-practices of work (Currie and Swanson, 2009). The focus of this study is on the implementation phase of a large scale IT implementation, firstly, as there has been so little attention given to the micro-practices of change in the literature, and secondly, it is proposed that it is in the actual processes of work, as purposive actors solve problems, that explanations can be found for different outsourcing outcomes. The research is informed by an adaption from the literature of the processes of institutionalisation proposed by Tolbert and Zucker (1996); habitualization, responding to the need for new structural forms; objectification, increasing adoption and implementation; and sedimentation, where changes are consolidated and new norms established. This is illustrated in the process

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<sup>2</sup> Following Barley and Tolbert (1997) suggestion institutionalisation and structuration will be used interchangeably in this thesis.

model in Figure 1-2 where the three step model is shown as formation, implementation and consolidation derived from the literature and more in line with the case vocabulary of a project oriented outsourcing implementation.

**Figure 1-2 – Model of institutionalisation of change**



Source: based on Tolbert and Zucker (1996)

### 1.3.2 Research questions

The overall aim of this research, using the lenses of outsourcing and organisational theory, is to contribute to the understanding of IT outsourcing by examining the practices of work that take place during an outsourcing implementation as actors solve problems and deliver the service. To do this the research adopts a longitudinal process analysis of an application development outsourcing case. The proposition within this thesis is: Outsourcing as a management innovation can be understood as a process of change, and the practices of implementation, power dynamics and the interactions between actors, help explain different outcomes. The derivation of the case questions and conceptual framework is covered in **Chapter 2**.

**The research questions in this case study are:**

1. In what ways do antecedents and a prior history impact and constrain the

- implementation processes of outsourcing?
2. In what ways does strong control and governance impact the development practices and how they evolve during the implementation?
  3. How do power and conflict arise during the implementation of outsourcing? And how does power and conflict impact work practices?
  4. In what ways is the nature of situated change emergent and constrained in an outsourcing project?

**The outcome of the case analysis is:**

- What can the findings tell us about the challenges of outsourcing practice?
- How might these findings be used to improve the practice of outsourcing and deliver better outcomes?

From this standpoint two main contributions to theory are sought: firstly, to determine how people regulate their work in outsourcing to achieve the outcome and, secondly, to extend the theoretical understanding of this business process by adopting an explicit practice-based social and power dimension.

### **1.3.3 Research framework**

The research reported in this thesis is a longitudinal supply chain case study (Gummerson, 1991, Yin, 1994) using participant observation (Waddington, 2004), interviews and documentary analysis of contracts and substantial volumes of on-going e-mail traffic (May, 2005, Rowlinson, 2004) focusing on the negotiation, initialization, implementation and service activities between six collaborative case organisations in the Defence Industry as they implemented a large-scale human resource application (HRMSys) for a multi-national defence organisation of 17,500 personnel operating across 28 countries in Europe and the United States (DefOrg).

### **1.4 Scope limitations**

The research context involves six main case organisations split over suppliers and the client organisation. The contract and governance were driven from the client side and suppliers, although supporting contractual decisions and project management were subservient to client demands. This meant that suppliers were reactive to scope and context changes and were broadly subordinate in power terms throughout. The

general context, in terms of power, was asymmetric and responses by actors were framed and must be understood by this fact.

The second limitation is in the object of study: the outsourcing of an application development. This type of sourcing differs from outsourcing an existing operation in that the processes and practices observed focus on the delivery and implementation of a software artefact in a project context rather than focusing on the day-to-day operational processes. The implementation also covers the merging of the new system control routines and processes within an existing infrastructure. This added complexity makes the process of implementation time-bound, concretely targeted towards a project end-date and therefore accentuating the observed power dynamics.

The third limitation concerns the question of what is meant by outsourcing success and how this relates to the internal dynamics under study. Within this chosen approach, while it is possible to attribute delays to factors such as poor capabilities in requirement planning, suggesting a link to overall success is difficult. Indeed within the project under study, despite time and cost overruns, from a client perspective success was claimed. As a consequence although better conceptualisations of success and failure are proposed during the discussion this thesis cannot make any claims for predicting overall success of an outsourcing contract and can only suggest factors leading to process variability.

## 1.5 Contribution

### Methodological

- Integrating of documentary evidence and participant interviews along with actual email and forum traffic to construct an entire narrative timeline.
- A longitudinal participative process that examined the actual processes of work in medias res. There are very few actual process longitudinal studies that trace the action as it happened.

### Theoretical/conceptual

- Showing how the timescales and contractual demands of outsourcing force an instrumental focus during implementation, and accordingly can preclude innovation and limit organisational change.
- Demonstrating that conflict and the use of power is endemic in a contracted

work situation and arises naturally amongst competing coalitions as they perform in real work situation.

- Adding to the concept of change within the constrained context of outsourcing. This is a process of change delimited by a contractual fixed term, and positions outsourcing, as a management practice, as a forced change within a fixed time scale.
- Adding to the outsourcing literature by showing the outsourcing outcome is constrained by the implementation context and is emergent.

## 1.6 Structure of Thesis

**This introductory chapter has:**

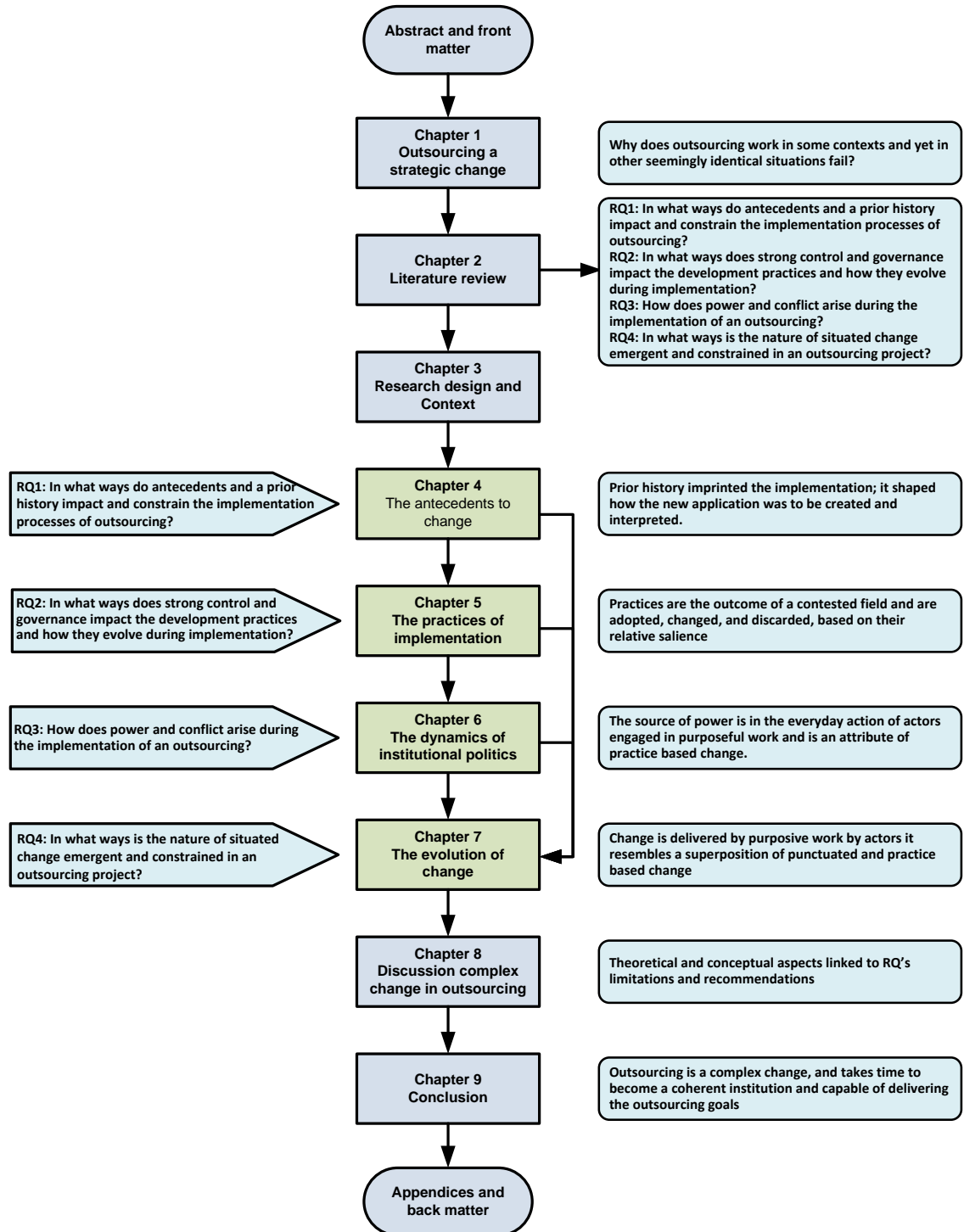
- Introduced the problem of occasional poor outcomes in the outsourcing field that have been observed in the literature that is the core of this thesis.
- Provided a background to outsourcing practice and positioned the problem of outsourcing as a neglect of the complex social processes that occur during implementation.
- Outlined the theoretical lens and approach adopted within this thesis and stated the research questions to be explored.

**The remaining chapters are structured as shown in Figure 1-3.**

- **Chapter 2** provides a relevant context from the literature, firstly, by briefly focusing on the extant outsourcing literature before exploring in the second half relevant themes of power and practice.
- **Chapter 3** describes the research design and approach with an emphasis on the deep longitudinal nature of this qualitative study.
- **Chapters 4 to 6** cover the main detailed findings from the field observations and align with the four main research questions shown above.
- **Chapter 7** integrates the findings and discusses the nature of complex change demonstrated by the case results.
- Finally **chapter 8** discusses the research questions and links this to the theoretical perspectives introduced during the literature review and the thesis concludes in chapter 9 with the overall research outcome, limitations and

future research directions.

Figure 1-3 - Overall structure of thesis



## Chapter 2 – Literature review

### 2.1 Chapter overview

This chapter will position the case study within the broad stream of the outsourcing literature and will introduce the theoretical framework of institutional change within which to place the observed case phenomena.

#### **This chapter:**

- Contextualises the research within the outsourcing literature with a rationale for the focus on the implementation phase within the outsourcing lifecycle.
- Introduces the theoretical perspective of institutionalisation, structuration as the process model, and practices as the object of study within an outsourcing implementation.
- Proposes power and conflict as major influences on the progress of outsourcing drawing attention to the impact of power.
- Sets down the research questions within a theoretical framework.

It will be argued that the high-level macro perspective adopted by a large part of the literature ignores the micro-processual nature of outsourcing implementation and the intricacies of the actual engagement between the parties (Dibbern et al., 2004). The research proposition is that an outsourcing implementation can be a constrained and negotiated process that results from the parties having different expectations and objectives that are reflected in the way they work together in delivering the service.

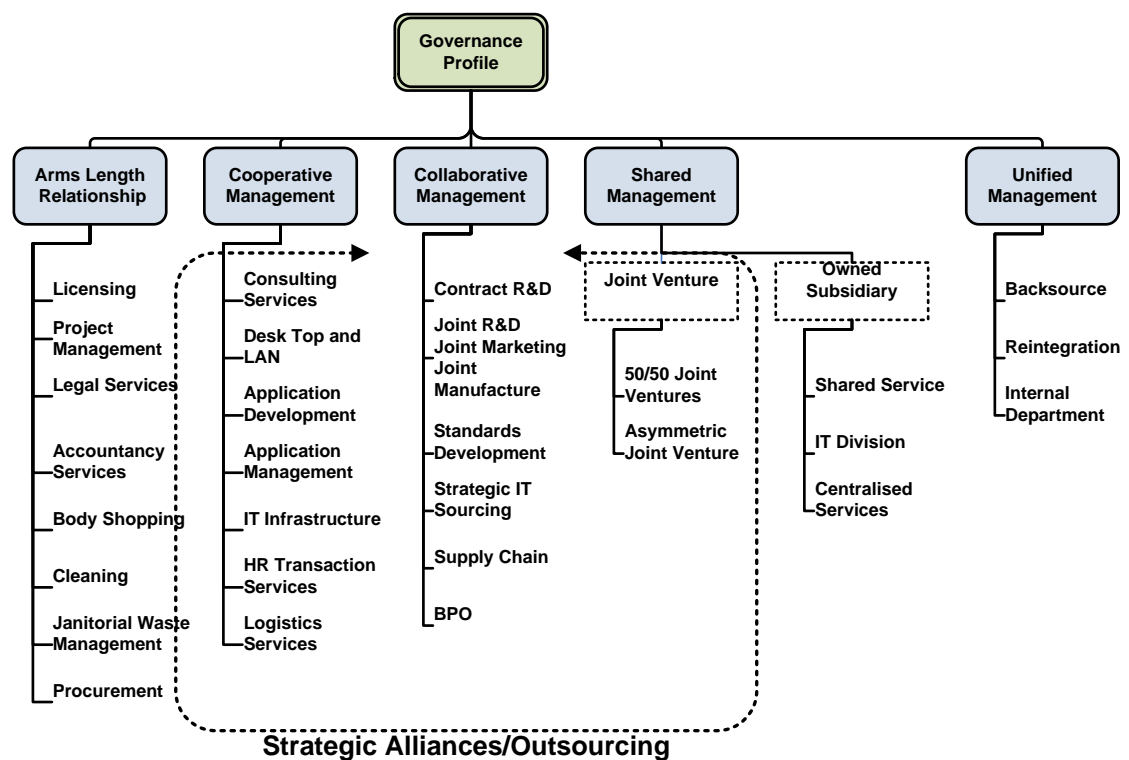
#### 2.1.1 Outsourcing as an inter-firm alliance

Alliances can be defined as ‘relatively enduring inter-firm cooperative arrangements, involving flows and linkages that utilize resources and/or governance structures from autonomous organisations’ (Parkhe, 1993: 794) and involve the exchange, sharing, or co-development of products, technologies, and services (Gulati, 1998). They are ‘long-term’, ‘trust based’ relations (Jones and George, 1998) where the parties commit resources to a relationship for a common benefit (Fontenot and Hyman, 2004).

Alliances are hybrid in form, intermediate between market and hierarchy, and are a form of vertical or horizontal integration where the management of the relation

borrowed from the partner's governance structures (Spekle, 2001, Williamson, 1985a). Alliances from this perspective can be seen as part of a broad spectrum of relationships (**Figure 2-1**) that cover: joint ventures (a form of equity based alliance), joint research and development, marketing cooperation, long term supply arrangements and outsourcing (Kale and Singh, 2009, Langfield-Smith and Smith, 2003).

**Figure 2-1 - Outsourcing positioned as an alliance**



**Source: Author**

Outsourcing can be conceptualised to include many of the aspects of strategic alliances (for example Nooteboom et al., 1997, van der Meer-Kooistra and Vosselman, 2000). However, adopting this perspective tends to ignore some basic characteristics of outsourcing; that the service is being delivered by a vendor under a contract, that is time bound, and the flow of resources is one way from vendor to the outsourcer (Belcourt, 2006, Mayer and Teece, 2008). Whereas, alliances tend, in principle, to be a form of 'inter-firm link' of long duration, combined governance, and involve contracts with a wider scope involving dispute resolution knowledge transfer and joint decision making (Mayer and Teece, 2008). Furthermore, alliances rely to a much greater extent (than outsourcing) on complementarity of resources and organisational compatibility

as often the end goal (of the alliance) is often difficult to specify in advance - which is not the case in outsourcing where the outcomes are often specified in detail and contracted (Kale and Singh, 2009). The fixed contract duration in outsourcing, where business partners are attentive to the time-bound delivery, focuses the collaboration on instrumental goals and may restrict the development of diffuse social exchanges, trust and relationship building, needed in alliances, where end goals are more uncertain, requirements are unclear and/or developmental in nature (Kale and Singh, 2009, Weber and Mayer, 2011).

From this perspective, outsourcing is an institutional change involving the embedding of new routines and processes and management of activities within the context of a stable existing operation but is time bound, in the sense a contract has a defined time limit, within which the implementation takes place. The common thread linking alliances, joint ventures and outsourcing, is that these are forms of work where organisations work together for a common goal and employees have to cooperate with people outside their own organisational boundary to deliver the service.

Alliances, outsourcing and joint ventures share common issues of difficult management control structures and tend to have high incidents of problems and low success rates (Kale and Singh, 2009, Langfield-Smith and Smith, 2003). With reports of objectives not reached, clients giving up and back-sourcing, partner opportunism and premature closure (Oshri and Kotlarsky, 2013). As part of the spectrum of inter-firm relations outsourcing is a controversial area, with reported outsourcer dissatisfaction, poor financial outcomes, hidden costs, HR issues and assertions that outsourcing delivers unclear business benefits and is no more than a passing management fad (Alexander and Young, 1996, Deloitte, 2005, Hendry, 1995). In a similar way Madok (1995) and Alexander and Young (1996) pointed out there are increasing numbers of joint ventures, alliances and outsourcing contracts but managers express high levels of dissatisfaction, difficult relations and poor outcomes. Furthermore, organisations that actually switched their outsourcing suppliers reported relationship and quality issues high on the list as the rationale for change. In a recent survey of outsourcing buyers 65% renegotiated their contract, 30% cancelled and switched suppliers and 5% back-sourced the service in-house (Cullen et al., 2014: 51). It has been suggested that part of the explanation for these apparent problems is an overemphasis on instrumental

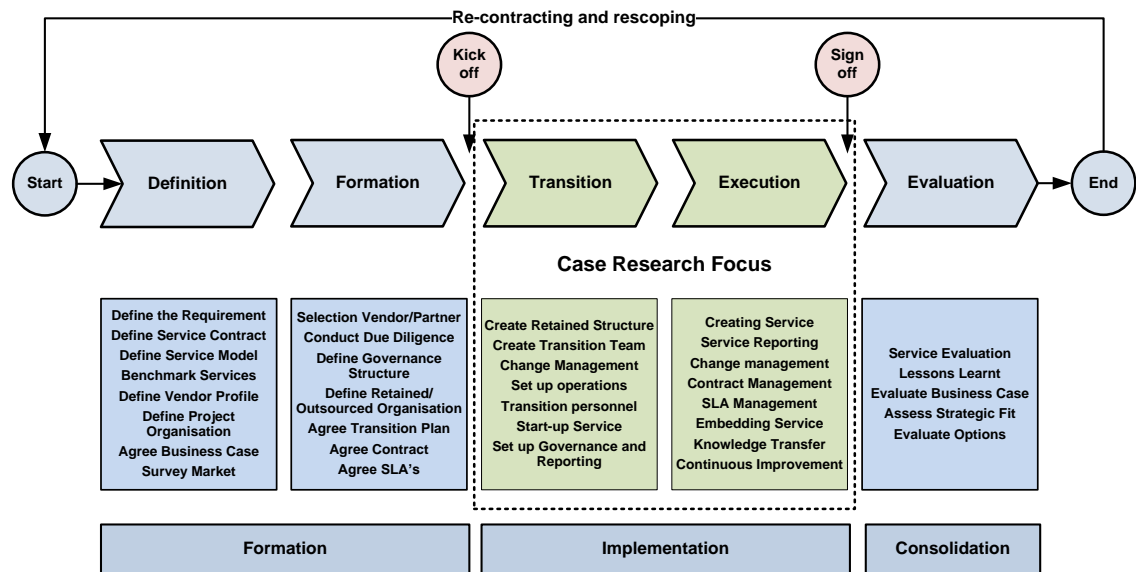
outcomes, a lack of understanding of the pitfalls of outsourcing , and a continuing neglect of social and contingent implementation issues (Gulati, 1998). An outline of the major pitfalls/issues with outsourcing is shown as below

**Table 2-1 - The pitfalls of outsourcing**

<b>Pitfalls and problems with outsourcing</b>	<b>Selected Authors</b>
Information security vulnerability	Ketler and Willems (1999), Kurdia et al. (2011), Pai and Basu (2007)
Dependency on supplier	Narasimhan et al. (2009), Parmigiani and Mitchell (2010), Pirannejad et al. (2010)
Controlling outsourced processes	Aris et al. (2008), Bertolini et al. (2004), Liou and Chuang (2010)
Difficulty to return to pre-outsourcing status	Bertolini et al. (2004), Whitten and Leidner (2006), Whitten and Wakefield (2006)
Reduced job security staff	Adeleye et al. (2004), Morgan (2009b), Pulignano (2005)
High initial costs	Hirschheim and Lacity (2000), Adeleye et al. (2004)
Hidden costs	Hendry (1995), Larsen et al. (2013)
Increased risk	Bahli and Rivard (2003), Chou and Chou (2009), Pirannejad et al. (2010)

## 2.2 The outsourcing lifecycle

The outsourcing lifecycle is underpinned by the assumption of linearity, rationality, and a notion that implementation proceeds organically through a sequence of stages that are cumulative and predictable (De Rond and Bouchikhi, 2004). These models consist typically of distinct phases around the definition, preparation, implementation and rescoping of the delivered service (Chou and Chou, 2009, Cullen et al., 2006, George, 2005, ISO 37500, 2014, Morgan, 2009a). Figure 2-2 shows a consolidated view of the lifecycle model split over the main stages of: definition, formation, transition, execution and evaluation that will be used to frame the outsourcing discussion.

**Figure 2-2 - Consolidated life-cycle model**

Source: Author

Shown in **Figure 2-2** is also the split of the lifecycle model over the reference theory stages shown later in **Figure 2-3**. The focus of the detailed case analysis is on the transition and execution phases where limited attention on the micro-processual factors leading up to successful implementation was evident from the literature. This focal research area was delimited during the analysis by two observed project milestones, firstly, the 'kick off' meeting where the project was formally started during February 2011, and the 'signoff' into service of the first phase of the initial operating capability (IOC) that occurred in June 2013. In the following sections a selective overview of the literature will be mapped to the phases outlined above.

### 2.2.1 Defining the service requirement

The outsourcing literature has tended to operate at a high level with a focus on: strategic implications (Cullen et al., 2005a, Lacity et al., 1997), the selection of services to outsource (Lorence and Spink, 2004), partner selection, knowledge transfer (Singh, 2006), the management of risk in outsourcing (Bahlia and Rivard, 2004) with only very occasional forays into the people aspects of outsourcing or internal behavioural mechanisms, such as commitment (Coyle-Shapiro and Morrow, 2006, Morgan, 2009a).

The outsourcing life cycle begins with a decision to adopt and ends with the closure of the contract when the service transition is complete (Hirschheim et al.,

2002). The first phase, defining the process, concerns the need and the rationale for why and what to outsource (Chou and Chou, 2009). It is a decision that is made under risk, is often irreversible, and exhibits hysteresis<sup>3</sup> (Rouse, 2007, Tiwana and Bush, 2007). It is where options for change and partners are chosen under some uncertainty, and once underway is very difficult to stop, and is a decision that has high inertia. The question of why outsourcing is an improvement option has been often bound to cost benefits and focused on the make or buy decision, defining the choice of functions, where transaction costs are minimised (Dibbern et al., 2004, Williamson, 1985a, b).

The core rationale is that effective governance structures reduce cost and the decision is one of defining the scope of the sourcing decision (Holcomb and Hitt, 2007). However, this viewpoint has been criticised as insufficient and overly simplistic and static, not accounting for risk, critical assets and resources, or the social environment (Mol and Kotabe, 2011). Furthermore, a transaction cost approach take little account of the internal capabilities of the organisation, is sometimes regarded as a static perspective, and is often needs to be combined with other reference theories to explain the complexities (Dibbern et al., 2004). It has been suggested that synergies can arise from strategic and operational factors by sharing resources, routines and knowledge, across boundaries and thereby yielding extra benefits (Prahalad and Bettis 1986). But other research has shown contradictory results, especially in specific contexts, where different practices and cultures prevail (Barthelemy and Geyer, 2001, Lee et al., 2010). Furthermore, empirical research into core concepts such as asset specificity within transaction cost theory, or aspects of the resource based view, when used in explaining outsourcing has cast doubt on the explanatory power of these borrowed theories in specific contexts (Lacity et al., 2011a). It has also been argued that a transaction cost perspective largely ignores the mechanisms of collaboration and active social processes occurring within inter-firm relations, suggesting that these social processes require no explication (Langfield-Smith and Smith, 2003). An extended overview of a selection of core reference theories used in outsourcing is shown later as **section 2.2.6.**

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<sup>3</sup> The change in state lags behind the changes in the environment and cannot revert completely back to the original state – in this example to the situation before the outsourcing was done.

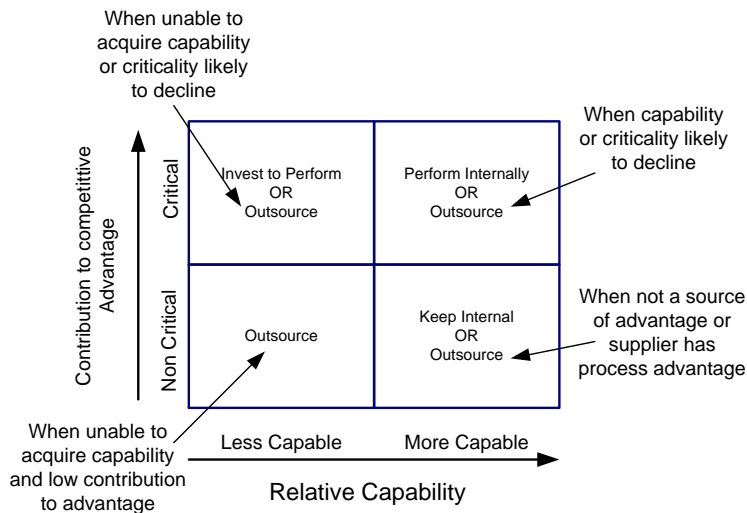
### 2.2.2 Formation and selection

Implementation focuses on the delivery of the service once the decision has been made and sets the functional and technical quality expectations for the engagement (Grönroos, 1998, Rouse, 2007)<sup>4</sup>. It is a formative part of the process and at this stage the initial conditions are set for how the relationship will work throughout the contract. It involves, inter alia, selection of the vendor, defining the service and setting down contract terms. Selecting the correct vendor is critical to the overall success of outsourcing and involves two main aspects a) The general fit and ability to deliver the service, and b) how the supplier manages the relationship. Greer et al. (1999) set down these typical guidelines for vendor selection and emphasised the importance of conducting a thorough due diligence during acquisition to assess whether they are actually present in a prospective supplier. In addition Levina and Ross (2003), in a vendor study of the outsourcing relation, argued that vendor advantages come from their ability to develop 'a complementary set of core competences' developed from experiential learning acquired during the process of delivery.

Access to resources is a key driver in strategic outsourcing, but to exploit this effectively managers need to understand internal resources, processes and stakeholders in order to make an informed choice (Gottschalk and Solli-Sæther, 2005, Verwaal et al., 2009). Balancing risks at the start of an outsource relationship is critical and Willcocks and Feeny (1995) proposed a sourcing framework based on the degree of process criticality, uncertainty and comparative vendor/buyer capability. In a similar way McIvor (2008), integrating RBV and TCE, developed a sourcing framework for the selection of processes to be outsourced and outlined a sourcing strategy accounting for process criticality and ability to perform (Figure 2-3).

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<sup>4</sup> The concept of functional quality (the process of service delivery) and technical quality (what the process delivers) expectations is derived from Service Management. For a complete discussion see Grönroos, C. 1998. Marketing Services: The Case of a Missing Product. *Journal of Business and Industrial Marketing*, 13, 322-338, Grönroos, C. 2011. Value Co-Creation in Service Logic: A Critical Analysis. *Marketing Theory*, 11, 279-301, Grönroos, C. 2012. Conceptualising Value Co-Creation: A Journey to the 1970s and Back to the Future. *Journal of Marketing Management*, 28, 1520-1534.

**Figure 2-3 - Sourcing Selection Framework (McIvor 2008)**

Source: McIvor (2008)

Dobrzykowski et al. (2010) extended this criticality/capability matrix paradigm along the supply chain and beyond a single firm boundary, by adding the idea of value co-creation, and showed how the resource-based view can be applied to jointly held and developed critical resources. Holcomb and Hitt (2007) showed, within a transaction cost perspective, how linking together specific value chain activities can increase overall value in excess of the extra cost in setting up and coordinating such activities. Bhagat et al. (2010) also showed a comprehensive framework for linking value across the relationship that included client, vendor and relationship value contributions - demonstrating the utility of moving beyond a firm's boundary within collaborative relationships. This latter multi-perspective view has received some support in empirical work that does show managers holistically evaluate across multiple factors such as cost, risks and the criticality of the process (Tiwana and Bush, 2007). However, most empirical research still consists of plausible prescriptions and conceptual frameworks, based on limited case material or derived from management self-reports and, as a consequence, suffer from a lack of empirical support that these rules are actually represented in practice (Rouse, 2007).

### 2.2.3 Transition and execution

The types of services that are outsourced tend to have different characteristics that demand specific approaches in terms of contract management, relationships and

governance (Cullen et al., 2005b). Whilst generic or simple repetitive services, generally require standard market contracting, highly specific embedded services demand integrated governance and relational contracting (Williamson, 1985a). Furthermore, as Cox (2004) argued, buyers who fail to account for contextual conditions create contracts and governance structures that are inappropriate for the specific contract. Hansen and Rasmussen (2013) extended this argument to include supplier expectation to the contextual argument, showing that certainty in continuity, cost recovery and on-going new business supported cooperation while uncertainty promoted conflict.

The outsourcing of application development require partners to collaborate in a similar way to short-term alliances formed for a pre-determined time to deliver a specific goal (Bignoux, 2006). Furthermore, especially in the public sector, they must engage in this activity within the context of strict contracting and set timescales. In such circumstances we propose that trust and collaborative working practices, which are essential to clarify sometimes vague business requirements, can be inhibited by strict formality and contracting especially during the implementation phase (Qi and Chau, 2012).

At the start of the implementation phase, the vendor selection, an effective contract, clear delivery scope, and a well-managed start-up are critical initial conditions that if managed poorly will risk starting the relationship off in an adversarial direction (Willcocks et al., 2004, Willcocks and Lacity, 1999). The importance of this initial conditioning was further emphasised by Kliem (2004) who showed that the benefits of outsourcing could not be achieved unless risk management, relationship management and appropriate governance were in place. Similarly, Chou and Chou (2009) pointed out that good quality management, risk processes and effective project management were essential for delivering a successful outcome in outsourcing.

Despite these exhortations, Beaumont (2006) pointed out the dearth of research into service level agreement (SLAS), requirements planning, governance and change processes particularly in terms of changing services during operation. Little has changed since Saunders et al. (1997) criticised the over euphoric perception of outsourcing and the key role of the contract and governance in the initial stages of the process. Stating that managers were expert when constructing contract clauses but

lacked deep experience in specifying and controlling the service they needed, relationship management, and how to actually manage service fluctuations. Saunders et al. (1997) also went on to show that many managers were less excited with their contracts after living with them for a while and were frustrated by their inability to measure benefits and manage outcomes. The authors concluded that whilst the perceptions of success or failure were mixed, in their respondent's mind one thing was clear; that having an effective contract was correlated with overall success and was 'important in both supplier and partnership arrangements' (ibid: 75).

#### **2.2.4 Evaluating outcomes**

Literature on the achievement of outsourcing is often derived from expectations, opinions, extrapolations or hopes gathered very early in the outsource engagement (Rouse, 2007) and very little focus on any structured empirical analysis (Dibbern et al., 2004). Where savings relating to outsourcing contracts are claimed results have been mixed, with most reports suggesting around 25-50% of all outsourcing contracts fail to meet the original objectives (Willcocks and Lacity, 1999). And even these savings that are claimed derive from short-term financial changes or budgetary adjustments (Lacity and Hirschheim, 1993). Furthermore, many of the research papers citing benefits from outsourcing, particularly cost savings, are mainly based on case studies that are repeated, and/or unaltered across a series of papers (Rouse, 2007), with no discernible new research to validate the original contentions (for example Lacity and Willcocks, 1998, Lacity et al., 1996).

There have been attempts in validating general benefits, for example, Elmuti et al. (2011) carried out a comparative analysis of factories within the same organisation; Plant A that had outsourced a substantial part of the workforce and Plant B which had not. Although interesting most of the improvements observed were difficult to link to the process of outsourcing itself and perhaps even supported that most improvement in outsourcing could be achieved by routine management practice (see for example Hirschheim and Lacity, 2000). Conklin (2005) in observing the prevalence of transaction-based HR outsourcing pointed out the complexities, especially the emergence of HR as strategically important, and the way the function is linked to key processes such as resource planning. This added complexity has meant decisions in

outsourcing HR have become more problematic and it is just too simplistic to consider the core/non-core dichotomy and suppliers have to be able to offer transactional as well as what can be considered strategic services (Klass, 2003).

Willcocks et al. (2011: 714) argued that ‘extracting value from outsourcing engagements is a key objective for client firms and vendors’. However, research into actual outcomes has often meant using initial management expectations without any significant re-evaluation or in-depth justification of the benefits (Deloitte, 2008, Herath and Kishore, 2009, Oshri and Kotlarsky, 2010). This has meant that little empirical research has actually been conducted and what has been done shows poor construction of the cost variables (Rouse, 2007), poor use of theoretical constructs, (Molloy et al., 2011) or revealed that many organisations have no method to measure savings at all (Oshri and Kotlarsky, 2010). What this implies is that much of the research into outcomes achieved is poorly underpinned with effective empirical evidence and consequently of little use in assessing whether or not outsourcing actually delivers anything at all.

Running counter to the idea that outsourcing can reduce costs, Belcourt (2006) asserted that HR outsourcing compared unfavourably with other approaches to cost reduction. For example, whereas business process re-engineering can yield up to 50% savings, outsource savings were stated as around 10% to 15% with 40% respondents reporting higher costs. Furthermore, although some reasonable levels of satisfaction have been reported they are caveated by higher than expected costs, unrealized benefits, poor quality, poor communications, and insufficient time spent on vendor selection and service levels resulting in service problems (Deloitte, 2008). Finally, Rouse (2007) pointed out the virtual absence of an effective business case underpinning many contracts, with over-optimistic expectations, poor planning and vendor management, resulting in dashed hopes, hidden costs and unfulfilled promises from outsourcing practices.

### **2.2.5 Focus is on the physical implementation processes**

Cullen et al. (2005a) suggested that anecdotal stories of failure may be a consequence of too high a level of analysis, and failure to consider the configuration of the outsourcing which drives the outcome. However, even when proposing the

configuration of the retained organisation as a key factor (see Willcocks et al., 2006) researchers and practitioners often remain firmly focused on instrumental and technical matters, and display limited attention to the softer relational aspects seen as essential prerequisites for a successful collaboration. In addition, although this focus on configuration (for example Whitley and Willcocks, 2011) is a useful recipe, particularly from a practitioner perspective, close collaborative relationships are much more important preconditions for success, and communication, effective management processes, trust and coordination all underpin successful outcomes (Vanpoucke and Veereke, 2010).

### **2.2.6 Selective overview of main reference theories applied to outsourcing**

Transaction Cost Economics, Agency Theory and the Resource Based View are argued to inform the choice of market placement based on resource and cost considerations. This notion has been criticised for taking a static view of organisations, ignoring the processual nature of exchanges and relations and assuming a false continuity over time of resources and contexts, with some constructs regarded as vague, tautological and oversimplistic (Porter, 1994, Williamson, 1999). For example, when considering trust in outsourcing relationships, TCE is biased towards opportunism rather than collaboration (Uzzi, 1997), is embedded in the transactions (Langfield-Smith and Smith, 2003) as a mechanism for controlling opportunism by such coercive strategies as 'hostage-taking' (Barney and Hansen, 1994). In a similar way Agency Theory context strips and oversimplifies relations, and ignores structural features which imply the theory retains little utility in explaining real world outsourcing phenomena (Shapiro, 2005, Uzzi, 1997). Researchers have attempted to address some of these issues by combining one or more reference theories to increase the depth of explanatory power, however even when this is done the research remains firmly wedded to a high level view with limited discussion of underlying contingent practice and social factors (Dyer, 1997, Dyer and Singh, 1998). Resource Dependency Theory for example takes resource exchange beyond the firm boundary but focuses on exchanges in general and do not demonstrate the nature of the exchange itself (Ulrich and Barney, 1984). As a consequence it can be argued that many reference theories operate at a high level, context strip, or have imprecise applications of theoretical constructs (Molloy et al.,

2011).

Shown in **Table 2-2** is a selective summary of 12 of the main reference theories and perspectives used in explaining the phenomena of outsourcing along with a representative sample of core authors derived from the literature (Alsudairi and Dwivedi, 2010, Dibbern et al., 2004, Lacity et al., 2010). They form two broad groups, firstly, those underpinned by a rational normative economic perspective, and secondly, those theories eschewing a wholly normative standpoint and introducing more social and structural elements to the analysis. What is common to these theories is the shortage of detailed empirical research into the processual aspects of implementation especially into the real-world complex exchanges that are characteristic of inter-firm contractually bound implementations.

### 2.2.7 Summary

Research into outsourcing has shown mixed results with some researchers arguing that balance sheets of the advantages and disadvantages of outsourcing, or the development of prescriptions, do not allow any kind of conclusion to be drawn in a specific situation (Clark et al., 1995). Where outsource outcomes are reported most consist of predictions or are desires to reduce cost (Lacity et al., 2010), are derived from expectations, and are not based on any grounded empirical work (Rouse, 2007). Alsudairi and Dwivedi (2010) in reviewing the outsourcing literature showed the dearth of research into environmental/contextual issues, and as Busi and Mclvor (2008) pointed out there are key gaps in understanding along with the need for more action research, processual and longitudinal studies. Furthermore, the literature is dominated by a rational perspective and a number of authors have argued that rational theories alone cannot provide an adequate explanation for power and conflict within the outsourcing process (Mantel et al., 2006, Mclvor, 2009). In addition, the importance of organisational politics in the outsourcing process is often ignored in the mainstream literature despite outsourcing being 'regarded as a political act' impacting 'the power structures within the organisational hierarchy' (Bidwell, 2012, Marshall et al., 2015: 548, Peled, 2001).

Lacity et al. (2010) supported the view that it is time to consider an indigenous theory of outsourcing based on how outsourcing is actually implemented and enacted.

There is little research on how objectives are achieved, in particular those processes and practices which underpin successful outcomes, and a consistently high level unitary perspective is pursued that avoids the real practices of work (Van de Ven, 2007). Finally, despite the vast body of knowledge that has been developed over the last 20 to 25 years very limited attention has been spent on social, political or contextual factors in outsourcing and how this may impact success (Bidwell, 2012, Lacity et al., 2010, Lacity et al., 2011b, Peled, 2001).

Table 2-2 - Selected outsourcing reference theories

	Core concept	Explanatory goal	Constructs	Critiques	Use in outsourcing	Selected authors
Dynamic Capabilities	Agency Theory	Resource Dependency (RDT)	Resource Based View (RBV)	Transaction Cost Economics (TCE)	Strategic management	
How organisations resources are developed and managed. One to one correspondence between dynamics capabilities and competitive advantage suggested.	Goal incongruence between agent and principal under conditions of information asymmetry.	Power arises within organisations over control of resources. Inter-organisational exchanges are mediated by power.	Competitive advantage arises from 'idiosyncratic' heterogeneous internal assets, 'isolation factors' and 'causal ambiguity'.	Costs of operation determined by two main costs transaction and direct costs. Types of governance structure between hierarchy and market is determined by relative transaction costs.	Activities of an organisation are directed towards achievement of long term goals and fit to its environment.	Ansoff (1965) (Ansoff and Brandenburg, 1969) Porter (1980), (Porter, 1985) Mintzberg and Waters (1985)
Emphasises how resources can change, renew and evolve rather than focusing on resource choice as in the RBV.	To explain the degree to which the Agent achieves the goals of the Principal when they have differing goals and the Principal cannot easily confirm the Agents performance.	Control and acquisition of resources – organisations maximising power by discretionary 'control over availability' (Dawson, 1996)	Competitive advantage arises from 'idiosyncratic' heterogeneous internal assets, 'isolation factors' and 'causal ambiguity'.	Explains firm boundary as determined by where transaction costs are minimised.	Competitive advantage framed by industry structure and inter-firm rivalry. Firms achieve superior performance by an ability to exploit their competitive environment.	
Resource adaption to the competitive environment. Resources, capabilities, absorptive capacity and agility.	Risk sharing measurement of value. Moral hazard and efficient contracting. Information asymmetry. Individual group level of analysis.	Resources and power relations between actors. Acquiring a resource reduces dependency on it controlling availability increases own power.	Resources and capabilities and unit of analysis the organisation. Relational view extends RBV to dyads as unit of analysis.	A transaction cost is the cost associated with making an exchange. Key concepts: Asset specificity, transaction costs, risk opportunism. Efficient contract structures.	Activities and routines form the basis of competitive advantage and 'organisations succeed because of what they do' Nelson and Winter (1982)	
Lack of agreement on what is a dynamic capability and what are the 'effects and consequences'. Differing definitions and uses driven by starting perspective. Lack of process studies.	Nature of exchange and embedded routines not considered. Context stripped, static, ahistorical and an 'organisational theory without organisations' Kiser (1999)	While describing how power can underpin relations is limited in explaining the sources of the power.	RBV is tautological and 'self-verifying'. Ignores external factors such as industry structuring and is a static perspective, not accounting for resources development over time.	Largely ignores collaboration limited view of trust to reduce governance cost. Bias towards preventative contracts and broadly static view of transactions over time.	Assumption that organisations within industry groups were essentially homogeneous or any heterogeneity giving advantage would be 'smoothed over'.	
Developing capabilities to manage both selection and leveraging of internal resources, selecting and adaptively managing the vendor partner relation.	General problem of assessment of fair value with incomplete monitoring and information asymmetry. Oriented towards preventative tight contracting for well-defined services	Dependencies between supplier and buyer arising from possession of scarce critical resources and impacts on negotiation and switching costs.	Protecting and preserving internal assets or by exploiting them by acquiring complementary resources from the market.	Explanation of choice based on where TC's are minimised which activities to hold in-house and outsource. High switching costs from extant structure preserve inefficient governance	Alliances and collaborations enable access to complementary assets such as markets or technologies.	
Teece et al. (1997) Eisenhardt and Martin (2000) Barney (1991) Zhang et al. (2013)	Jensen and Meckling (1976) Eisenhardt (1989a) Shapiro (2005) Kiser (1999)	Salancik and Pfeffer (1977) Ulrich and Barney (1984) Cheon et al. (1995) Strange (2011)	Edith Penrose (1959) in Rugman and Verbeke (2002) Wernerfelt (1984) Barney (2001) Conner (1991) Dobrzykowski et al. (2010)	Coase (1937) Williamson (1985a) McIvor (2009) Spekle (2001) Nicholson et al. (2006)		
Core concept	Explanatory goal	Constructs	Critiques	Use in outsourcing	Selected authors	

Table 2-1 - Overview selected reference theories (continued)

	Core concept	Explanatory goal	Constructs	Critiques	Use in outsourcing	Selected Authors
	<b>Relational View</b>	<b>Social Exchange Theory (SET)</b>	<b>Power and Politics</b>	<b>Innovation Theory</b>	<b>Knowledge Based View</b>	<b>Institutional Theory</b>
	Idiosyncratic linkages between firm source of competitive advantage. Extra profits are obtained from the exchange that could not be obtained solely.	Actors exchange resources within a social exchange. Interpersonal relations under conditions of resource scarcity. Exchanges create unspecified obligations.	Organisations as sites of power and conflict – systemic conflict fact of organisational life. Organisations as competing coalitions of interest groups.	The adoption and diffusion of technology.	Sustained competitive advantage derives from embedded knowledge structures.	Institutions are structures that have achieved a high degree of stability. Institutions are re-constituted by actors in the course of enactment.
	Argues that the linkages between organisations are the source of competitive advantage.	Explains movement of resources in imperfect markets via a social exchange. Exchange depends on reward cost balance and reciprocation.	Explaining organisations as locations of non-rational power and political action that influences the behaviour of actors.	How a product or service gains momentum.	Embedded nature of knowledge as strategic resource – extends RBV by treating knowledge as specific resource.	How institutions are structured, recreated and change. Neo-institutional forms reject rational actor models in favour of cultural, power and social explanations.
	Networks and dyads units of analysis to explain superior performance. Complementary resources and relational specific investments.	Exchange relations and activities between economic actors. Power arising from resource dependency. Level of analysis firm, group and individual.	Power in exchanges – power in resources, processes and meanings. Units of analysis, individual, groups, organisation.	Diffusion and substitution cycles of innovation. Innovation and cycles of adoption.	Heterogeneous knowledge structures level of analysis is at the firm/organisation.	Processes that establish recreate norms and routines. Three pillars normative, coercive and regulation. Level of analysis group, firm and industry.
	Static not accounting for partner leaving. Knowledge transfer and partner learning leading to premature closure. Spill over risk.	Difficult to test and evaluate nature of costs and rewards. Circular definitions, over rationalistic and instrumental perspective on exchanges. Ill structured core concepts.	Sometimes claimed as aberrant behaviour. Unitary management perspectives eschew power and resistance.	Lack of explanation cessation of product or service.	Argued not a theory of the firm and difficult to integrate social and economic perspectives within theory.	Variance approach in a comparative sense. Static and discussion on whether institutions are dependent or independent variables.
	Choice of future partners, transition and operating phase of outsourcing. Complementary service creation and management.	Inter-organisational exchanges and relationships quality, and relational investments. After the contract signing continuous series of exchanges mediated by social contacts.	Outsourcing creates a reciprocal dependence between the parties. 'Intertwined in the outsourcing process' at all stages (Allen et al., 2002).	Diffusion and adoption of outsourcing – mimetic factors.	Domain level knowledge integration between client and vendor especially the unique characteristics of the client business as expressed in requirements.	In legitimacy of outsourcing. Change in routines and practices.
	Dyer and Singh (1998) Fink (2010) Mesquita et al. (2008)	Homans (1958) Blau (1964) Emerson (1976) Cook and Whitmeyer (1992) Parker and Russell (2004) Bignoux (2006)	Quinn (1980) Ferris et al. (1994) Morgan (1997) Nadler (1993) Hardy (1984a), Hardy (1984b), Hardy (1996b)	Hu et al. (1997) (Rogers, 2003)	Barney (1991) Grant (1991) Tiwana and Keil (2007) Becerra et al. (2008) Blumenberg et al. (2009) Inkpen (1998)	DiMaggio and Powell (1983) Lawrence (2008) (Scott, 1987, 2004a, b) Weiss et al. (2013) Peters (2000)
	<b>Core concept</b>	<b>Explanatory goal</b>	<b>Constructs</b>	<b>Critiques</b>	<b>Use in outsourcing</b>	<b>Selected Authors</b>

## 2.3 The processes of outsourcing

This part of the review will be on the endogenous internal practices and external contextual factors that potentially influence outsource success and will lead up to the development of a conceptual model to guide the research questions shown later in **section 2.4.3.**

### 2.3.1 Theoretical lens Institutional theory

The original focus of institutional theory was in explaining those factors leading to similarities in how organisations structured and displayed similar behaviours and forms, and how a ‘limited range of socially approved templates’ emerged that exhibited high resilience and inertia (Greenwood and Suddaby, 2006: 27). New-institutionalisation changes the focus of enquiry to consider the fact that, although institutions do exhibit resilience and isomorphism, change does in fact occur, and this change is not only resulting from rational adaptations to environmental changes and drives for efficiency (Barley and Tolbert, 1997). This new orientation adopted the perspective that not only is structure influenced by technology and resource dependencies, it is shaped by institutional forces, and organisation practices are responses to the embeddedness of organisations within their social and political environment (Powell, 2007).

*‘The new institutionalisation of organisational theory and sociology comprises a rejection of rational actor models an interest in institutions as independent variables [and] a turn towards cognitive and cultural explanation.’ (Powell and DiMaggio, 1991:8)*

This leads to a paradox in Greenwood and Suddaby (2006) terms in how researchers can explain stability and longevity while at the same time accounting for the adaptability of organisations to changing contexts within a single theory. As it was put by DiMaggio and Powell (1983), why despite increasing change do organisations look so similar?

The definition of Institutions can be argued as ‘systems of established and embedded social rules that structure social interactions’ (Hodgson, 2006: 18). They are structures that exhibit activities that are ‘stable, repetitive and enduring’ (Oliver, 1992:

563). However, even in early institutionalisation the inherent duality of institutions was recognised in that they arise from and constrain action (Barley and Tolbert, 1997). Based on this notion Barley and Tolbert (1997) proposed that institutions represent an historical accumulation of rules, processes and scripts that are enacted and structured by actions. By this means they proposed to translate Giddens' (1984) static perspective of structuration to a dynamic model then link this to the maintenance and change of an institution. From this perspective institutionalisation can be seen as a process of structuration grounded on the micro processual level, and is a theory of practical action where institutions are reproduced and changed by the 'everyday actions of individuals' (Powell and Colyvas, 2008: 277).

Barley and Tolbert (1997) proposed a duality for structuration and institutionalisation, and proposed that institutions and actions are inextricably linked. They suggested that institutional theory can be thought of as the grammar of change and structuration as the process theory describing institutionalisation. It is this perspective that is adopted within this research and following Barley and Tolbert structuration and institutionalisation will be used interchangeably. Institutionalisation takes the argument forward by not only accounting for the technical rationality in change, but also accounts for the 'social, political and normative' contexts of the practices of work (Orlikowski and Barley, 2001). The purpose of using institutional theory during this research will be that it offers a window on the routines, goals and scripts that underpin the actual behaviours that occur during the processes of work, and from this explains how the outcome of outsourcing is achieved (Powell and Dimaggio, 1991).

### **2.3.2 Institutional change**

Institutional change can be conceptualised as occurring at the macro and micro level of analysis. Macro change occurs at the field level where external context is considered the main driver for change operating via the coercive, mimetic and normative isomorphic mechanisms (DiMaggio and Powell, 1983, Pishdad and Haider, 2013) . Those mechanisms that tend at the field level to restrain structure within legitimate and accepted bounds and represent a macro level adaptation to context (Weiss et al., 2013). Coercive pressure, for example, can be exerted by stronger organisations on

more dependent ones by forcing them to conform to rules or specific contractual requirements. Normative pressure by ensuring prevailing standards of conduct and professionalization are applied, and mimetic aspects, by a cultural emphasis on taken for granted assumptions, such as the client to buyer hierarchy.

Organisational institutionalisation, it is argued, has three defining principles; it arises from small group and organisational processes can increase agility and performance, and the 'institutional order is negotiated and emergent, never systematically controlled' (Zucker, 1987: 447). Two processes are important during the implementation of a major organisational change, firstly, deinstitutionalisation or the erosion of existing institutional norms that occurs in parallel with the implementation of a change, such as outsourcing ( Pishdad et al., 2012, Seal, 2003), and secondly, institutionalisation whereby systems and procedures become the accepted norm and are integrated into organisational life (Currie, 2009b). In order for effective change to occur old processes and systems must be replaced by the new and the current taken for granted ways of working and behaviours broken down and replaced.

At the micro-level change is effected by institutionalisation and deinstitutionalisation where old routines and processes are 'forgotten or discarded' Zhu et al. (2006) (cited in Pishdad and Haider, 2013). It is during this process of change that socially constructed structures becomes stabilised. This process of institutionalisation and deinstitutionalisation is carried out by organisational members who can exercise power to 'create, transform, maintain and disrupt institutions' and thus can act as agents of change and as responding actors (Lawrence, 2008: 173, Powell and Colyvas, 2008). Deinstitutionalisation can therefore be seen as the weakening and disappearance of a set of existing processes and routines, and their replacement with others created during the processes of work.

Institutionalisation of change within an organisational context thus takes place in parallel to the process of deinstitutionalisation. From this viewpoint bureaucratic, stable organisations can inhibit change during system development (Currie, 2009a), creating project inertia from the tension that arises between the acceptance of the changes from the new system and a replication logic seeking to maintain the status quo (D'Adderio, 2014). Furthermore, actors resist institutional control and agency by acts of mobilisation and the exercise of influence that imposes limits on the agency

and control of institutions. These resulting acts of resistance range from passive acquiescence, compromise, defying or ignoring the change to manipulation and subversion that adapts the relationship between the actors and the institution (Lawrence, 2008). In addition, innovations, such as IT change, may be adopted or fade away, depending on isomorphic conditions such as when strongly established practices are very difficult to change, especially when they are owned by strong institutional actors (Currie, 2012).

Technology processes change during implementation and institutionalisation and ‘the role and scope of information systems evolves continuously such that the organisations evolve with their evolution’ (Pishdad et al., 2012: 3). Technology from this standpoint acts as a glue that binds together groups and processes, and supports the creation and reproduction of institutionalised behaviour. Mignerat and Rivard (2009) pointed out the generic inter-organisational perspective within the literature and the limited attention that was being paid to the intra-organisation subsystems and groups, and highlighted out the dearth of research into the micro-level processual aspects of institutional change. (Greenwood et al., 2013) extends this argument, proposing more studies and micro-level analysis based on actor action within institutions are needed.

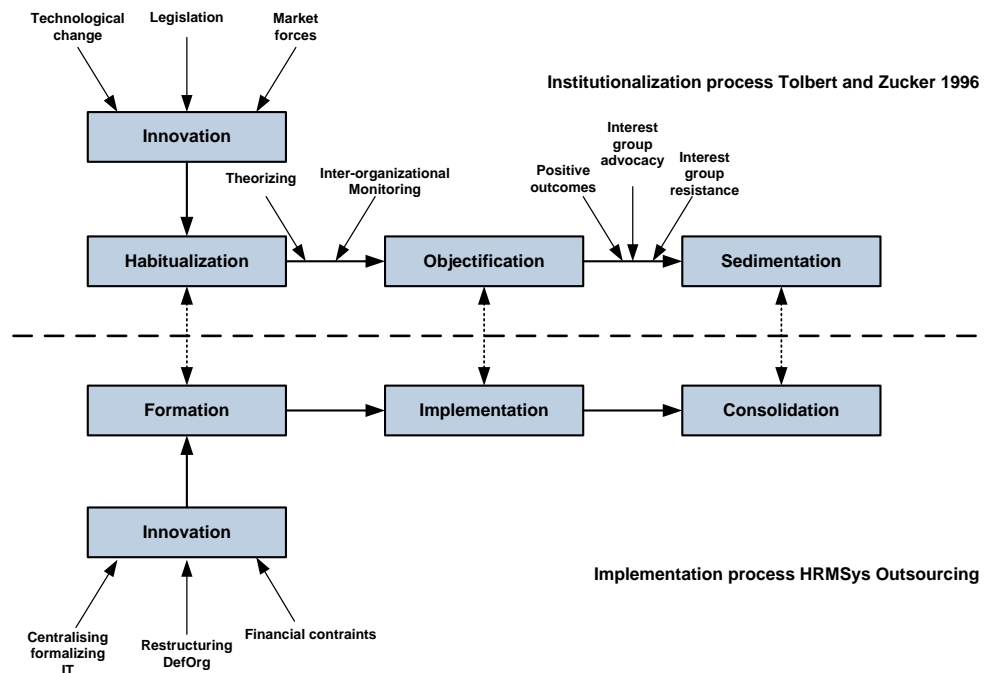
### 2.3.3 Change in IT sourcing

Outsourcing is a major management change that involves the sourcing of a part of the structure of an organisation from the market, and involves two or more organisations collaborating and working together to create a service formerly carried out internally by the outsourcing organisation. The change does not simply involve signing a contract. Organisational routines, governance and social relations must be adapted fundamentally during the implementation and as a result outsourcing is a radical institutional change with wide organisational impacts on resources, people, organisational boundaries and constituents (Greenwood and Hinings, 1996).

To frame the case study analysis and the research questions, the process model of institutionalization proposed by Tolbert and Zucker (1996: 182) was adapted to suit the specific terminology within the consolidated outsourcing lifecycle model and the specific case parameters. This is shown as **Figure 2-4**. Habitualization is a patterned

response to a change in the external context, triggered by events that forces a change in institutional structure and initiates the process of deinstitutionalisation (Oliver, 1992). The patterns occurring during formation represent the series of actions and decisions taken in response to the change demands triggered, by the strong centralisation and formalisation of the IT support processes and systems at DefOrg. The outcome of this is the specific response demanded by the environment triggers. Objectification is the structural change brought about by the formalisation of the implementation, within the contractual and organisational constraints of the outsourcing project. Implementation is both the physical processes of implementation, creation of software and services, and the structuring of the project and service within the infrastructural and organisational umbrella of DefOrg. Consolidation represents the sedimentation of the new processes, structure, support and practices and their becoming the new norms of practice and the accepted ways of working.

Outsourcing as a practice is predicated on the notion of standardisation. Suppliers are contracted to provide a service and benefits, such as cost reduction, derived from the ability to implement standard processes grounded in their core competences across a wide client base. For example, IT suppliers pool their expertise in development across their client organisations and seek to deliver cost-effective solutions exploiting standardised services. This idea is extended when considering Enterprise Resource Planning (ERP) or other commercial off the shelf (COTS) software packages delivering standardised service across a diverse client base. However, implementation often occurs across organisations with different business models and within organisations that consist of diverse and often competing coalitions of interest groups, who may have varying goals and objectives that do not follow an orderly linear path (Lyytinen et al., 2009). What is implied by this is that these diverse groups can expropriate and orient major change programmes, such as outsourcing, to support their particular group needs leading to sub-optimal implementations and failure to meet overarching organisational objectives (Berente and Yoo, 2012).

**Figure 2-4 - Implementation HRMSys mapped to Tolbert and Zucker (1996)**

Source: Author based on an idea by Kaiser et al. (2011)

In addition, outsourcing is a business change that is implemented into an existing organisation and ‘most institutions are not created de novo but contain vestiges from the past’ William Riker (1998) (cited by Campbell, 2004: 15). Therefore the buying organisation has an existing structure, processes and ways of working as does the supplier. Accordingly during the implementation these processes, and people working within the outsourcing engagement, have to fundamentally adapt to a completely new structure and the impact of antecedents and history can be fundamental to outsourcing success.

Finally, within the outsourcing context complex inter-firm institutions can span several logics, between the supplier and buyer viewpoint or between functional departments within the same organisation. They can as a result have distinct organisational logics that although they may respond to each other can nevertheless remain largely distinct and pursue their own agendas. This is a situation can engender conflict as the outsourcing implementation proceeds (Berente and Yoo, 2012).

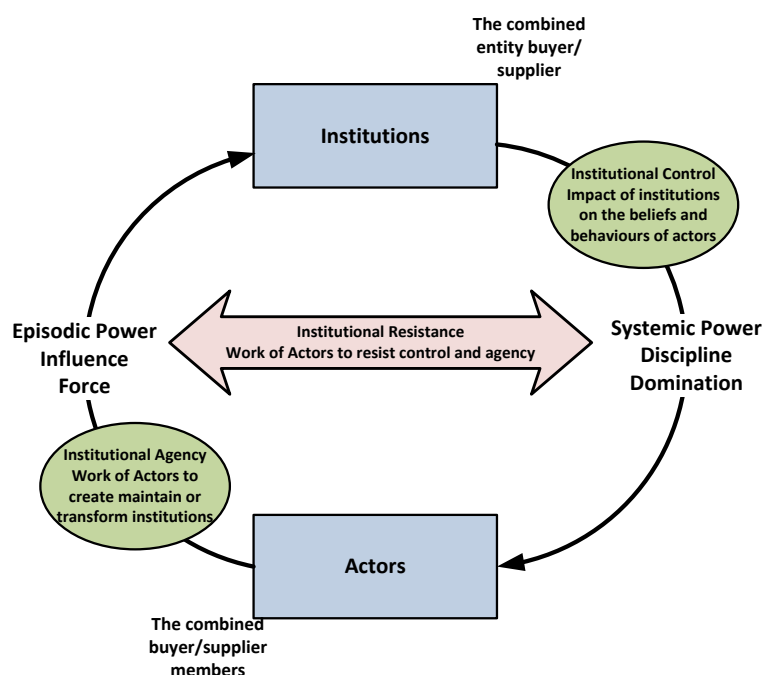
### 2.3.4 Power and conflict in organisations

Institutional control regulates the activities within desired principles and goals

(Janowitz, 1975) whereas institutional agency is the work of actors to modify and change institutional practices (DiMaggio, 1988). Within this context, resistance reduces or modifies the impact of both institutional agency and control. These three forms of power (control, agency and resistance) in the view of Lawrence (2008) form the basis of institutional politics, and impact on all elements of the project during all phases: the scope of the delivery, the use of standards, delivery approaches, project control and techniques, the design of functional and non-functional requirements and the delivery and quality control of service. From this discussion the interplay between these three aspects of power (**Figure 2-5**) within the organisational field can be described as the 'institutional politics of a situation' (Lawrence, 2008).

The Power, Political, and Population Ecology perspectives underpin the systemic conflict model in organisations (Wilson, 1997). Within this perspective organisations are seen as coalitions of interest groups competing and conflicting in micro-political processes, in ways that may be at odds with the overarching organisational logic (Morgan, 1997, Nadler, 1993, Quinn, 1980). From such a perspective political action is a 'fact of organisational life' (Ferris and Judge, 1991), and organisations can be regarded as intrinsically political entities where managers have to manage 'politically diverse and conflicting interests' (Morgan, 1997: 154).

**Figure 2-5 - Institutional Politics and Power**



Source: Lawrence (2008)

Power occurs in the control of deviancy in organisations (Quinn, 1980), to co-op interest groups in order to reduce conflict (Pfeffer, 1993), to manage culture and meaning (Hardy, 1996b), as an embedded part of the supplier to buyer relationship along the supply chain (Chicksand, 2015, Cox, 2001, Cox, 2004, Touboul et al., 2014) and to modify hidden assumptions and values (Schein, 1992).

Unitary management perspectives largely ignore the political nature of organisations (Allen et al., 2002), eschew political action and pose issues such as resistance as aberrant behaviour (Willcocks and Currie, 1997) or even illegitimate (Mintzberg, 1983). Cooperation is assumed and political action treated as symbolic of breakdown and there is an overall neglect of 'the social context and micro-political factors' (Hong and Fiona, 2009: 312). The processes of exchange and the bargaining that routinely take place over time and reify the status of power at a given moment in time receive little attention (Dawson, 1996).

Power is used to influence behaviour, to 'change the course of events', to manage resistance and to 'get people to act differently' (Emerson, 1962, Pfeffer, 1992). Politics is the process, actions and the behaviours by which power is practically expressed and operationalised (Horton, 2003, Senior and Swailes, 2010). Hardy (1996a) defined power along three dimensions: overt decision making power engendered from clearly observable conflict, the power of non-decision making and the suppression of alternative options, and the dimension of symbolic power. Where symbolic power is controlling the use of language and interpretive framework and is socially structured.

Hardy extended these three dimensions with a fourth based on Lukes' (1974) conceptualisation of the power of the system, and by this means emphasized the broader nature of power, moving away from a simple high-level unitary concept. Hardy argued that power was embedded in social action, in the systems of control, and within the cultural context of organisations. Based on the above discussion an overview of the power dimensions that will be used later as a sensitising framework during the coding in NVivo10 is shown as Figure 2-6.

In summary 'Power, politics and culture ... are intertwined in the outsourcing process' (Allen et al., 2002: 170), and power occurs during all aspects of outsourcing's

planning and execution. From the basic decision to outsource (Lacity and Hirschheim, 1993, Marshall et al., 2015), managing conflict between executives and IT managers in the decision-making process (Chakrabarty and Whitten, 2011), to controlling supply compliance (Heiskanen et al., 2008), controlling supplier power (Stenbacka and Tombak, 2012), reducing the effects of conflict and resistance (Pfeffer, 1981, Pfeffer, 1993) and to managing client dependency (Caniëls and Roeleveld, 2009). Political behaviours are seen as withholding or distorting information (Pettigrew, 1973), Controlling the agenda (Eisenhardt and Zbaracki, 1992), timing decisions to circumvent opposition and using inducements as a bargaining tool (Hickson et al., 1986, Papadakis et al., 1998).

**Figure 2-6 - Analysis framework power**

Power Analysis Framework			
Dimension of Power		Phase	How Control is Effected
Episodic ↑ 1st ↓ 2nd	<b>Concrete action</b> Observable conflict focus on key decisions gives rise to disagreement and the application of power	Instrumental power securing outcome in face of conflict power influences behaviours – individual in application and distributed across organisations (Pfeffer 1981)	Resources used to oppose resistance or to influence behaviour of other actors. Rewards and sanctions, applying the power of veto or acceptance. Authority, governance and control of action and how they can be accessed. Control over critical resources
	<b>Non Decision</b> Observable conflict focus on confinement of the process of decisions to aspects aligned to dominant actor – non decision making such as delaying		Processes that manage by enforcing rules and regulations and exploiting structured biases in organisations. Rules, regulations budget standards and system functions that crystalize routines. The mode and structure of governance and contracts, minutes, access and when decisions are made (or not).
Systemic ↑ 3rd ↓ 4th	<b>Symbolic Power</b> Prevention of conflict arising in the first place - exclusion or denial of legitimacy of topic. Accepted rules of exchange and hierarchy. Self-discipline by symbols of sanction.	Deep structural power securing outcome by controlling interpretive framework and how action is done and understood power influences beliefs – group/social in application (Clegg (1975)	Controlling and giving meaning to legitimate and allowed actions. Controlling access to resources. Accepted rules of engagement between actors emphasising distributed forms of power. Legitimacy and normalised roles and ways of working (buyer to vendor) articulation core values and assumptions.
	<b>Systemic Power</b> Societal and institutional power culturally embedded routinized in organisations frame and control how action is realised		Unconscious acceptance of values and structure of the institution and society. Legitimacy and the protection of strong interests in society and organisations. Organisational scripts and patterns that reify relations between actors and reinforce (legitimise) particular ways of thinking, talking and problem solving.

### 2.3.5 Power, conflict and resources

Resource Dependency Theory (RDT) posits that power within organisations arises

through the control and management of activities and scarce critical resources (Salancik and Pfeffer, 1977). Power is not a matter of possession and ownership but of discretionary control over availability (Dawson, 1996). RDT is related to early Social Exchange Theory where Organisations are seen as consisting of coalitions of competing interests, whose goals may (or may not) coincide with the over-arching organisational intent. Where interaction can be seen as a series of 'action and reaction' exchanges as control is maintained and re-created (Pfeffer and Salancik, 1978). RDT emphasises organisational dependence on the external environment, and organisations 'cope with uncertainty... by inter-organisational coordination' (ibid: 156) seeking to minimise their dependence whilst acting to increase their control over the resources held by others. This interconnectedness, concentration of resources in the environment, and relative abundance define resource availability and the power of the organisation to exploit them (Dawson, 1996). Inter-firm collaborations, it is argued, act to sustain the flow of resources and manage inter-organisational dependence (Pfeffer and Salancik, 1978). Furthermore, by effective management of these resources organisations can maintain their distinctive competitive features (Kern and Kreijger, 2001).

Outsourcing creates a reciprocal dependency between supplier and buyer and a power relationship comes into existence between them (Emerson, 1962). Furthermore, Kern and Kreijger (2001) showed a high risk of dependency, and the development of a strategic vulnerability, from the control of core systems by the vendor especially when customisations to the system are allowed. From a structural perspective resource dependency engenders a mutual power relation between buyer and supplier and along the supply chain (Chicksand, 2015, Cox et al., 2004). This level of dependency will be moderated by the complexity of outsourcing, the criticality of the resource, availability of alternatives and switching cost (Caniëls and Roeleveld, 2009, Cheon et al., 1995). Outsourcing is controlled by a commercial contract between the parties and the economic exchange at a high level is a contracted service delivery (Emerson, 1987). Power is operationalised in this context by the client disciplining the vendor to comply with requirements or by the supplier in controlling resources (Heiskanen et al., 2008). Clients and vendors have different objectives - vendors need to manage profit margin over the long and short term whilst the client is motivated by delivery performance and cost. These different perspectives are fundamentally

conflictual and the parties use power to achieve their own aims (Heiskanen et al., 2008).

Power exists in patterns of exchange as a property of a social relation and ‘resides implicitly in the others dependency’ (Dawson, 2003, Emerson, 1962: 32) Emerson (1962) pp.32. Power is structured in the rules, processes and control mechanisms within an outsourcing relation. It acts to frame exchanges and constrain action within expected norms and it is this broader conceptualisation that will be used in this thesis. Outsourcing from this perspective can be seen as organisations seeking to acquire scarce resources outside their organisational boundaries, whilst controlling for the dependency created in the action of exchange. Inter-firm structures from this perspective are characterised as consisting of a network of ‘power relations based on exchanges of resources’ (Ulrich and Barney, 1984 : 472).

### **2.3.6 Collaboration in an outsourcing project**

Collaboration, trust and firm specific knowledge are acquired over time and are institutionalised by a mechanism of socialisation enabled by social exchange (Klass, 2003). During this process formal roles such as: the project manager, account manager or IT specialist become steadily replaced by personal relationships, formal control by psychological contracts, and relationships become socially embedded (Ring and van de Ven, 1994). Alliances and collaborations are adaptive environments where trust, control and relationships develop over time within a context of formal control (Inkpen and Currall, 2004, Klepper, 1995).

Collaboration begins at the earliest stages of the engagement and is focused on defining initial conditions such as the clarification of the task, governance, meeting structure, details of performance expectations, behaviour, and how these are to be monitored and controlled (Doz, 1996). It is at this stage that the parallel process of formal and informal bargaining begins and sense-making starts (Ring and van de Ven, 1994). Initial conditions, it is argued, ‘imprint’ the processes and trajectory of the collaboration and set the ‘conditions fostering or blocking inter-partner learning’, leading to either virtuous circles of interactive learning or inertia (Doz, 1996: 56). It is argued that during these initial stages the focus should be away from contracts, service level agreements and overtly formal governance structures and towards setting up the

relation correctly to support successful interaction (Lyles, 1988).

Related to the setting of initial operating conditions is the question of initial control choice; whether market based, bureaucratic or trust based (Phua et al., 2011). This question addresses the risk orientation adopted by the client and determines the mode of control structure, for example bureaucratic, market or hybrid/clan-based (Ouchi, 1980). Bureaucratic oriented clients favour specific norms and rules, market control being more arm's length based on cost/price, and trust-based favouring social and outcome controls (Langfield-Smith and Smith, 2003). This latter point is supported by van der Meer-Kooistra and Vosselman (2000) who showed collaborations based on trust tended to have more social process controls and less detailed contracting.

Related to this, balancing knowledge sharing and knowledge loss, due to leakage and differential partner learning, is also a significant issue in outsourcing especially between supplier partners (Li et al., 2012). Mesquita et al. (2008) even questioned the training of suppliers and argued that suppliers can potentially deploy the knowledge they gain either formally or informally to other clients. Although tacit knowledge is more embedded in the relationship, nevertheless this type of process could lead to 'spillover risk' (Inkpen and Currall, 2004). Partner knowledge being acquired, appropriated and lost (Park et al., 2011).

Madhok (1995), when considering the number of failures and the high level of dissatisfaction in inter-firm relations, proposed that there was a neglect of the underlying social processes and proposed a trust based logic shifting the focus from ownership of resources to relational dynamics. Supporting this view Das and Teng (1997) showed that there was a lack of attention to the contingent social factors, such as the environment for trust and knowledge transfer, and this lack of attention could lead to failure in collaborative ventures.

### **2.3.7 Sharing knowledge between partners**

Initial perceptions of trust and how trust continues to evolve is argued to be critical to knowledge sharing and benefit realisation (Lee and Choi, 2011). Inter-personal trust is more important to building relational success than interfirm relations and is an essential component in the facilitation of knowledge sharing (Cong and Chau, 2007). The development of trust and commitment can overcome differences in culture and

goals whereas weak actor bonds, disputes over contract interpretation, and frequent organisational changes ruin trust, threaten success and block partner learning (Johnsen et al., 2006).

High levels of knowledge sharing including explicit knowledge (SLA's, training and standards) are predictors of outsource success (Blumenberg et al., 2009). Lee (2001), for example, demonstrated that the degree of attainment of knowledge sharing was related to eventual outsource success. Successful knowledge transfer is a key process; tacit knowledge transfer is needed as declarative knowledge alone is insufficient to manage the service effectively. Ray et al. (2005b) developed this further showing that tacit socially complex resources lie at the heart of explaining differential performance in organisations, and the effects of IT are best understood at the level of the micro-processes and exchanges of knowledge.

From a vendor perspective, within multiple supplier contracts, partner knowledge integration is critical for understanding the service requirements - and clarifying partner needs are linked to the success or failure of the partnership (Ahuja et al., 2011, Kale and Singh, 2007). In an information technology context, Ray et al. (2005a) built on this to assert that IT knowledge structures were tacit, socially complex and context specific, and understanding this fact fostered success, whereas a focus on the configuration of IT outsourcing alone did not.

Frequent interaction, intentional actions to increase trust and interpersonal contact can be used to manage the difficult and diffuse nature of tacit knowledge (Collins and Hitt, 2006). This last point is supported by Al-Salti and Hackney (2011) who pointed out, that although manuals and reports are often physically available, for the transfer of codified knowledge, tacit processes are too complex and investments in face-to-face time are needed. Bustinza et al. (2010) supported the view that the tacitness and ambiguity of knowledge can mean that knowledge transfer is difficult and benefits are hard to realise in practice. As Eisenhardt and Santos (2002: 160) state: 'More focus should go into knowledge integration processes, in which the development of meaning and the creation of new knowledge occurs through individual interactions and is affected by social contexts'. Furthermore, this knowledge is acquired in a trust based context as a result of interactions and exchanges between actors performing the normal everyday work.

### 2.3.8 Delivering to expectations

A key issue in the initial stages of an outsource is the setting of the expectations, since the predictability of expectations forms a crucial aspect of the judgement of output performance (Luhmann, 2000). From a service management perspective, a 'decision maker compares the experience of the service against expectations' (Rouse, 2007: 131). This comparison is against two main quality dimensions, firstly, the technical or outcome of the service process, and secondly, the functional or interaction part covering the delivery of the service (Grönroos, 2011). To these two dimensions is added the relationship quality which is related to the learning of how to collaborate and work together (Ring and Ven, 1992).

Inkpen and Currall (2004) proposed that inter-firm trust is essential for knowledge transfer. Relationships characterised as high trust enable partners to refrain from using tight controls – low trust implying a fear of opportunism. Process based controls inhibit supplier performance and do not allow the supplier to show competence in managing the service delivery (Tiwana and Keil, 2007). Furthermore, process controls are not needed when managing highly competent suppliers and may actually be counterproductive. This latter view is consistent with research that showed bureaucratic hierarchical organisations, with a preventative contracting approach, can suppress knowledge sharing and the development of a culture that supports innovation (Al-Salti and Hackney, 2011).

Uzzi (1997) argued that exchange processes that result in outcomes meeting client expectations lead to the building of trust. Trust emerges as a result of exchanges occurring over time when the obligations of the exchange are successfully met. Trust can act as a 'behavioural lubricant' in inter-organisational relationships and permits partners to be more tolerant of occasional failures (Madhok, 1995). This allows moderate deviations from the expected norms based on the belief that the performance will be corrected without the need for formal sanctions. Trust from this perspective implies positive expectations and confidence that those expectations will be met (Luhmann, 2000). Sako and Helper (1998) defined trust along three dimensions: contractual (meet contract obligations), competence (ability to perform) and goodwill (collaboration for mutual benefit), that map closely to the service management concepts of technical and functional service delivery which underpin the

expectations within an outsource contract (Grönroos, 2012). The key point is how trust arises and develops over time, its various social components and the way exchanges and communication between organisations maintains it (Madhok, 1995, Ring and Ven, 1992). For example, as trust increases, high levels of communication are not required and social control dominates (Ybarra and Turk, 2009).

## 2.4 Summary and conceptual framework

### 2.4.1 Research gap

The literature review showed that there is an evident shortfall in process-oriented studies in outsourcing and an endogenous approach, moving away from ‘borrowed theories’, and focused on the actual mechanisms of change is required (**section 2.2.7**). It was shown in the review that although Institutional Theory is a useful addition as a theoretical lens there has been virtually no empirical research into the micro practices of work or on how the process of deinstitutionalisation practically impacts resources, boundaries and organisations (Greenwood and Hinings, 1996). Furthermore, the review showed that the influence of history on institutional structure mainly ignored the micro-practices of work, takes an organisational level of analysis (Oliver, 1992), with a very limited body of knowledge from a process standpoint (Mignerat and Rivard, 2009). How innovation is shaped or work practices altered by antecedent factors is also under researched. The notion adopted here is that organisations contain vestiges of the past and history that can profoundly impact success and constrain the future (Campbell, 2004, Kingston and Caballero, 2009). The literature also suggested a strong influence for power on outsourcing; in the way formal control is applied, by the use of systemic power, and in how conflict can arise in an interfirm context. However, where and how conflict arises in the practices of work remains untouched. The proposition is that outsourcing represents a network of power and high power contexts transform and are transformed by everyday practices and politics (Bourdieu, 1991) . Finally collaboration and partner learning is suggested as an essential ingredient for success that could be blocked by poor practices. Blocked partner learning can lead to outsourcing failure and the exchanges that give rise to this can be the object of study from a process perspective (Levina, 2005, Ray et al., 2005a).

### 2.4.2 Research contribution

This research uses an institutional, power and structuration lens to closely examine the actual practices of work of purposive actors solving everyday problems as they work together to deliver the outsourced solution (March, 1981). Central to the research are the collaborative practices of work delivering the outcomes and how this is influenced by, history, context and power. The research aims to contribute to the outsourcing literature by explaining apparent poor success as partially a consequence of poor implementation practices, power and real world constraints on action.

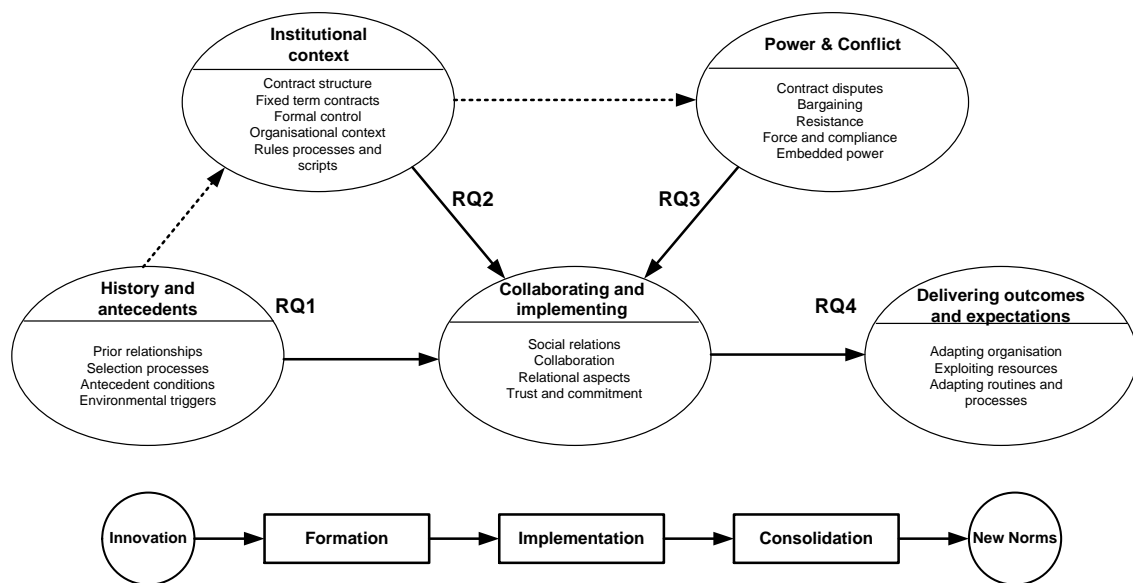
### 2.4.3 Conceptual framework

The conceptual framework shown in **Figure 2-7** displays the interrelations between literature concepts discussed in **section 2.3**. Arrows on this diagram show conjectured relations between the derived constructs. The analysis for this framework is shown as **Appendix F**. The diagram shows how the influence of antecedents might influence current events, especially how collaboration is built and maintained or how legacy work practices are renewed or replaced in the new project and is shown as '*history and antecedents*' in **Figure 2-7**. The outsourcing project took place within a Defence Sector organisation in Europe (DefOrg) that was a highly-centralised bureaucracy. The management of the procurement and governance of any project, including this outsourcing activity, was formalised and strictly controlled to manage buyer risk. Based on the literature, heavily formalised and controlling contracts are assumed to have a negative impact on innovation and collaboration and this construct is shown as '*institutional context*' in **Figure 2-7**. Strong governance, enforcing compliance to contractual norms, or disciplining suppliers for service failure, demonstrates explicit application of power, and increases power and conflict within the outsourcing relationship. Furthermore, contingencies; such as delivery failures, arguments over scope, or major changes in the project scope, may increase internal conflict as a new project balance is negotiated. The construct of power and conjectured influence on implementation is shown as '*power and conflict*' in **Figure 2-7**.

The outsourcing organisation for the HRM application and service consisted of three main supplier parties and three departments within the buying organisation. These organisations worked together collaboratively to create the service. From the

literature, high levels of collaboration and knowledge sharing for complex services can lead to improved outsource outcomes; conversely, poor collaboration can lead to failure. This construct is shown as ‘*collaborating and implementing*’ in **Figure 2-7**. The process of implementing delivers outcomes related to the contractual goals. The failure to deliver goals can result from capability or contingent factors and can be constrained by real world factors this construct is represented in **Figure 2-7** by ‘*delivering outcomes and expectations*’.

**Figure 2-7 - Conceptual framework HRMSys project**



Source: Author

The conceptual framework suggested four main research questions. Firstly, it is rare for an outsourcing to be implemented de novo therefore what could be the influence of prior history on how the development initiates and proceeds (**RQ1**)? Secondly, how does strong governance and control influence the progress of the work (**RQ2**) – this is especially apposite in this project as it occurred in a defence context. Thirdly, in what ways is outsourcing a political process, why does it occur, and how does this influence success (**RQ3**)? Finally, how do organisations work effectively and do processes change as collaboration is deepened? This leads to a consideration of whether the above factors together act as inhibitors or accelerators and as a consequence outsourcing as a change is always partially limited by time and contextual constraints (**RQ4**).

#### 2.4.4 Research questions and rationale

In this section the research questions derived from the framework will be mapped the interview questions used in the initial stages of the project to gain initial understanding, **Appendix D**, and the final post IOC interview series **Appendix E**, that explored and validated emergent themes. During the activity a formal protocol was not used and observations, reports and informal interviews, on specific issues, were used as the data acquisition method. The scope of the interview guides is shown on **Figure 3-5**. The interview questions were derived by thematising the research questions into meaningful sentences that allowed the respondent to describe the events that occurred from their perspective (Kvale, 1996, Kvale, 2007).

**RQ1: In what ways do antecedents and a prior history impact and constrain the implementation processes of outsourcing?**

The first question focuses on the prior conditions and context up until the actual start-up of HRMSys. It considers the broader impact of context and explores the prior history and the initial relationship between the parties, especially PersonSoft and HRMDept and how this history influenced the current activity.

- Can you describe how the outsource vendor (PersonSoft) was selected?
- How formal or informal were the discussions?
- The contract and agreement is it too tight or too lax?
- How would you say the relationship developed between the parties during the contracting phase?
- How were communications between the organisations at that time?

There were also three group interviews held jointly with senior staff from HRMDept and PersonSoft after the Initial Operating Capability (IOC) phase with the topic the prior history between the organisations and the selection process for the outsourced activity.

**RQ2: In what ways does strong control and governance impact the development practices and how they evolve during the implementation?**

The second question goes more deeply into the practices of work, and how the actors within the project went about solving problems and creating the service products.

- What actions or behaviours in your view helped progress?
- What actions or behaviours in your view hindered progress?
- What do you consider the negative events that possibly led to a poor outcome during the implementation of HRMSys?

**RQ3: How do power and conflict arise during the implementation of outsourcing?**

**RQ3.1: How do power and conflict impact work practices?**

The conflict and power dimensions were explored by asking the respondents to reflect on critical issues and problems that occurred during the implementation.

- What aspects of working together were effective in delivering outcomes?
- What aspects of working together were blocking progress?
- How effective were your partners in delivering the outcomes?

**RQ4: In what ways is the nature of situated change emergent and constrained in an outsourcing project?**

Question four completes the research by reviewing the situated nature of change, taking a practice based perspective to understand how the change process unfolded during this implementation.

- Thinking back on the implementation of HRMSys from your perspective:
- What do you consider the positive or beneficial outcomes/events that occurred as a result of the implementation?
- What do you consider the negative events that possibly led to a poor outcome during the implementation of HRMSys?
- Were there any critical points where things went well or went badly?

Following the interviews the responses were thematically analysed in NVivo10 to structure the answers to the research questions. In addition email narratives, reports, observations were also analysed against this research framework and this process is described in detail in the research design **Chapter 3**.

## Chapter 3 – Research design and context

The research design is a plan describing how the research is to be organised, data collected and analysed, such that the research questions are answered (Easterby-Smith et al., 1991). The key choices in the design are determined by the philosophical position adopted by the researcher which in turn is driven by the nature of the enquiry and research questions. To meet the requirements of disciplined enquiry the design is organised around four aspects: the paradigm, the strategy of enquiry, the methods of data acquisition and the data analysis. All of which must be internally consistent and coherent with the overall philosophy adopted (Hiles, 1999).

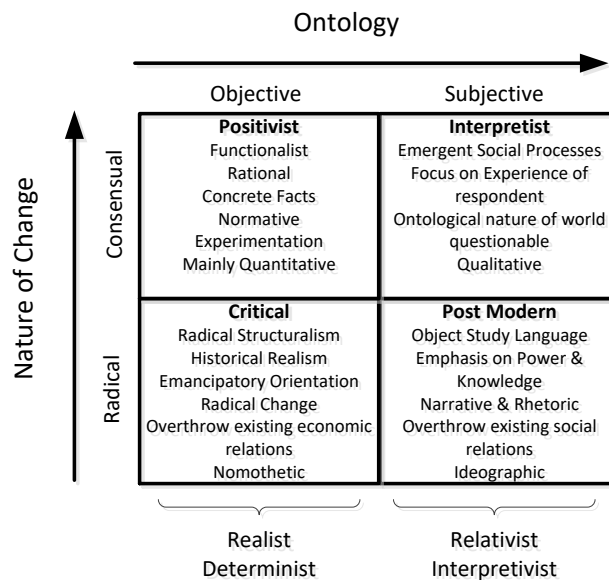
### 3.1 Paradigms

A paradigm provides a guide for research and is a framework of rules, techniques and methods, forming a coherent set of practices (Kuhn, 1962). As Guba and Lincoln (1994) pointed out however, paradigms are just a set of basic beliefs in that they must be accepted on faith, as there is 'no way to establish their ultimate truth' (ibid: 107). The point Guba and Lincoln are making is that what is acceptable scientific knowledge is not theory neutral, but a negotiated social construction. Research practice from such a standpoint allows incorporation of methods across paradigms dependent on the research need. Nevertheless, it is important that the underpinning assumptions of incorporated techniques are understood, fully grounded and made visible within the research (Shepherd and Challenger, 2013).

The paradigm from Guba and Lincoln's (1994) perspective defines the bounds of legitimate enquiry and can be determined from consideration of the ontological, epistemological and methodological perspective of the enquirer. The ontological question considers assumptions about the nature of reality. This focuses on whether there is an objective reality 'out there' to be observed or whether reality exists only in the mind of the observer. Epistemological questions consider the nature of legitimate and warranted scientific knowledge and thus what can be regarded as truth. Finally, methodological aspects examine how knowledge should be acquired consistent with the ontological and epistemological research standpoint adopted. Burrell and Morgan (1979) extended this reasoning by inclusion of the values and assumptions of human

nature. That is, whether action is determined by the context or whether there is an underlying core of human agency and self-interest. Based on this extended set of assumptions (Burrell and Morgan) outlined four major paradigms constructed from the subjective/objective and regulatory/radical change dimensions that are shown in **Figure 3-1** below.

**Figure 3-1 – Research Paradigms**



Source: based on Burrell and Morgan (1979: 22)

Criticising in particular the 'naïve realism' implicit in positivism, Guba and Lincoln (1994) set down refinements to the positivist paradigm, post positivism, where an imperfect critical realism is accepted, replicated findings indicate probable truth and falsification replaces verification as the validation mechanism. This perspective, although broadly accepting of experimentation, places an emphasis on replication and triangulation as well as an orientation towards organisational enquiry within natural settings (see Guba and Lincoln, 1994 table 6.1: 109). This post-positivist paradigm exists between the functional and interpretivist spectrum and can be characterised as realist/interpretivist, retaining aspects of a functional perspective while including emergent social processes and the experiences of social actors into the object of enquiry. Five potential paradigms are therefore available, and below is an assessment of which of these is most likely to answer the research questions.

### 3.2 Choice of paradigm

A 'purely' positivist perspective has been criticised for its: over-rational, experimental orientation, with an over-reliance on hypothetico/deductive reasoning (Miles and Huberman, 1984). Furthermore, there is a strong orientation towards quantitative approaches as the only valid approach to knowledge creation, a position roundly debunked by Cook and Reichardt (1979). Flyvberg (2004) went further, criticising attempts to construct theories to explain organisational behaviour, suggesting 'predictive theories and universals cannot be found in the study of human affairs' (Flyvberg, 2004: 423). Finally, context is important as it makes theory more robust, and simplifications by de-contextualisation in positivist research in a search for parsimony risk misrepresentation (Rousseau and Fried, 2001). Accordingly, based on the need to include context, the inability to experimentally manipulate the organisations and a need to research historical and contemporary behaviours, a positivist paradigm is not suitable for this research.

Critical perspectives are also realist but start from the standpoint of historical realism, where organisations are considered as social creations, within a broader historical economic context that engenders asymmetric patterns of power in society (Alvesson and Deetz, 2000). A critical research paradigm regards organisations as political sites, where conflict over the control of resources between organisational actors gives rise to distortions in the distribution of goods, services and income. A radical structuralist position is adopted and the objective of critical research is emancipatory, with the broad aim the overthrow of current economic structures. This research focusses on the exchanges occurring at the site of the outsourcing service, and the micro-political processes that arise, and will not consider the overarching societal aspects as would a critical perspective. In addition, although critical research does address power and conflict, the object is to address social influences and emancipation, and is regarded as less practical than more normative approaches. Consequently, as the research perspective adopted here is normative, and questions of societal injustices will not be addressed, a critical view, although insightful, will not form the paradigm underpinning this research.

Interpretivist viewpoints take a subjective ontology and understand organisational phenomena by exploring the subjective meanings of organisational

actors within their natural setting (Saunders et al., 2003). Rarely considering power and politics, the focus of the research is in identifying emergent social processes, and is broadly constructionist and emic in its approach. This research into outsourcing follows a broadly etic approach where across-setting comparability is sought. Furthermore, the exchanges and decisions that are observed are assumed to be real behaviours and not subjective constructions in the minds of the actors. Accordingly, the research does not follow a purely Interpretist perspective.

Finally, a Post-Modern perspective takes a fully relativist position and has a subjective ontology and epistemology. In this case there is no acceptance of an objective reality to observe and all phenomena are constructions of societal influences. The main focus of research is language, and the search for knowledge and truth in structures of discourse, and the principal thrust is the overthrow of existing societal relations. It is also ideographic, with a focus on individual cases or events, with research techniques such as deconstruction the core of the analysis. The usefulness of this approach in an organisational setting has been questioned, and its fragmented approach, its view that power resides in structures of language, and overall obscure writing makes its utility in this research doubtful (see Alvesson and Skoldberg, 2000).

This research addresses the outsourcing relations between clients and vendors in the natural context of the location where the service is delivered. The object of study is the outsourcing case and the interactions that take place, along with the relations that develop, between actors performing their everyday roles. The perspective of the researcher is that there exists 'evolving relationships to be discovered in the social world' (Miles and Huberman, 1984 : 23), and aims to explain what is going on in the research subject. Real behaviours and exchanges will be examined and triangulated across historical records. A framework will be built up explaining the outsource service process, the patterns of power and cooperation, and the antecedents to decisions based on a qualitative case analysis. From this perspective the research follows a realist/interpretivist paradigm and is post positive in the terms of Guba and Lincoln (1994).

### 3.3 Context of research

Context is the setting within which the behaviour under study occurs, and is the 'stimuli and phenomena ... in the environment external to the individual' (Johns, 2001: 22). It consists of two main factors: the substantive and the methodological context. Substantive context consists of the task attributes, the information processes and social norms that constrain action, whilst methodological context defines how the research is conducted and key research decisions made (Johns, 2001)

Serious consideration of context clarifies the predictions of theory and adds explanatory value to the study. To add value the details of context must be appropriate, as too much contextual information can give a false appearance of uniqueness to the case (Johns, 2001). Context begins with a strategic selection of cases that frames the domain of study and represents the range of variability within the phenomena (Flyvberg, 2004, Johns, 2001, Rousseau and Fried, 2001). However a range selection restricts and moderates the phenomena under study and this restriction should be accounted for within the research results. For example, where cases are chosen from restricted organisational settings, such as the public sector, the specific nature of the context at that point in time and how it might frame the results should be acknowledged and explained.

Methodological context is accounted for by making the processes of research visible. Clarifying how the research was conducted, and demonstrating consistency in the use of levels and units of analysis, enables an aspect of validity and auditing of the research process (Johns, 2001). For example, social exchange theory applies to the level of the individual (Blau, 1964). The research location for this thesis is where the service is performed, and the object of study is the exchange between suppliers and customers in an outsourcing relation. From this perspective, the evolution of the service is tracked over time and used to explain the outcome by considering the impact of critical exchanges. By holding such a focus on a consistent level of analysis two logical traps can be avoided: firstly, 'treating organisations as if they have the same properties as individuals and, secondly, treating organisational outcomes as merely the aggregate product of individual behaviours' (Swanson (1971) as cited in Whetten et al., 2009: 543).

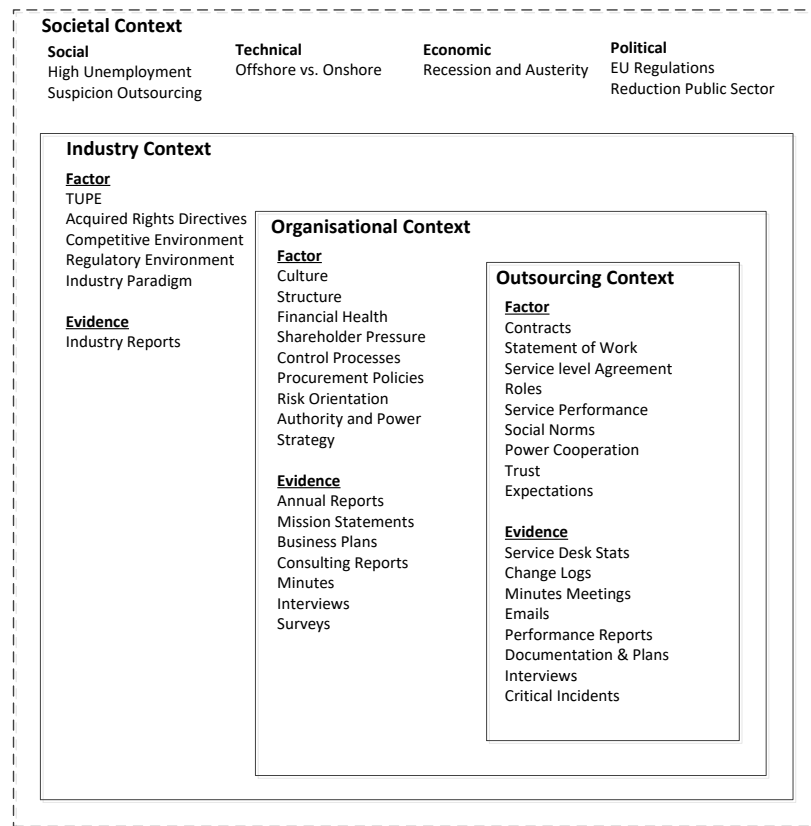
Substantive context operates at two levels. Firstly, at a level external to the

phenomena, where organisational factors, the external environment, job role and time are important. Organisations can be seen as social actors in their own right that exhibit high levels of control over their individual members and employees and maintain the social context (King et al., 2010). Context also has a constraining influence on the phenomena under study especially in strong situations, in for example bureaucratic organisations such as defence, where the influence of control on behaviour is much higher compared to looser organisations (Rousseau and Fried, 2001). This control is felt in terms of the management control structures, risk appetite, processes and procedures within which individuals carry out their day-to-day work. For example, in a situation such as outsourcing in the public sector, this can be seen in contracts, procedures, and clauses containing detailed statements of work that are quite restrictive in terms of how the service is to be performed. The second aspect of substantive context occurs at the level of the phenomena and concerns the events and 'bundles of practice' (Rousseau and Fried, 2001). In this case the context is felt in the accepted norms and rules required for the performance of the service as they are framed by the institutional context and the ways in which the service is defined in service level agreements, control meetings, and day-to-day formal interaction between the actors.

The focus of this research is on the practice of work and how the institutional context influences both initial conditions and evolution of work practice over time, with a view to understanding how outsourcing outcomes are judged and decisions rationalised. But outsourcing as a practice also operates within a broader societal environment. This outsourcing research is occurring in a period when the UK is emerging from a period of recession and where public sector outsourcing is being driven by a need to reduce cost in a period of austerity. Furthermore, although outsourcing is regarded as a maturing management practice, it is nevertheless subject to problems of empirical justification, and signs of increasing resistance and dissatisfaction are emerging. This broader context is seen as social, technological, economic and political influences, including regulatory pressure, to reduce cost by outsourcing. **Figure 3-2** below summarises the contextual factors framing the work practices of an outsourcing service within an organisational context. It shows the main contextual streams and the sources of data informing the research and also acts as an

organising framework for the data acquisition and analysis.

**Figure 3-2 - Research context**



Source: Author

## 3.4 Enquiry strategy

### 3.4.1 Case study research

Much empirical research within organisations is high level, consisting of surveys and occasional interviews with (mainly) senior level management, and cannot access the true problem. This is because problems are bound to the organisational context and this takes time to learn (Gummerson, 2000). Poor and superficial access, in Gummerson's view, is characteristic of much management research and risks delivering 'advanced statistical analysis of poor empirical data' and to overcome this a case study approach is required (Gummerson, 2000: 80). A case study from this perspective is an analysis of an organisation within its natural setting and enables a 'fundamental understanding of the structure of processes and driving forces' within organisations (ibid: 89). The understanding of the context in this way enables research to move away from simplistic rule-based logic towards effective knowledge acquisition and understanding of the phenomena (Flyvberg, 2004). Finally, where control over the

environment is impossible or the object of study is 'not distinguishable from its context' or the boundary unclear then a case study is most appropriate (Yin, 1994, Yin, 2003: 4).

Furthermore, within an organisational area such as information technology outsourcing, it is appropriate to use a case when the phenomena to be observed is dynamic, immature, or when there is no agreed settled theory (Darke et al., 1998). The case itself can be seen as a system that exhibits patterns of behaviour that reveal its inner workings (Darke et al, 1998). Embedding constructs, such as power, within the organisational context, enable theory elaboration and allows differences and similarities across units and levels of analysis to emerge, whilst also enabling theory development to be enhanced (Vaughan, 2000).

Research questions drive the choice of case, its location, and the focus of the research (Darke et al., 1998, Vaughan, 2000) while the type of questions give clues as to the form of study to be followed. 'What' questions denote exploratory studies and draw mainly on historical documentary evidence, whereas 'how/why' questions imply explanatory research (Yin, 1994). In explanatory research; cases, experiments or historical analysis form the core of the approach where access to phenomena by direct observation is required. Stake (2008) proposed three broad types of case study enquiry:

- Intrinsic studies where study proceeds as a result of a basic intrinsic interest in the phenomena by the researcher,
- Instrumental studies that aim to expose theory and explain and,
- Collective case studies, where instrumental approaches are extended across multiple cases.

Explanatory research can be developed on the basis of a single case study with additional cases used as a form of replication protocol (Darke et al., 1998). In this situation, a strategic selection of cases that represent the research domain is required, in order to ensure variability of phenomena across cases and to maximise the actors involved. This avoids the risk of a diffuse view of the behaviour being studied that could result if a random case selection procedure was followed (Flyvberg, 2004). The research reported in this thesis is a supply chain case study with six organisations contributing to the outcome (Gummerson, 1991, Yin, 1994) using participant

observation (Waddington, 2004), interviews and documentary analysis of contracts and substantial volumes of on-going e-mail traffic (May, 2005, Rowlinson, 2004), focusing on the negotiation, initialization, implementation and service activities between six collaborative partners in the defence industry as they implemented a large-scale human resource application (HRMSys) for a defence client (DefOrg).

The research questions considered two main aspects within the outsourcing service setting. Firstly, how the context and antecedent conditions influenced the initial stages of the activity, and secondly how relationships and service practices developed over time. On this basis the research adopted a realist perspective in that the objects of study were real project events and processes occurring outside of the internal lives of the participants (Kvale, 2007). A key aspect of case study approaches is the multiple methods of data collection. To support the research two main types of data were acquired: firstly, documentary evidence, meeting minutes, consulting reports and other project documentation; secondly, qualitative semi-structured interviews and email narratives that were made accessible. The participant observation aimed to create a contemporaneous account as a framework to situate and validate respondent responses that occurred months or years after the event (Barley and Tolbert, 1997). Respondent data enabled a historical reconstruction of the key events as the implementation narrative unfolded, whilst documentation enabled the accounts of the respondents to be situated within their context as well as providing triangulation of events (May, 2005).

### **3.4.2 Interviews**

The interview approach was semi-structured in the sense that themes to be raised during the interview were scripted but the researcher was allowed to follow emergent themes that arose during the process (King, 2004a). In a practical sense this meant the researcher could step outside of the script to explore new avenues which would not be the case in a fully structured interview. Realist interviews tend to be more structured than is the case for phenomenological or social constructionist semi-structured approaches, the focus of which is the internal lives of participants. More structure in the realist interview allows comparisons to be made across respondents and the different forms of data which supports triangulation. For example, documentary

evidence was used to verify the recall of respondents and to compare and contrast themes across the case organisations.

An interview guide covering the main elements of the interview sessions is shown later as **Appendix D**. It is a list of questions and themes that were addressed during the interview session and included probes for further information or clarification. Making explicit the topics to be discussed in the guide also allowed for validation and confirmation of research quality by, for example, analysing interview question coverage, or how effectively questions and probes were being asked (Guest et al., 2012). Although the general question structure of the guide was similar across the case organisations, different respondents were involved at different times (and performed different roles) and required some change in emphasis to the questions. Furthermore, following the IOC phase closure a series of interviews were conducted focused on critical events and behaviours this interview protocol is shown later in **Appendix E**. Within the outsource buyer these included the senior and junior management levels, and on the vendor side, the client account teams, contract and project managers.

It is a research proposition that the evolution of the service and the relationships set the direction towards a specific endpoint and thus in part explain the outcome. The general data collection strategy was to conduct interviews, within the case organisations, when the outsourcing project had reached a defined terminal state. In the case of this research the main interviews, including follow-up, were conducted post the initial operating capability delivery. In this way the research validated historic events that led to a certain decision point in time, for example, continuing with the contract, cancelling, continuing but dissatisfied, or even switching suppliers (Freytag et al., 2012). This meant that the issue of continuity was broadly settled before the final research interviews started. This reduced the risk of the researcher being treated as a consultant, being asked for opinions or recommendations, and helped the researcher as a result maintain a level of objectivity (Doz, 1996, Stake, 1994).

In planning the primary data collection, the interviews, three basic tasks needed to be considered: clarification of the purpose of the study, understanding and gaining pre-knowledge, and defining which techniques of interviewing would be

needed to acquire the right knowledge (Kvale, 2007). The first of these tasks involved thematising the research questions, which meant clarifying the meaning and the theme of the study. This enabled focus to be placed on those behaviours that needed to be identified (during interviews) to answer the research questions - all other matters fell into the background (Kvale, 2007).

The overall interview structure followed the research questions from the initial phases and start-up of the service to the notional endpoint. This is when the performance was evaluated and the decision taken whether or not to continue. The research purpose was to search out historical events that occurred during an outsourcing contract at specific phases of the implementation that materially impacted the outsourcing outcome. Responses were then critically examined to assess respondents' self-presentation and underpinning rationale for any decisions taken. By this means the respondents' recall was anchored in time and information elicited in a structured order. The types of questions and linguistic structure used fell into matter of fact descriptive questions, and questions with a more evaluative and cognitive thrust, that fitted in with the general realist perspective of this research (Kvale, 2007). Questions that were descriptive asked the respondent to describe a situation for example, 'Can you tell me what happened?', or, 'Can you describe...?' Evaluative questions on the other hand probed the respondents' judgement and took the form, 'What do you think was happening or going on then?', or, 'How did you judge that...?'

During the interview process, unless spontaneously arising, respondents were probed for specific critical incidents occurring during the phases of the project. A critical incident account is always historic, and subject to a risk of loss in detail, but as it is critical it is always possible to achieve good recall as the event itself creates a 'hook' on which the respondent can attach his or her narrative (Chell, 2004). A critical incident, for the research purpose, was a behaviour undertaken during the specific phase of an outsourcing project that shaped the outcome and revealed 'prototypical behaviour' (Chell, 2004). Probing for a critical incident was performed by using questions structures such as; 'Can you describe the positive and negative events that moved the project forward or inhibited progress?', or, 'What happened when...?' In this research context respondents were asked to describe an incident and go on to describe its outcome. For example, if a key worker was removed (or joined) the

outsourcing vendor and moved to another project this could be the critical incident, whilst the judgement of outcome was that it had a profound effect on team cohesion. By such a critical incident approach, within the broader interview strategy, the wider context and setting of the behaviour was understood, and from there the researcher was able to assess the managerial and process impact.

The general principle of data collection was to document the case as the data was collected and interview logistics followed the general guidelines as suggested by King (2004a). Interview notes were taken during the interview, in addition to recording, in order to note specific issues and any contextual influences in the interview setting. Where permission was given, all interviews were tape recorded in situ or by audio streaming capture for online interviews. All interviews were transcribed verbatim into Word 2010 ready for import into NVivo10. Furthermore, interview notes taken during the interview, and all meeting reports, were completed immediately (or as soon as possible) after the interview was concluded to aid recall. Case summaries, interview notes and contextual information were also confirmed with the respondent and any issues requiring clarification were followed up, either by a short interview, or via email. Transcribed interviews, meeting reports, documentary evidence and other source material were prepared and imported into NVivo10 where the bulk of the analysis and coding was carried out. To clarify whether research objectives were being covered, the interview protocol (**Appendix E**) was validated by conducting three pilot interviews with the Services Director and Two Consultants from PersonSoft, enabling the later interviews to be refocused and the interview guide adjusted. The coding and the loading to NVivo10 of transcripts started as soon as the main research material was available. This also provided further confirmation that data needs were being met, and enabled minor adjustments to the interview protocol to take place.

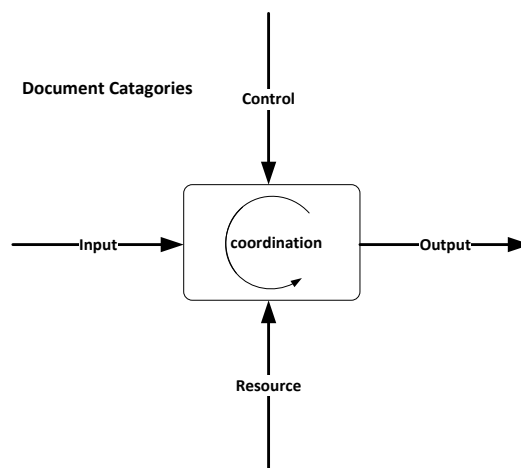
### 3.5 Documentary evidence

Documents were used to triangulate respondents' accounts, for example the dates of significant events or contextual influences on the outsourcing relation. Differences in recall of particular events in respondent interviews were compared to the documentary evidence and yielded themes and issues from disputes that had been lost

from awareness. For example, the agreement of a particular action can be forgotten over time, or the specific context within which the decision was made can be glossed over. In a similar vein, it was important to clarify the intent of the document, what the purpose of the author was, and how its meaning was interpreted and enacted by the recipients (May, 2001). It was also important to consider what was included, or omitted, from the text as inconsistencies in the level of detail across documents and accounts can yield insight into causal factors of internal disputes. Documents also provided understanding of the structure and organisational context within which the outsourcing took place. For example, company memos, procedural guidelines and strategy documents acted to define the context of the outsourcing service delivery.

In addition to standard documentation, emails formed a core set of data collected for the research, as full email traffic from a shared email account, capturing the entire interaction for the full implementation phase, was made available to the researcher when the initial operating capability (IOC) phase was concluded. Following data cleansing to remove duplicates this data was constructed into narrative ‘threads’ and coded against case nodes. Data cleansing was carried out by extracting the email traffic from Outlook, using a small visual basic macro, then importing into Excel 2010 then executing a utility program to remove duplications and erroneous data (such as email signatures). **Figure 3-3** shows the categorisation schema used within the research for the documentation element of the data and summarises the volumes of data collated for this thesis.

**Figure 3-3 - Document categorisation in NVivo10**



The analysis of documentation proceeded in the same way as a textual analysis of the interviews and thematically analysed. The major difference between interviews and documents is that documentation will be historic and represent the context of a situation at a point in time. Furthermore, documents such as emails, internal memos, minutes or reports are not composed with an external audience in mind, or to record history, but are created to record organisational decisions resulting from 'the outcome of political processes' (Rowlinson, 2004). Further, the analysis of documentary evidence is selective, first by the selective availability and actual selection of what documents to include, and second by the selectivity of the account within the text itself (May, 2005). However, this limitation was minimal in this research as a full three years of all documentation, including all applicable standards, was made available to the researcher. Never-the-less these aspects and risks when using documentary evidence, especially the selection of what documentary evidence to include, are acknowledged and explained in the analysis.

### **3.6 The analysis approach**

#### **3.6.1 Applied thematic analysis**

The analysis was based on 'thematic analysis (as) a method for identifying, analysing, and reporting patterns (or themes) within data' (Braun and Clarke, 2006: 6). Themes are understood as patterns of meaning within text that inform and relate to the research questions. From a realist perspective, the themes represent real experiences, events and actions compared to a more constructionist view where these patterns represent socially constructed understandings of the events. Qualitative data, free flowing text from semi-structured interviews, are analysed and themes identified within the text by finding segments that express an implicit or explicit idea related to a research question (Guest et al., 2012). This text is then coded. This code represents a theme, an abstracted research concept, and it is the structure of the codes, particularly the relationship between them, that is subsequently analysed.

Themes are identified and text coded: either top-down deductively, where the analysis proceeds guided by the researcher's theoretical interest, or inductively, bottom-up, where no pre-existing framework or theory is assumed (Braun and Clarke, 2006). In this latter case, themes reflect the internal world of the respondent, and may

not relate directly to a specific research question and coding proceeds without trying to fit in with an existing theoretical context. Grounded theory (Glaser and Strauss, 1967) has no predetermined coding structure; the structure of the codes are inductively derived from the data by a process of constant comparison. Grounded Theory is oriented towards the development of theory and does not assume the questions or the analysis, are framed a priori by a theoretical position.

Applied Thematic Analysis, Guest et al. (2012), shares many similarities with grounded theory in that a rigorous framework for the analysis is followed, but oriented towards explaining, exploring, or validating existing theory, rather than theory development. The research orientation adopted is explanatory and realist and themes within the text are assumed to point to concrete events. Segments of text, that are surrogates for real patterns of exchange or power, are coded and the analysis of these themes used to understand and explain outcomes. Compared to a template analysis (King, 2004b) there is no prior insight into the structure of the themes. This has to come from analysis, but the approach is deductive, and in contrast to grounded theory verification and discovery can take place at the same time (Vaughan, 2000). Template analysis, for example, classifies data based on themes identified during literature analysis and a set of codes is developed a priori (King, 2004b). Although the codes can be added to during the analysis, the overall coding structure is predetermined which was not the case in this research.

Analysis involved three major steps: firstly data reduction, the simplification and the abstraction of ideas and transforming these into coherent themes; secondly, the display of data in tables or figures and, finally, drawing conclusions from the data, verification and critically evaluating (Darke et al., 1998). During the analysis phase links were also made from the themes/constructs that emerged which can help 'lift theory development' to a new level (Eisenhardt, 1989b).

### **3.7 Reliability and validity**

Reliability and validity of qualitative research address the question of 'trustworthiness' (Stiles, 1993). Trustworthiness in Stiles' view has two main aspects, firstly, reliability, whether or not the observations represent the phenomena consistently and, secondly, validity; how well the interpretation of the data can be trusted. To address these

concerns, procedural consistency, and the accuracy of data analysis techniques, has been made visible, by showing a clear trace from raw data via constructs to dimensions, such that reviewers can have confidence that the research is trustworthy. Content validity has been addressed separately for narrative descriptions, interpretations, and theme identification as well as theories and judgements (Stake, 2008). Methodological validity covering: data collection, data display, data reduction and the drawing of conclusions was assured by making visible verifiable procedures that enable full traceability, and in principle allows for replication by other researchers (Miles and Huberman, 1984). Results from qualitative research can only be uncertain, unless these processes, procedures, assumptions and operations are made clear and visible. Issues with how the data was selected, its reduction and analysis, and coding, cannot be evaluated unless an audit trail is in place (ibid.). Accordingly, all main data items, notes, records, and documentation were coded and kept together and a full track on all research material implemented.

Repeatability of observations is not possible in case study research and triangulation and replications are used, to clarify meaning, and to acknowledge different perspectives (Stake, 2008). Triangulation is the overriding type of validity and assesses multiple sources of data for coherence and convergence of the findings (Stiles, 1993: 608). Triangulation also helped to avoid bias and supported the maintenance of a clear evidence trail. Presenting results in lucid and unambiguous language was also important in ensuring a link can be seen from the observational data to the final analytical statement (Darke et al., 1998). Bias was also reduced by checking for representativeness, taking a sceptical position, searching for disconfirmation, or assuming the data is flawed and actively looking for other explanations (Stiles, 1993).

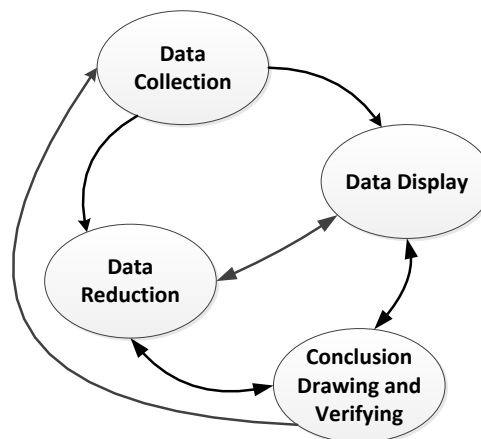
A particular risk to validity during analysis concerns the use of computer aided analysis techniques such as NVivo10 as the main tool that was used for the storage and analysis of data. The use of computer programs in qualitative analysis has long been a concern of researchers (Grbich, 2007). In Grbich's (2007) view, the procedural aspects of preparing and entering data into a computer system are fundamentally reductionist and promote procedural rather than interpretive thinking. The use of the coding structure, and a hierarchical creation of nodes (in NVivo10), potentially risks prematurely framing the data, risks losing context, and oversimplifies meanings within

the data. Furthermore, the process of abstraction of segments of text into themes can break the narrative thread and chain of reasoning. Finally, the use of a qualitative data-management system, that can easily handle vast quantities of data, encourages collection of large quantities of data in a false search for more accuracy.

Although these are valid criticisms of using any qualitative data management system, the main risk that is alluded to is loss of meaning within the narrative by reductionism. A qualitative, phenomenological approach examines the motivations and the meanings that respondents attach to real-world events. It is these meanings that are interrupted by an overly formal system. This research takes a realist perspective, and although not immune from these criticisms, it was interested not in the meaning of events but in constructing the significance of the events themselves. The risks inherent in the use of systems to analyse the data were minimised by triangulation across respondent interviews and documentary evidence. Triangulation was used to test the recall of respondents, and understand in what ways critical events led to particular outcomes, whilst the risk of interpreting meanings from actual people was minimised. However, respondent interviews, particularly when explaining decisions and judgements, could be subject to these risks. Accordingly, care was exercised to capture during analysis the full context of decisions by including adjacent text, particularly in a chain of respondent rationalisation, to ensure de-contextualisation was avoided.

### 3.8 Ensuring valid research

Validity and reliability was accounted for throughout the research process from: data collection, data reduction, data display and during conclusion drawing or verification see **Figure 3-4** (Miles and Huberman, 1984). Each of these four areas had verifiable processes and procedures to ensure full traceability of the research process. These processes and procedures are made explicitly visible in the results and analysis section.

**Figure 3-4 – Components of Data Analysis**

Source: Miles and Huberman (1984)

The key aspects of the approach to ensure valid research were:

- Data collection: including the rationale for case selection and the ways data were physically collected. For example, the recording and transcribing of interviews verbatim and how contextual information was recorded in meeting and visit reports, and how this was stored, retrieved and used.
- Data reduction: this includes the selection of data for analysis, the tools and techniques that were employed, and how data reduction took place - it was important to maintain a comprehensive codebook such that other researchers could clearly see and judge the quality of the encoding to nodes.
- Display: the display of results is also a form of data reduction and a clear traceable link can be seen between respondent data and how it is represented in matrices, charts or figures. The data display must also be fair and representative of the research findings and any exclusions identified.
- Conclusion drawing: conclusions that were drawn must be valid and robust, and be seen to plausibly come from the evidence presented.

### 3.9 Case organisations

The IT requirements were contracted to a major IT systems house (SI) which outsourced complex IT requirements to a relatively small specialist software house in the UK (PersonSoft), and the testing and validation of the software to a company (TestCo) in Romania (Table 3-1). An overview of the role, project role and

organisational affiliation of the main case respondents is shown as **Table 3-2**. No information on highest educational achievement or specific competence was acquired.

**Table 3-1 - Organisations in HRMSys project**

Case Organisation	Description	HRMSys Project Role
<b>SI</b>	A large system integration house based in Europe of around 80,000 employees operating in 34 countries world-wide.	Lead contractor responsible for managing the sub-contractors, quality, supplier project management and system integration.
<b>PersonSoft</b>	A specialist software house providing scheduling and advanced HRM software applications within the defence and health sectors based in the UK with around 250 employees (around 30 specifically on defence).	PersonSoft provide the software and all aspects of the documentation and installation procedures. They are the developers of the software.
<b>TestCo</b>	The residual part of a large multinational industrial conglomerate based in Europe of around 300,000 employees. They operate in Romania and are remains of the old IT division that was taken over by SI in mid-2011.	Testing of the software, training documentation and delivery of training. Responsible for system testing and physical delivery of tested software.
<b>DefOrg</b>	The strategic organisation managing defence matters within Europe. They are responsible in the end for the commissioning of IT projects within DefOrg.	No specific project role – no formal project board was evident during contract execution.
<b>Agency</b>	The contracting and procurement organisation of DefOrg based in Brussels.	Prime contracting part of the client - responsible for contract execution, project management, the acceptance of deliverables and payments.
<b>HRMDept</b>	The end-user department for the software and the organisation that manages establishment planning and personnel management within the operation. They are the main users of the delivered application.	The department using the software – the source of business requirements. Responsible for user acceptance testing and deployment into service.
<b>Agency IS</b>	The organisation within DefOrg responsible for ensuring integration and security for all delivered applications within the organisation.	Responsible for the acceptance of the software as being fit to operate on DefOrg's infrastructure. They cover particularly security and integration.

The case reported here was monitored for five years from contract bid and award in 2008 until September 2013 when the initial operating capability (IOC) delivery was accepted. Further data was collected for pre-2008 and post-2013 during the Final Operating Capability (FOC) negotiation and implementation and the scope of the research is shown in

**Figure 3-5.**

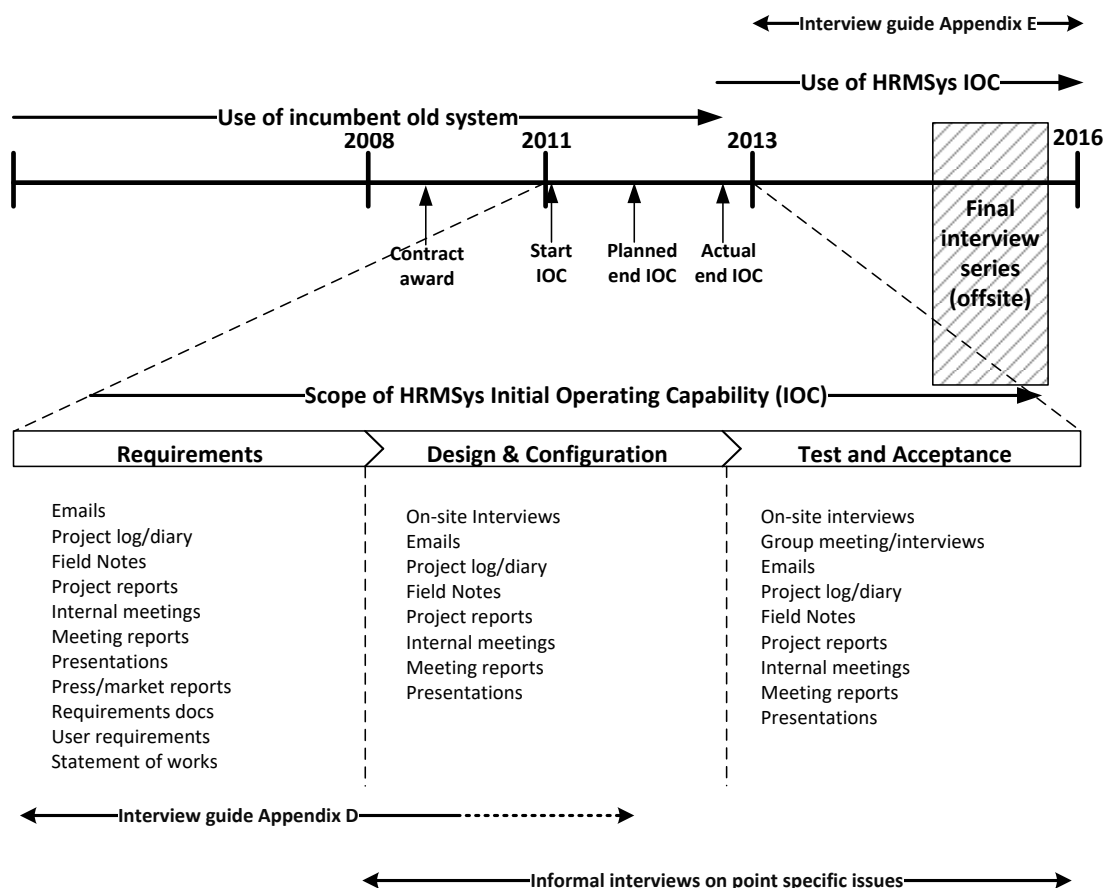
**Table 3-2 - Profile main case respondents**

Case Organisation	Case Respondent	Organisational role	HRMSys Project role	Age Range (years)	Approx. experience
<b>SI</b>	SI1 Service Director	Public sector services director	Senior supplier	51-55	+15 years
	SI2 Project Manager	Senior project manager	Project director suppliers	62-63	+25 years
	SI3 Project Manager	Project office support	Admin and Project mgmt.	45-50	10 years
	SI4 Project Office	Project office support	Admin and quality control	30-35	7-8 years
	SI5 Account Director	Sales defence sector	Sales director defence	51-60	+20 years
	6 Secondary respondents				
<b>PersonSoft</b>	PS1 Services Director	Defence/Maritime services	Senior supplier (Personsoft)	64-65	+20 years
	PS2 Commercial Manager	Defence/Maritime sales	Sales and contract mgmt.	62-63	+20 years
	PS3 Project Manager	Engagement manager	Project leader PS	35-40	12 years
	PS4 Senior tech consultant	Technical implementation	Software development lead	35-40	8 years
	PS5 Business consultant	Consulting and analysis	Requirements analysis	30-35	6 years
	PS6 Tech manager	Core product development, training and consulting	Product manager HRMSys	35-40	+10 years
<b>TestCo</b>	24 Secondary and tertiary respondents				
	TC1 Test Director	Software test director	Test manager HRMSys	31-40	+10 years

	TC2 Commercial Manager TC3 Test Consultant TC4 Test Consultant TC5 Tech Project Manager 5 Secondary respondents	European sales and services Test analyst Test analyst Tech project management Trainers	Sales and contract mgmt. Testing software Testing software Technical lead suppliers	51-60 31-40 31-40 31-40	+15 years 5 years 5 years 8-10 years
<b>DefOrg</b>	No respondents in this research project	NA	NA	NA	NA
<b>Agency</b>	AG1 Contract Manager AG2 Project Manager AG3 IT Senior User AG4 Project Manager 2 Secondary respondents	Procurement DEFORG Senior project manager IT department management Senior project manager IT&V consultants	Senior buyer/contract mgmt. Project director (overall) Supplier IT system support Deputy project director Independent validation	51-60 31-40 31-40 51-60	+20 years 7-8 years +12 years +10 years
<b>HRMDept</b>	HR1 HRM Director HR2 Department Manager HR3 System Support MGR HR4 System Administrator HR5 Project Manager 3 Secondary respondents	HRM Director Manager HRMDept Tech Support Manager System administration Project management Central user support	Senior user and project owner Manager support group Manager 1 <sup>st</sup> line support System and user admin Project leader HRMDept System users	64-65 65-66 40-45 35-40 51-60	+20 years +20 years +10 years 8 years 4 years
<b>Agency IS</b>	IS1 IS Support Manager 3 Secondary respondents	IT support manager Security test consultants	Senior supplier Security and penetration testing	31-40	+10 years

Figure 3-5 - Data collection across the project phases

## Data collection across project timeline



Source: Author

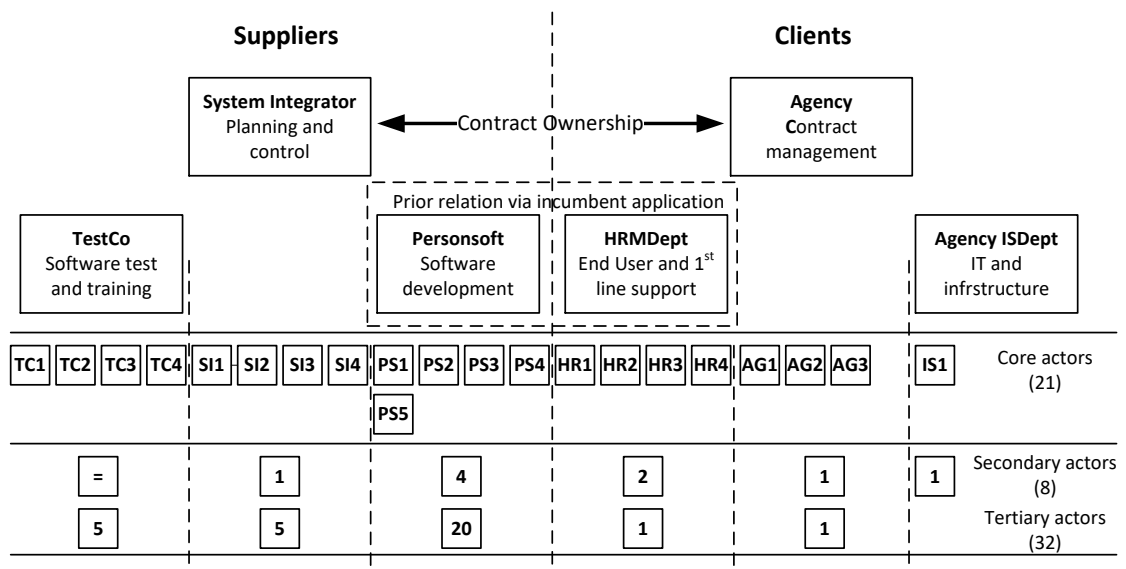
Research data for the implementation phase included: semi-structured interviews, emails and structured interviews, documented workshops, research diaries, all

contract documentation, design, planning, project management and control documents, internal memos and all monitoring reports. The number of personnel in the project across the main case organisations was sixty-two with twenty-five core participants who were tracked closely. This data was stored electronically in archive folders covering the general project control (13 folders, 535 files), design (12 folders, 675 files), emails (4,921) and memos/reports (1389). All data, including extracted emails, was entered to a password protected database, NVivo10.

These data analysis steps were executed mainly following IOC system acceptance during 2014, but realising that recall and interpretation of the respondent data were likely to be fallible and influenced by the researchers own theoretical interpretation and biases an additional round of semi-structured interviews were conducted during 2015 with key project participants to discuss and validate main themes and critical points the analysis uncovered. The overall data collection model and interview structure for the HRMSys project within the overall longitudinal case is shown as **Figure 3-6**.

**Figure 3-6 - Data collection structure across organisations**

#### Structure across HRMSys Organisations



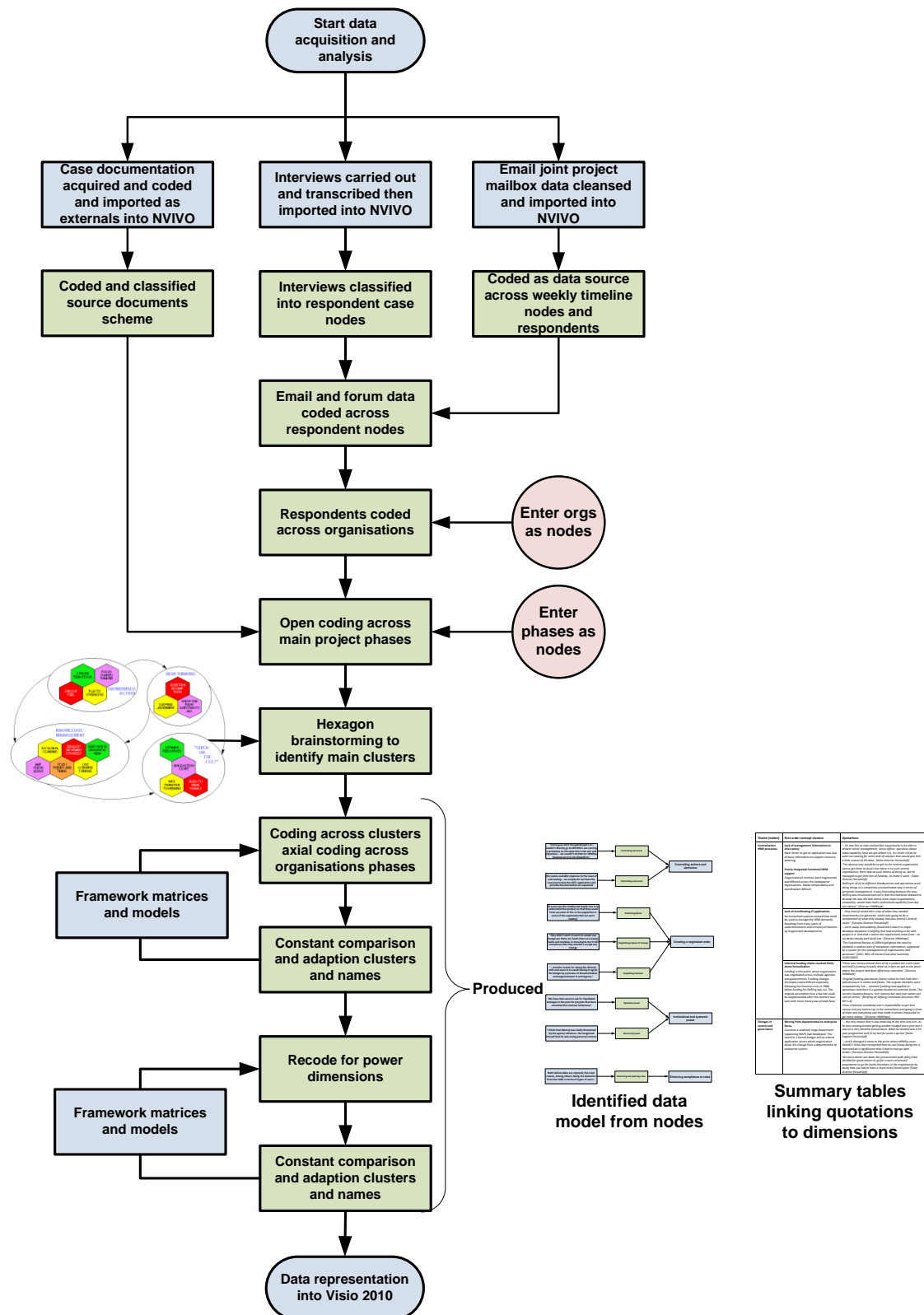
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### 3.9.1 Data analysis

The framework for analysing the qualitative data extracted from the interviews, email narratives and documents followed the model described by Strauss and Corbin (1998)

for grounded theory, and the data analysis was carried out in four main phases following the procedure outlined by Gioia et al. (2013). First, field notes and project log, interview transcripts and archived project document data were thoroughly reviewed to get a broad understanding of the main project events and their sequence, which were then used as a guide for the initial coding. The second stage involved coding and classifying documentation, emails and interview transcripts chronologically and across organisations. Extracts of the document and respondent classification sheets are shown later as **Appendix K**. Email data was cleansed and coded into NVivo10 along with all interviews, project documentation and project log memos against case nodes for participants, organisations, and emails whilst project documents were further categorised into weekly time buckets. This analysis covered the full timeline of the development phase of the IOC project from its initiation in February 2011 to final system acceptance in December 2013. At this stage of the analysis a timeline of the actual narratives in media res between actors was established that acted as a reference baseline to triangulate respondents' recall. During the third step from the basic dataset, original terms and concept ideas from the respondents were identified and coded 'in vivo', a specific coding technique in NVivo10, then grouped into first order categories or concepts. As an intermediate step to support the identification of the main clusters the technique of hexagon brainstorming was used (Hodgson, 1992) – a small extract of this part of the analysis is shown in **Appendix F**. The coding phase was carried out in two separate constant comparison cycles covering the delivery service concepts model and power themes based on initial sensitising frameworks derived from the literature framework (**Figure 2-6**). The themes were converged on the final models by a process of constant comparison, using framework matrices, iterating between the raw data with that already encoded and by this means arrived at second-order theoretical constructs shown in the data models. Finally, higher level connections and structures within the data were identified and used to derive the theoretical dimensions that were used to explore and develop process maps and to derive a grounded model. An outline of the collation and analysis approach is shown as **Figure 3-7**.

Figure 3-7 - Outline data analysis process HRMSys project



Source: Author

### 3.10 Research Ethics

Research ethics in the social sciences addresses: how independence and integrity of the research is assessed, participants recruited, informed consent obtained and confidentiality assured (BERA, 2011). To ensure integrity of results, research records and notes and the processes of analysis are made visible during the research. Intentional biases were minimised by preserving raw data and making visible the workings of the research. This was explicitly accounted for in the research method outlined earlier but includes memos and daily project logs stored in the project database NVivo10. Furthermore, the rationale for selection of which data to represent or exclude and the preservation of an audit trail, in principle, enables repeatability of the process, increases visibility and honesty and permits peer review (Resnik, 1998).

Respondents came from participating client and vendor organisations. Consent to interview employees of their organisations was sought in writing and an example introductory letter and confidentiality agreement is shown later as **Appendix A**. The nature of the research was outlined, covering: how research was to be conducted, the management of confidential data, the ethical responsibilities of the researcher and how confidentiality and anonymity of respondents was to be assured. The potential use of the information, covering academic and practitioner papers, was agreed along with any confidentiality and disclosure issues. Required reports on findings for organisational use were also specified during the introductory meetings.

Matters relating to the Data Protection Act (HMSO, 1998) were also explicitly laid down in writing and within the oral brief. Organisations and respondents were informed, during the oral brief prior to interviews or focus groups, that no personally identifiable information would be stored. All notes and data for organisations used synonyms or codes and were entered into NVivo10 only using these codes. Access to the research data in NVivo10 was only via the author's password protected desktop PC and by the entry of the research database password. Further, confidentiality and anonymity of their interview data was assured, and notwithstanding the 'implied informed consent' received from their organisation, all respondents were informed that they had the right to switch off the tape recorder (where recording was permitted), or to withdraw unconditionally from the research at any point. Respondents were also told that no repercussions, such as reporting back to their

management, would occur should they choose this option. In such cases, the interview was terminated, and the results not used in analysis. Furthermore, to assure avoidance of harm to respondents, if a line of questioning engendered an emotional response, that line of questioning was immediately ceased, and an appropriate note made in the meeting report. Following the interviews, the respondents were debriefed, and told, *inter alia*, how the data would be used and asked if they be willing to provide any follow-up clarifications. Requirements of the data protection act on the researcher were re-emphasised, to further assure them that their confidentiality and anonymity would be protected.

Finally, in the write up and summarising of the cases and data, such as the profile of organisations, it is possible that a third party with detailed industry knowledge could guess the organisation concerned. However, as the research purpose was to identify work practices and to raise these to a theoretical perspective identification of specific behaviours to organisations or individuals is believed to be a low risk. Nevertheless, during review of final papers, or submitted work derived from this research, peer reviewers will be asked specifically to look out for this issue.

### **Ethical compliance**

Research carried out at the University of Sussex is subject to an ethical review process that checks for compliance to good practice in research. This process is compulsory and the author of this thesis submitted an ethical review application and the appropriate review certificate is shown later as **Appendix C**.

### 3.11 Chapter summary

**The chapter has:**

- Addressed the research method adopted to answer the research questions by observing and analysing a single supply chain case study with six organisations contributing to the outcome following a qualitative analysis methodology.
- Recognised the contextual influences and how these will be addressed during the research.
- Outlined the qualitative grounded approach that was followed to ensure engaged and reliable research was carried out.
- Detailed the data collection methods and outlined the analysis stages followed during the coding of the qualitative data into NVivo10, with attention paid to the rigorous approach adopted in assembling the entire narrative timeline of the focal stage of implementation.
- Paid attention to the ethical issues and how these are addressed during the complex implementation phase where potential conflict and stresses could have occurred.

## Chapter 4 – The antecedents to change

### 4.1 Chapter overview

RQ1: In what ways do antecedents and a prior history impact and constrain the implementation processes of outsourcing?

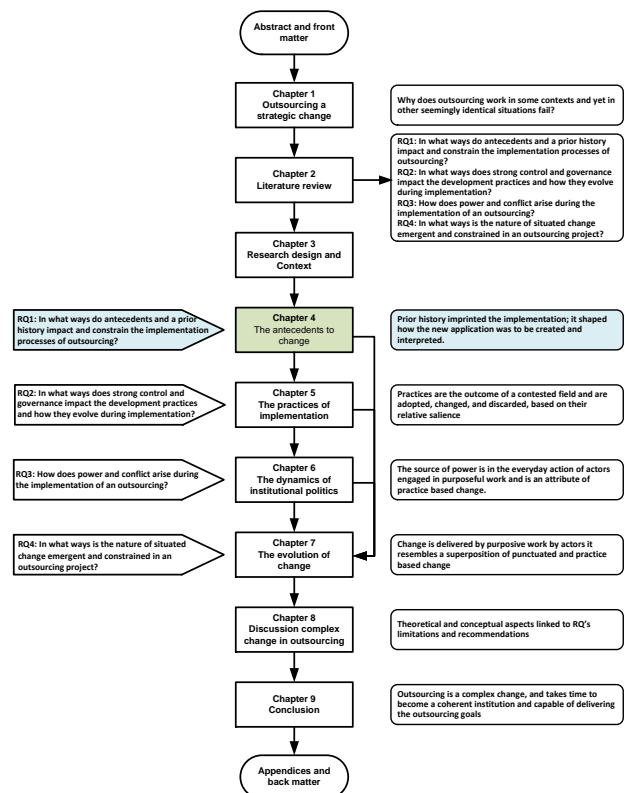
**Chapter 4**  
The antecedents to change

Prior history imprinted the implementation; it shaped how the new application was to be created and interpreted.

This chapter will analyse the impact of antecedents and initial conditions on the implementation of HRMSys and demonstrate how the prior history of the participants shaped how the business need was constrained and interpreted by the accumulation of their past experience of working together (Kimberly and Bouchikhi, 1995, Wiebe et al., 2010) .

#### This chapter covers:

- A brief overview of the history of the HRMSys project and describes how the working relationship developed and changed between HRMDept and PersonSoft.
- The entry conditions at the start of the HRMSys project and the changes in the governance and control that took place.
- The evidence for the derived dimensions of context linking from empirical clusters via themes to the high level categories.
- A summary of findings and a preview of the next chapter.



This chapter addresses the following research question:

**RQ1: In what ways do antecedents and a prior history impact and constrain the implementation processes of outsourcing?**

## 4.2 Overview of the HRMSys project

HRMSys is a human resource management system deployed across the headquarters of a large European defence organisation and provides capability and resource management for peace time and crisis establishments. It provides people with the required competences to fill posts in establishments. It is an IT system, embedded business processes, and a support organisation to manage the application and was delivered by a multi-supplier consortium between 2011 and 2015. The software supplier for HRMSys was PersonSoft, a small company in the UK who had supplied to HRMDept (the user organisation) a software application with essentially the same functional scope as the HRMSys software over a period of 15 years. The relationship between PersonSoft and HRMDept throughout this time was characterised as collaborative with social and outcome controls favoured (Langfield-Smith and Smith, 2003). They reacted flexibly to HRMDept's requirements in providing an application which supported the core of their functional needs, covering basic personnel management and establishment planning at minimal cost. The working relationship was built up over fifteen years between PersonSoft and HRMDept and emphasised flexibility and a willingness to work collaboratively and as a consequence practices of work had evolved and converged over time (DiMaggio and Powell, 1983). There was also a tolerance for a lack of formal techniques, testing and documentation, and the relatively frequent software errors were accepted. Contracting for services was also less formal and PersonSoft were able to bid for software enhancements and extra services on a basis of *'time and materials'* rather than a fixed price; *'we basically contracted in days we will do it will take 30 or 50 days 90 days whatever it was.'* This sort of behaviour is characteristic of a trusting buyer-supplier relationship (Heiskanen et al., 2008).

It was decided at a strategic level of the Defence Organisation (DefOrg) in 2006 to purchase a commercial off the shelf (COTS) software application, to support an expansion of the scope of the business processes being delivered by HRMDept to cover extra services deployed across its entire headquarters. Agency, as the procurement and contracting organisation at DefOrg, were instructed to contract for this provision and initiated a formal bidding process. As a consequence of their long-standing relationship, and to maintain tight control of the selection process, HRMDept

encouraged PersonSoft to bid for this wider scale deployment, and in order to qualify as a bidder, to seek a supplier partner with good standing with Agency. Accordingly PersonSoft were forced to seek a partner (System Integrator, SI) with a broader technical capability to integrate the application into the complex IT landscape of DefOrg as well to provide the necessary financial guarantees.

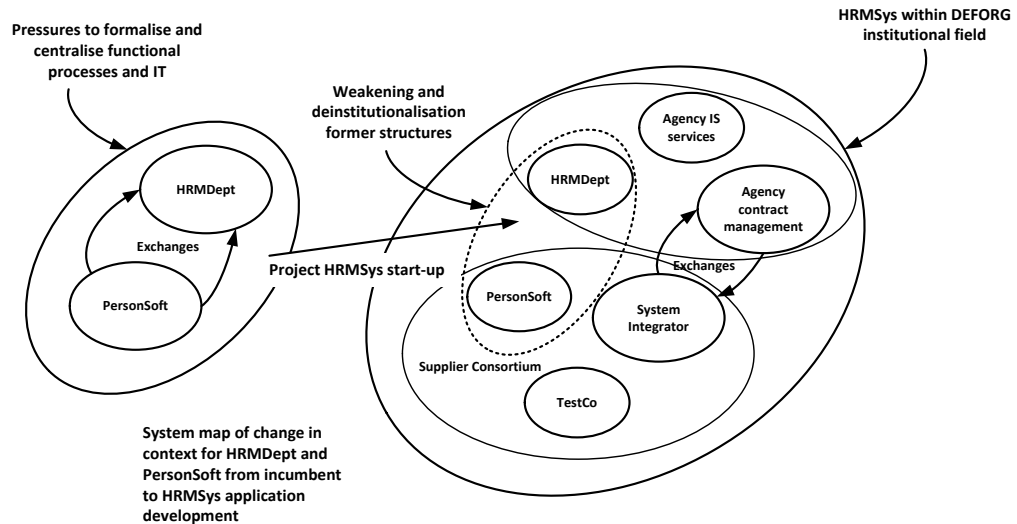
### 4.3 Entry conditions at the start-up of HRMSys

The lead supplier System Integrator (SI) and PersonSoft formed a partnership to contest the bid, with SI taking the role of prime supplier and contract owner, and PersonSoft as sub-contractor delivering the software. The case organisations for the delivery of the HRMSys application are shown earlier in **(Table 3-1: 65)**. In responding to the bid the consortium offered an extended version of the incumbent client-server application (MAPS) that, although technically non-compliant with the specification for a full web-based application, offered good functional coverage from the end user community perspective. Following a successful competitive bid process SI and PersonSoft signed a back-to-back agreement to deliver the project under a formal contract with Agency.

The delivery of the software under the contract meant that the parties, PersonSoft and HRMDept, had to adapt their ways of working and operate within the formal umbrella of the SI and Agency control procedures. This formal approach demanded more rigour, service dependability, good quality and well tested software more characteristic of a management control logic (O'Reilly and Reed, 2011, Offenbeek et al., 2013). From this perspective, the control processes change from a flexible relational approach, to a formally controlled and actively managed contract. Within this structure the principal contracting partners were Agency and SI who operated in-between the old partners HRMDept and PersonSoft respectively. This implied that the relationship between PersonSoft and HRMDept became formally arm's length and excluded the more social control mechanisms and adaptable behaviour that formerly existed (Weber and Mayer, 2011). The informal approach was replaced with a strict, preventative contract framework that acted to minimise risk and control delivery precisely (Poppo and Zhou, 2013). The structure of the project broke the direct communication chain between PersonSoft and HRMDept and placed both parties

within a controlled process of delivery that was channelled via SI and Agency to the eventual end user (**Figure 4-1**).

**Figure 4-1 - System map change in context at HRMDept**



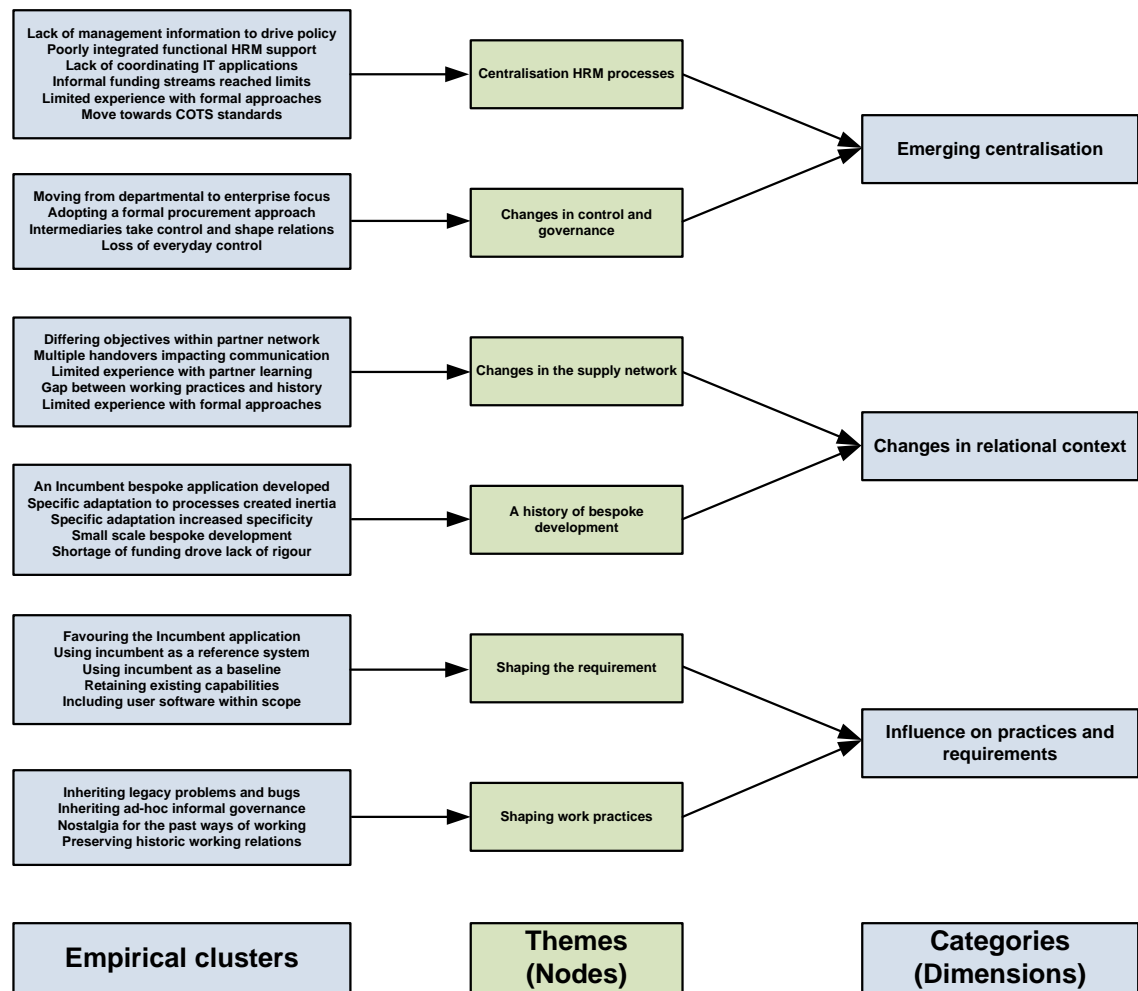
Source: Author

Contractually the project was framed by a strict set of requirements and statements of work (SOW) covering all aspects of the supply, performance and testing of the application. And this was encapsulated in document sets hundreds of pages long. Furthermore, project management standards, control processes and how the design, testing, documentation and quality standards were to be applied were all mandated. Functional and non-functional requirements of the application software, supporting design documentation, technical and project meeting dates and physical software delivery were controlled by a detailed and complex contract that emphasised risk reduction, control and a formal interaction. This contractual posture was typical for a public sector bureaucracy (Sanderson, 2009, van der Meer-Kooistra and Vosselman, 2000). This contract bound the suppliers to deliver contract line items (CLINS) for a firm fixed price against specific milestone dates and subjected them to contract penalties and damages should these be exceeded.

#### 4.4 Empirical evidence for the contextual dimensions

The initial sensitising framework for the data analysis for the ‘antecedents to change’ data model was drawn from two main sources. Firstly, the theory of de-

institutionalisation and the antecedent triggers namely: changes in political distribution, functional necessity, social consensus, social and environmental pressures and changes in constituent relations defined by Oliver (1992: table 2: 579). Secondly, an empirical justification of the theory and demonstration of the cumulative interaction and potential re-enforcement of the factors by a core role, for example, the move to centralisation observed in the HRMSys case (Seal, 2003). Analysis for this section was then based on identifying and breaking down the components of the contextual influences prior to project start-up eventually arriving at three empirically justified themes: Emerging centralisation, changes in relational context and influence on practice and requirements. All aspects of antecedent change and de-institutionalisation that were observed in the HRMSys history (Oliver, 1992). These three categories were extracted from the main analysis following the same basic procedure as **Section 5.2** for the full implementation model. For the first step, the six categories of de-institutionalisation were set up as nodes in NVivo10 and used as an initial coding target. Interviews, group reports, archival project documentation and email narratives were on-coded from the main case nodes into sub-nodes or 'in vivo' as needed for sub-categories. Convergence on the final model was by a process of constant comparison, using framework matrices, recoding and iterating between the raw data with that already encoded in the current construct (Bazeley and Jackson, 2013). Laddering up or down, adapting names and re-comparing and by this means the second order constructs emerged. As a final step the second-order themes were combined into aggregate categories illustrating the practices observed into the data model shown in **Figure 4-2**.

**Figure 4-2 – Empirically derived data model for contextual influences**

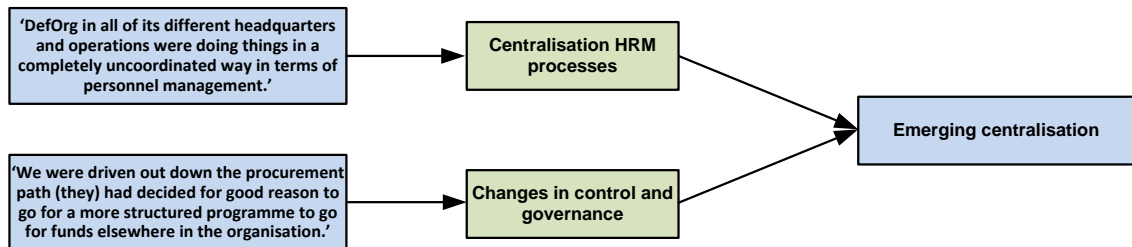
For each of the dimensions representative quotations were extracted from the case raw material and clustered around the theoretical second order themes. For each dimension and sub-construct this analysis is shown below in **Table 4-1 to 4-4**, enabling a trace to be made from empirical evidence to high level category. In the following section a brief introduction to the main emergent themes is shown along with a high level process model illustrating the interaction of the themes.

#### 4.5 Dimension - The emerging centralisation

Two main influences drove the original selection of a bespoke development and the subsequent start of the HRMSys project. Firstly, the fragmented and decentralised nature of business and IT at DefOrg, and secondly, the formalisation of the delivery of business processes as departments and IT support adopted an enterprise focus. The

link between the empirical data and these two factors is shown below as **Table 4-1** and an extract of the data model shown as **Figure 4-3** that illustrates the link from the data, via empirical themes, to the dimension category centralisation.

**Figure 4-3 - Extract empirical model centralisation**



The original rationale for integrating human resource management practices across the organisation and providing an application that could provide actionable data across the DefOrg organisation was the lack of reporting on the status of available resources for deployment into operational theatres.

*'There were times when it got very political because they [politicians and senior military staff] were making statements based on what they had and this is getting back to ministers and are turning round and saying hello that's not true you can't say things like that.'* [Director HRMDept]

When the Director of HRMDept started a search for an application that could support processes such as the *'operational deployable headquarters'*, it was found that contrary to the expectations that *'DefOrg would have had a centralised system'*, such a system did not exist. Rather, information management within the headquarters of DefOrg had grown up as *'little organic bits none of which were doing anything more than little spreadsheets'* adding up headcounts [Director HRMDept].

The resulting application had a long history, reflected the existing operational processes, drove the development of HRM practices, and provided a support base for HRMDept from which to influence policy direction across DefOrg. At the time of the HRMSys actual project start (February 2011) the latest version of the MAPS application (incumbent at HRMDept) was version 5.5 and had been in service with several version updates for around 11 years and was still being enhanced by the software provider PersonSoft.

Development had been specific and bespoke to HRMDept's needs and not

centrally coordinated by DefOrg. This meant that at the time of the HRMSys project start the incumbent (MAPS) encoded the extant departmental business processes, and the application behaviour in the way that had been defined over time by HRMDept and as a result defined the current state of practice (Lyytinen et al., 2009). Although the formalisation of the system meant in principle the procurement process was objective as a manager recalled, *‘...the advantage that PersonSoft had coming into it was that you had the experience of working with us you knew what we wanted.’* This showed that PersonSoft had built up substantial relational advantages and trust prior to the start-up (Inkpen and Currall, 1998). This gave the incumbent application and software provider an inbuilt advantage, for example, when rival application suppliers presented their proposals, the assessors, end-users and HRMDept already had a defined mental model based on how the new application should look and perform.

*‘To be honest we will always in favour of basically PersonSoft because we had been working, we had been using the system for years, why throw away everything, baby out with the bathwater, start again with a completely new company who you knew nothing about.’ [Director HRMDept]*

Working with the incumbent application and supplier over many years biased and framed the decision-making towards the selection and maintenance of the existing arrangements. This carried through to the selection process a mechanism of asymmetric information possession between potential competitors that biased the whole process in one direction (Zhao et al., 2014).

**Table 4-1 - Emerging centralisation driven by context changes**

Theme (nodes)	First order concept clusters	Quotations
<b>Centralisation HRM processes</b>	<p><b>Lack of management information to drive policy</b> Main driver to get an application was lack of basic information to support resource planning.</p> <p><b>Poorly integrated functional HRM support</b> Organisational routines were fragmented and differed across the headquarter organisations. Made comparability and coordination difficult.</p>	<p><i>‘...he saw this as clear and perfect opportunity to be able to answer senior management, senior officer, questions about what capability have we got where is it. So I think I think he went out looking for some kind of solution that would give him a little control of HR data.’ [Sales Director PersonSoft]</i></p> <p><i>‘The obvious way would be to get to the central organisation and to get them to fund it but there is no such central organisation, there was no such means of doing so, but he managed to get little bits of funding...to make it work.’ [Sales Director PersonSoft]</i></p> <p><i>DefOrg in all of its different headquarters and operations were doing things in a completely uncoordinated way in terms of personnel management. It was interesting because the way DefOrg was structured and still is that this had been allowed to develop the way did and clearly most major organisations, companies, would have had a centralised capability from day one almost.’ [Director HRMDept]</i></p>

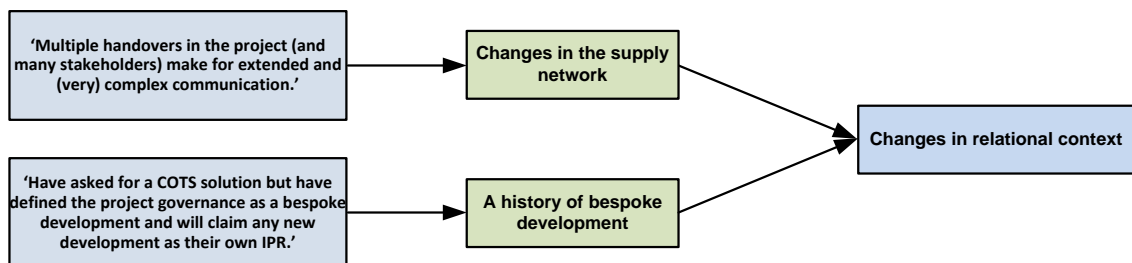
Theme (nodes)	First order concept clusters	Quotations
	<b>Lack of coordinating IT applications</b> No centralised systems existed that could be used to manage the HRM demands. Resulting from many years of underinvestment and a history of bottom-up fragmented developments.	<p>‘...they kind of nailed their view of what they needed, requirements are gonna be, which was going to be a combination of what they already had plus (name)’s kind of vision.’ [Services Director PersonSoft]</p> <p>‘...went away and suddenly found there wasn’t a single database anywhere in DefOrg that had anything to do with people in it. And that’s where the requirement came from – so we better bloody well build one.’ [Director HRMDept]</p> <p>‘The Functional Review of 2004 highlighted the need to establish a central store of manpower information, supported by a system for the management of organisations and personnel.’ [DOC: REQ UR Extract Executive Summary 15/02/2007]</p>
	<b>Informal funding chains reached limits drove formalisation</b> Funding in this public sector organisation was negotiated across multiple agencies and governments. Funding changes (increases) were difficult especially following the financial crisis in 2008. When funding for DefOrg was cut. The original assumption that a low bid could be supplemented after the contract was won with more money was proved false.	<p>‘There was money around then all of a sudden the crash came and DefCo funding virtually dried up in fact we got to the point where the project had been effectively cancelled.’ [Director HRMDept]</p> <p>‘Original funding procedures (were) suited (to the) Cold War – infrastructure in centre and flanks. The original members were comparatively rich ... common funding now applied to operations and there is a greater burden on common funds. The current situation favours ‘rich’ nations but note one nation can veto an action.’ [Briefing on DefOrg Command Structures RES: INF n.d.]</p> <p>‘Once it became somebody else’s responsibility to get that money and you had no say in the committees and going in front of them and everything else that made it almost impossible to get more money.’ [Director HRMDept]</p>
<b>Changes in control and governance</b>	<b>Moving from departmental to enterprise focus.</b> Overtime a relatively large department supporting MAPS had developed. The need for a formal budget and to extend application across whole organisation drove the change from a departmental to enterprise system.	<p>‘... the only reason that it was enduring at the time was him. As he was running around getting another budget every year but it was on a very iterative annual basis. What he wanted was a 10 year programme and (it to) last for quite a period.’ [Sales Support PersonSoft]</p> <p>‘...And it changed it came to the point where HRMSys even (NAME) I think then recognised that he can’t keep doing this it had reached a significance that it had to now go open tender.’ [Services Director PersonSoft]</p> <p>‘We were driven out down the procurement path (they) had decided for good reason to go for a more structured programme to go for funds elsewhere in the organisation by doing that you had to have a much more formal path.’ [Sales Director PersonSoft]</p>
	<b>Adopting a formal procurement approach</b> A formal contracted project created a distance between PersonSoft and HRMDept. HRMDept acted as a buyer and this was accentuated as key figures were replaced by others who did not share a common history.	<p>‘So rather than top-down in selling to the organisation we had these individuals within the function who kind of saw the opportunity to prove (themselves) using the software.’ [Sales Director Defence]</p> <p>‘It was always going to be an issue but then you throw in the bureaucracy, may be necessary bureaucracy, of a procurement organisation. Their remit is to make sure the money doesn’t get spent.’ [Director HRMDept]</p> <p>‘And I think (name) who was injected in there at some point in the process, I can’t remember now when he started, but it was fairly early on in the contract phase. But he was a very black-and-white guy. He saw, he had no allegiance to the past and the things that had been done.’ [Engagement Manager Europe PersonSoft]</p>
	<b>Intermediaries take control and shape relations</b> Control of suppliers and procurement of services moves from HRMDept to Agency who act as contract owners and authority.  <b>Loss of day to day application control</b> Management of application moves from	<p>‘For the future system and its strict versioning, Agency act in 2 roles in this project; as Host Nation responsible for procuring and delivering the project, and also as the Implementation Authority (IA) which acts on behalf of the Board to bring new systems into service and transfer them to the appropriate Service Provision Authority for Operation and Maintenance’ [Support Manager HRMDept]</p> <p>‘...But I must say at the end of the day there was nothing we</p>

Theme (nodes)	First order concept clusters	Quotations
	department to IT organisation and operates within its remit and rules.	<p><i>can do they were there to run the project not us. It was not our job we felt that they couldn't perform their job and it was now their job but they were just useless.</i> [Project Manager HRMDept]</p> <p><i>'...we did absolutely we discussed it not just amongst ourselves but with (name) the fundamental issue being the relationship we have with them ... in future you're going to be supplied by Agency who will then supply to SI ... it was obvious to us how many times did we have that conversation on the big white board in Piccadilly.'</i> [Sales Director PersonSoft]</p>

#### 4.6 Dimension – Changes in relational context

The changes in relational context were felt in two main areas; firstly, in how the supply network evolved towards a complex supply chain to deliver the formal contract, and secondly, how a tension emerged between the older bespoke tailor-made software development and the different governance and method implied by the COTS approach. The empirical link from the data to these constructs is shown as **Table 4-2** and an extract of the data model shown as **Figure 4-4** that illustrates the link from the data, via empirical themes, to the dimension category changes in relational context.

**Figure 4-4 - Extract empirical model changes relational context**



To qualify to bid and participate in the HRMSys project PersonSoft had to partner in a short term alliance with a major system house (SI), keen to exploit PersonSoft's access to key organisational actors at HRMDept and therefore improve its own access within wider organisation DefOrg. The principal objective for SI's involvement was positioning for a much larger logistics programme (100€ million, approximately ten times the HRMSys budget). For SI the HRMSys project was quite small whereas for PersonSoft it *'was the largest defence project in (their) history'* [CEO PersonSoft public announcement]. SI also acquired an offshore Romanian subsidiary (TestCo) to work on testing and training development to reduce bid cost. These three organisations formed

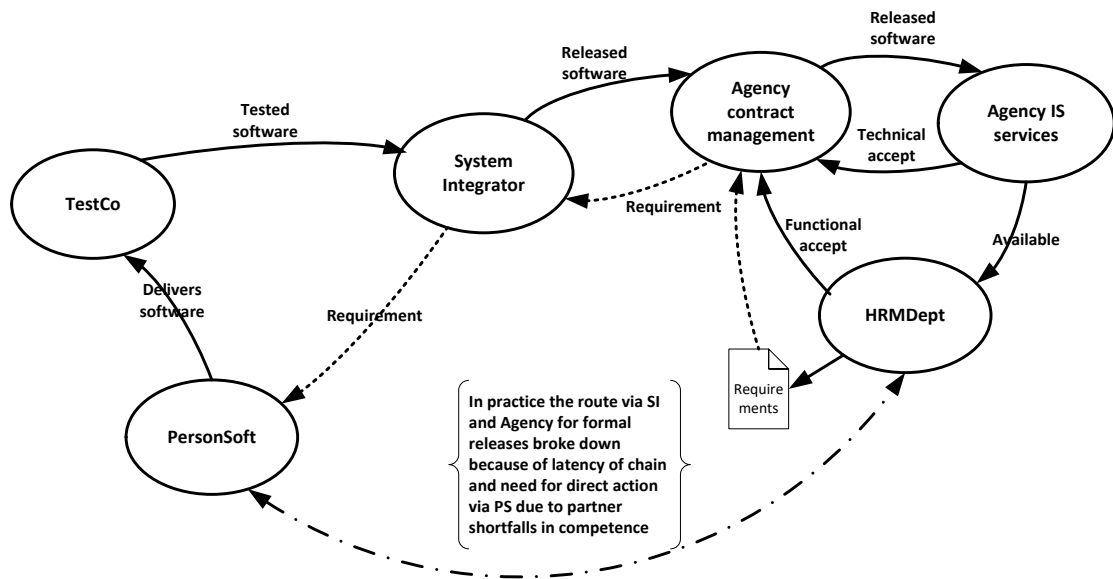
the core of the supplier consortium with SI as prime contractor controlling PersonSoft and TestCo as sub-contractors.

This structuring of the project exposed three major issues. Firstly, PersonSoft at the start of the contract had never worked in a consortium or alliance within the defence sector and had very limited experience in the demands for integrated project governance as well as the normal rules of partner engagement. Secondly, PersonSoft lacked formal techniques (and limited documentation) to support their development, and SI seems to have accepted their track record with HRMDept as sufficient proof of capability without proper due diligence seen as essential for outsourcing success (Hopkins and Wood, 2007, Pai and Basu, 2007). This gap between the expectations for rigour in COTS development, from the perspective of the larger supplier, led to tensions later in the project. Finally, the governance structure of the contract replaced the dyad between PersonSoft and HRMDept with an extended supply chain, with *'multiple handovers'*, and placed the intermediaries, Agency and SI, between users and providers of the software. This new situation is illustrated in **Figure 4-5** and shows how the flow of business requirements and software, directly between HRMDept and PersonSoft, became replaced by an indirect chain consisting of formal handovers and review between the additional parties introduced by the contract.

This change in governance structure also impacted HRMDept who had for years been solely responsible for the acquisition and management of the software from PersonSoft. The first change was in the subordinate role HRMDept had to adopt behind Agency who as both a host nation<sup>5</sup> and manager of the procurement sat between users and suppliers. The formal contact between buyers and suppliers was vested in Agency who communicated demands to the suppliers via the system integrator (SI). All changes to the application were strictly controlled and managed by Agency and in effect HRMDept had no independent funding or control over the HRMSys project. The software was formally procured and contracted. Their role was one of specifying functional requirements and accepting the application in terms of compliance to their business needs during a user acceptance test (UAT).

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<sup>5</sup> Agency is the contract manager and also provider of core IT services within DefOrg. In its 'host nation' role Agency receives the software and runs it on its infrastructure and plays the role of senior user in project terms. Agency provides the application as a service to HRMDept.

**Figure 4-5 - Linkage between PersonSoft and HRMDept from project start**

Source: Author

The previous ways of working with PersonSoft, the generation of functions based on vague ideas and wishes, was replaced by the need to define business processes unambiguously. This was a fundamental change in working practices and represents a major change in control at HRMDept brought about by the formalisation of HRMSys. Furthermore, the change in approach impacted the development process that was previously ad-hoc and relatively informal and collaborative (Weber and Mayer, 2011). A COTS formal system development demanded rigorous testing and a validated delivery, including supporting documentation, training and testing routines. The prime contractor SI, and the testing organisation TestCo, had assumed the PersonSoft application was COTS ready. However this was not the case and at project start many key elements were missing or only partially complete. This was a fundamental flaw that caused major problems during the later delivery of the software.

**Table 4-2 - Changes in relational context**

Theme (nodes)	First order concept clusters	Quotations
Changes in the supply network	<b>Differing objectives within partner network</b> The objectives of SI were to gain better access to the main DefOrg organisation and to block their competitors and drove the submission of a compliant bid. They also understood the benefits of working with an incumbent supplier and the	<i>'TestCo is chosen partner as they have substantial and successful track record with DefOrg Scale too big for PersonSoft as solo bidder Will handle all system integration, training and roll out responsibilities partnering with us (over SAP and Oracle) as best chance to win contract positioned to win bigger (€54m) DefOrg opportunity for logistics.[Sales Internal Presentation PersonSoft 2008]</i> <i>'...but more importantly than that was a blocker to anybody</i>

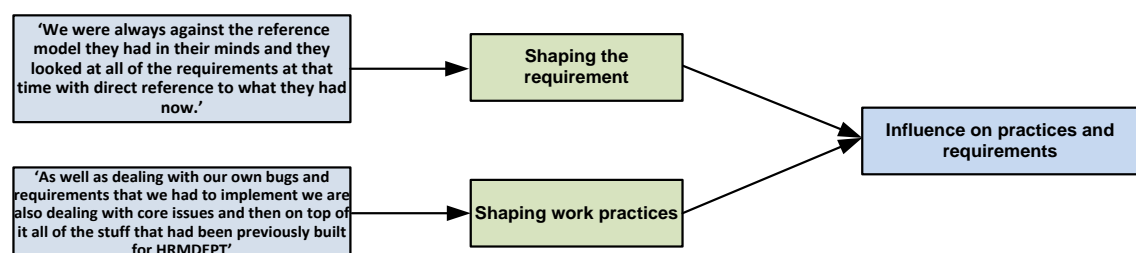
Theme (nodes)	First order concept clusters	Quotations
	pressures on maintenance of the status quo.	<i>else coming in and delivering something else into his patch. And that is maybe why we were always going to struggle to deliver on time and on budget because we were meeting some artificial objectives.</i> [Services Director PersonSoft] <i>'Yes absolutely and (name) had the nous to understand what (name) wanted and he had an existing supplier who provided what he wanted. If we hadn't had that relationship (name) would not have been interested at all. All the dice fell with the right number basically.'</i> [Sales Director Defence]
	<b>Multiple handovers impacting communication and effectiveness</b> Partner choice at the start and the contract structure meant extended supply chains, multiple handovers and difficulties in integrating and understanding the delivery choices.  <b>Limited experience with demands of partner learning</b> Some assumption that extensive co-supplier knowledge was unnecessary as PersonSoft had been the supplier for years.	<i>'Multiple handovers in the project (and many stakeholders) make for extended and (very) complex communication.'</i> [Internal Workshop PersonSoft 18/09/2009] <i>'I think one of the other problems is when you get this long gestation you get rotation with the users as they get new users coming in you've spoken to one guy and I want to do so and so a year later he's gone and somebody else's in.'</i> [Director HRMDept] <i>'...from this side of the fence that the people who knew how it worked how potentially to do it were surrounded by people who didn't have a clue and it was becoming really very fraught and there were letters between companies with dire consequences of pulling out of projects et cetera as a result of this tension.'</i> [Project Manager HRMDept]
	<b>Gap between required working practices and history.</b> PersonSoft were used to collaborative tailor made approaches with high interaction with end-users as its approach to software creation.  <b>Limited experience with formal development, project management and reporting.</b> Formal waterfall development, service management and requirements planning (as needed by their partners) were at variance with current modes of delivery and had to be learnt.	<i>'Waterfall model is a risk for requirement drift.'</i> [Internal Workshop PersonSoft 18/09/2009] <i>'One of the things that hobbled us in APMS was the product. We were creative when we bid for the project about the technology and the new web-based form – but we didn't do anything in the two years before the project started.'</i> [Services Director PersonSoft] <i>'...(it was) much more of a collaborative set of ideas turned into some functional capability which people say ah yes that will work. And that history didn't fit at all well with this heavy layer of waterfall contractual time driven do it or lose money procurement process that DefOrg had.'</i> [Services Director PersonSoft]
<b>A history of bespoke development</b>	<b>The assumptions in the bid process was for a move to COTS standards</b> The assumption in the bid process was to avoid expensive bespoke development and to purchase a COTS product. However in the contract processes such as Use Cases, testing approaches and design rules pointed to specific developments.	<i>'Have asked for a COTS solution but have defined the project governance as a bespoke development and will claim any new development as their own IPR.'</i> [Sales Internal Presentation PersonSoft 2008] <i>'Since we are asking for a COTS product with life cycle support, the software design specification should be available (released). It is up to the potential Contractor to decide on provided detail level in its Bid to support a sound engineering approach.'</i> [DOC: MEM AG Bid Response to Questions 2008] <i>'...is an overriding impression that I formed that we were trying to sell a COTS product, contracting situation where the history and been essentially bespoke development. And that dynamic, that dynamic with (name) and (name)'s entourage expected us to be able to do whatever, tailor this thing.'</i> [Services Director PersonSoft]
	<b>The incumbent bespoke application</b> The incumbent application had been developed over many years in an iterative developmental way and as a result changing to a new supplier would represent a high switching cost.  <b>Specific adaptation to processes created specificity and inertia</b> As the HRMDept organisation was trained	<i>'The fact that we were incumbent, the fact that (name) was there, the fact that he had tailored to some extent the requirements to more explicitly follow the capability that they had already installed kind of made it not exactly a no-brainer but certainly shifted the goalposts towards us I think.'</i> [Sales Support PersonSoft] <i>'But I think that had we gone for one of the other major products the biggest problem would be that the DefOrg business would have to change to fit the product rather than the other way round.'</i> [Director HRMDept] <i>'...he had some influence behind the scenes in terms of</i>

Theme (nodes)	First order concept clusters	Quotations
	and knowledgeable and the application specifically was adapted to match their work processes this application had high asset specificity and was difficult to change and implied high switching cost.	<i>indicating a preference relative to the fact that he had already an installed base. So I suspect he had some influence.'</i> [Services Director PersonSoft]
	<p><b>A history of bespoke development limited standardisation.</b></p> <p>The history of the development of the incumbent application (MAPS) had been bespoke. The application specifically tailored to the ideas expressed by HRMDept. This was driven by informal ad-hoc arrangements of small 'pots' of funding raised out-side of the DefOrg formal channels.</p> <p><b>Shortage of funding and bespoke development drove lack of rigour</b></p> <p>This limited funding also caused a focus on 'functions' being delivered and away from documentation and rigorous testing and reinforced the informal and collaborative relation between PersonSoft and HRMDept.</p>	<p><i>'I don't think he had a view that what we were delivering was a COTS product I think that over time it was a kind of bespoke capability that we were delivering... yet what they were looking for in their contract tender document was a COTS capability.'</i> [Services Director PersonSoft]</p> <p><i>'Please be aware in your APMS discussions next week and ongoing that we put a number of man day estimates against certain SR's labelled 'COTS' on the basis that certain base product capabilities would still require specific configuration.'</i> [Project Manager PersonSoft]</p> <p><i>'Both partners SI and TestCo had no experience at all with the delivered application. There was perhaps an assumption that it was a COTS product whereas MAPS was basically bespoke application development approach.'</i> [Senior Business Analyst PersonSoft]</p> <p><i>'So you ended up not being able to sell a standard product you had to have it so I could do lots of tweaks and lots of changes and I think that made it harder for you as well. Because everywhere you went you were tailoring basic product.'</i> [Director HRM ]</p>

#### 4.7 Dimension – Influence on practices and requirements

The influence of the incumbent and past developments between HRMDept and PersonSoft was mainly felt during the implementation by the role the incumbent application (MAPS6.3) played in shaping the requirements, the list of business needs, especially influencing the initial design, and shaping work practices; how work was to be done mirroring the past ways of working. These two principal constructs and the supporting empirical evidence are shown in **Table 4-3**, a high level process outline as **Figure 4-7**, and an extract of the data model shown as **Figure 4-6** that illustrates the link from the data, via empirical themes, to the influence on the practices and requirements dimension.

**Figure 4-6 - Extract empirical model Influence on practices and requirements**



The HRMDept ensured that the old application was defined as the ‘baseline’ for an upgrade to MAPS6.4, implying an upgrade of the current MAPS installation from ‘V5.5 to V6.4 (via V6.3), to form the APMS IOC baseline release’ [Services Director PersonSoft]. This resulted in an increase in the functional scope of the new application beyond the contract and included elements that maintained HRMDept’s autonomy and control in relation to Agency who had ‘*coveted my workforce and had visions of taking over the whole thing*’ [Director HRMDept]. Inclusion of the ‘old’ application as a fundamental building block for the HRMSys application meant all the pre-existing functions, embedded work processes and practices were taken into HRMSys.

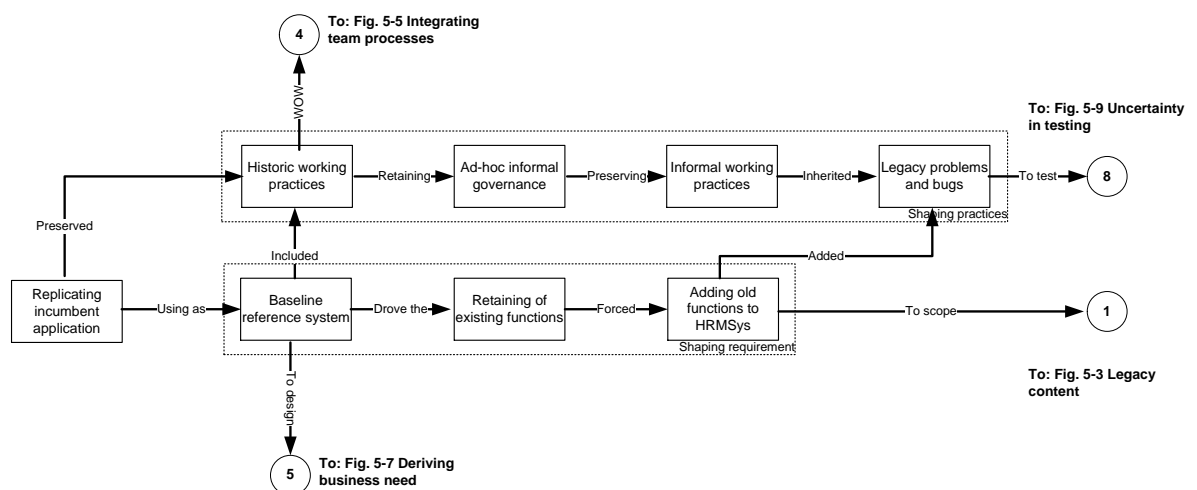
This acted to re-create the previous ways of working at HRMDept in two ways, firstly, the business practices encoded in the old system were replicated, and secondly, how the application delivered the function was preserved – the application looked and felt the same and old practices preserved (Kimberly and Bouchikhi, 1995). Both these aspects moved the preservation of the existing status quo centre stage at the expense of the stated objectives for a new COTS application. Furthermore, the preservation of the status quo became a contractual commitment included in the contract to the extent no loss in old functions were tolerated; ‘*there must be no regression of functionalities from what (HRMDept) have now*’ [Project Manager Agency]. Furthermore, once introduced within the formal project scope the old system (MAPS) was then used as a design reference point for all new developments, in terms of look and feel and performance of the application. The two aspects of preservation fundamentally altered the development trajectory and over-scoped the project at a stroke.

The second major influence was in the management of work practices; in the influence that the previous ad-hoc bespoke development had on software quality of the old application, and in how PersonSoft traditionally would react should problems occur. Furthermore, the old incumbent application’s informal development brought with it shortfalls in documentation; ‘*we didn’t write anything down ...it was all on-the-fly*’ whilst software errors that had been tolerated in the past, within a formal contracted delivery, quickly became a problem.

*‘And all of the bugs and faults that [name] had meticulously built into (the MAPS) product over the years we had to fix the things – it did hurt a bit to be quite honest at the time.’ [Senior Business Consultant PersonSoft]*

In addition there was an expectation from HRMDept that the previous ways of ‘tailor-making’ the application to suit their needs would continue. These attributes of the previous development approach between PersonSoft and HRMDept, which emphasised collaboration and agile approaches, clashed with formal software control and testing regime, and the arm’s length approach within the new project structure where Agency managed the contract. And as the relationship and governance that previously existed between PersonSoft and HRMDept was disturbed a latent tension and conflict within the project emerged.

**Figure 4-7 - Process outline influence of context on practices**



Source: Author

**Table 4-3 - Influences on practices and requirements**

Theme (nodes)	First order concept clusters	Quotations
Shaping the requirement	<b>Favouring the incumbent application</b> Users expressed functional need in terms of how the current application delivered that process and showed preference in the selection of the replacement.	<i>‘I think was brought in to do the requirements definition. (To) Pull together the serials working for working for (name) and his mission, his major mission was to construct requirements for the replacement for the maps project.’ [Services Director PersonSoft]</i>
	<b>Using the incumbent as a reference system</b> Using the MAPS incumbent as a reference enabled the functional ways of working built up over the years to be replicated.	<i>‘We were always against the reference model they had in their minds and they looked at all of the requirements at that time with direct reference to what they had now.’ [Services Manager PersonSoft]</i>
	<b>Claiming the value embedded in the application</b> Buyers claimed these functions as already delivered (and paid for) and the effort offset against any new requirements	<i>‘Can you provide a bit more information about the SRS covered in 6.3? We expected more SRS requirements to be covered in 6.3, so this excel sheet was probably built as an incremental view.’ [Project Manager Agency]</i> <i>‘Tomorrow we’ll meet at HRMDEPT ... AM to participate in a</i>

Theme (nodes)	First order concept clusters	Quotations
	identified.	discussion around 6.3 - PM, if 6.3 not closed we keep on participation till closed!' [Project Support SI] '...what must be clarified to E. and myself is what is the frontier between 'what PersonSoft does for HRMDEPT' and 'what HRMDept does itself' in MAPS 6.3 or 6.4 (I don't know anymore).' [Project Support SI]
	<b>Retention of existing capabilities</b> No loss in current delivered capability was tolerated and incumbent functions were to be documented and deficiencies fixed then moved to the current application.	'...there is still a long-term goal of making this thing work but more importantly they want to keep what they've got now working and it cannot lose any of the capability they've got.' [Director HRMDept] 'I best understand now the position of (name) when ( he is) talking about functions already existing in MAPS, but not defined in HRMSys requirement, and that he wants to be sure, are maintained as available in APMS. I see now that there is effectively a high risk.' [Project Quality SI] ...'this required stability is far from actuality. There are still several critical deficiencies associated with the fielding of MAPS v6.3...HRMDept is content for the risk to be raised to HIGH, however the resolution lies with PersonSoft; not HRMDept.' [Department Manager HRMDept Meeting Note]
	<b>Including user configured software within scope</b> HRMDept had the capability over many years to code the software themselves in what was termed the 'user config layer'. They sought to include this created bespoke software within the baseline application and have it accepted as part of the formal system. This element of the application was not within the HRMSys scope.	'(name) has insisted during the test discussions with TestCo that the UC layer needs to be included during UAT testing of the final delivery.' [Project Manager PersonSoft] 'The point is we cannot risk a UAT failure caused by code created outside our control. If DefOrg want to do this it is a change request.' [Project Manager PersonSoft] '(name) will request to Agency next week that the UC layer be switched off for FAT and SAT testing by TestCo.' [Services Director PersonSoft] '...next week there's a 'pre-UAT' workshop scheduled to test HRMSys with the User Configuration switched on...There are some 450 objects in this part of the application and we do need to have some idea of where the changes may impact HRMSys.' [Senior Technical Consultant PersonSoft] 'could you tell us what the status is about the frozen HRMDept User Configuration to be included in HRMSys for test and the list of open bugs in the current system which DefOrg says must be solved in APMS before starting the tests?' [Project Manager SI]
<b>Impact old work practices</b>	<b>Inheriting legacy problems and bugs</b> Including the incumbent MAPS application as the baseline – including beta released software for training – brought with it core product faults and bugs that formed the bulk of the testing problems that emerged during test.  Bespoke undocumented software also incorporated problems built up and tolerated over many years.	'As well as dealing with our own bugs and requirements that we had to implement we are also dealing with core issues and then on top of it all of the stuff that had been previously built for HRMDEPT.' [Technical consultant PersonSoft] '...they would not accept it until all these bugs were fixed. And that was the real kill. Because we kept saying we don't need them so leave it, it's irrelevant, no no no it's got to be fixed.' [Director HRMDept] 'Yes that meeting we had at ... where they put that big long list of every support call and whatever before us and at the right moment it was brilliantly done.' [Business Consultant PersonSoft] 'A high percentage of the issues captured are raised against CORE product and not the new features.' [Technical Support PersonSoft]
	<b>Inheriting ad-hoc informal governance</b> Documentation for the incumbent was non-existent resulting from former ad-hoc process. Contractually HRMSys (and the baselined MAPS incumbent) had to be documented to a defined standard. With no starting point this added to the project scope.	'Wasn't any (formal contracts) we had an idea and we discussed it and it happened. And we got the money and then procurement followed along.' [Sales Director PersonSoft] 'There was also the issue when we bought the original versions of MAPS there was virtually no documentation with it and the company was really suffering from the fact there was no adequate documentation for the users, for the administrators.' [Director HRMDept] 'I think it was the broken promises that we had made in the past if you want me to be honest. Because that it raises ugly

Theme (nodes)	First order concept clusters	Quotations
		<p><i>head a few times. When I was over there to do all the testing little comments in the background you know 'PersonSoft make all these promises and don't deliver'.</i> [Senior Business Analyst PersonSoft]</p> <p><i>...I expect that there is little if any documentation regarding this as there was not a requirement for technical documentation to be delivered in the last piece of work we undertook for HRMDept.</i> [European Service Manager PersonSoft]</p>
	<p><b>Preserving historic working relations</b> Both HRMDept and PersonSoft reverted to former relationships when it suited them to move outside of imposed governance. Cutting across the formal structure acted to accentuate partner exclusion.</p> <p><b>Nostalgia for the past ways of working</b> Old working practices created an expectation of responsiveness to demands from HRMDept even within the constraints of the formal contract. This contradiction between the same actors demanding contract compliance and responsiveness and 'tailoring' created stress on occasion between the old partners.</p>	<p><i>'Almost every intervention from DefOrg management side reset somehow the so fragile connection between TestCo and PersonSoft; I mean everyone tried to defend by itself that we forgot to react as a team.'</i> [Test Director TestCo]</p> <p><i>'I certainly got these impressions that (names) do not really know much about the requirement. I have asked for a Payroll contact and he will provide one. [name] believes that the benefit of going with us is that we would already have this functionality and hence this provides best benefit for HRMDept - clearly this is incorrect as we have no plans to date as far as I am aware to add in functionality that covers this.'</i> [Product Manager Defence PersonSoft]</p> <p><i>'For HRMDEPT, life is easy because they understand the systems makeup and are thankfully free of rigorous process, the change management that applies.'</i> [Tech Consultant 3 PersonSoft]</p>

#### 4.8 The drivers and constraints of the HRMSys project

The main factors that drove the original move towards selection of PersonSoft as a supplier of an application that could manage HRM processes were the need to centralise control coupled with the perceived lack of an available application within DefOrg. This was the main impetus towards institutional change (Oliver, 1992, Wezel and Saka-Helmhout, 2005). The original application developed for HRMDept was created from a bespoke tool set and the functions were tailored and modelled to the practices and processes then extant within the department. However, the move towards centralisation at an organisational level had a logic that made the development of a formal enterprise-wide system inevitable.

Centralisation of the human resources functions, as well as the need to provide these functions in enterprise context across Europe, implied a move away from departmentally oriented and supported systems. The basic underpinning for the adoption of the HRMSys approach was, first, to embed and manage enterprise scale systems within the DefOrg application architecture, and secondly, to integrate and standardise human resource management (HRM) practices across the organisation. To do this within DefOrg meant a formal budget and project had to be raised to deliver this requirement. Furthermore, as this was European-wide public sector procurement

there had to be a formal bid and contracting approach within the European Union. HRMSys therefore became a formal project funded by DefOrg and controlled by Agency - their procurement and contracting organisation. Requirements, work processes and functional need for the system needed to be specified in detail and then contracted as deliverables within a formal project structure.

The small scale development of the initial incumbent continued for ten years before the HRMSys project start and was limited development and low cost. Limited funding and the need to shelter development from the wider DefOrg community led to a process that emphasized delivery of useable functions rather than '*wasting money*' on peripheral matters such as documentation. Development was collaborative with HRMDept and PersonSoft focused on the delivery of functions – development was by a show and tell demonstrative process rather than specified up front in design documents. Requirements were based on an idea from HRMDept elaborated by trial and error in the application by a bespoke development technique. Furthermore, HRMDept were trained in application administration and even programming to maintain independence from the formal organisation. To add to this, most of the training for new personnel at HRMDept was actually done by the director. As a consequence of these processes, deep learning was acquired by HRMDept and many of the personnel developed knowledge on the application as deep as the actual developers at PersonSoft.

This previous relationship between PersonSoft and HRMDept set a pattern of expectations as to how the relationship would proceed and how the work was to be done within the new project. There was an expectation of continuity for the HRMSys project at its initialisation. Work formally was intensely collaborative a dyad with HRMDept personnel and PersonSoft working closely as an integrated team. The move towards HRMSys changed this structure fundamentally to an extended supply chain with PersonSoft and HRMDept operating behind SI and Agency respectively with '*PersonSoft invisible to DefOrg*' [Sales Director SI]. No longer having a one to one dyadic relation but working arms-length within a buyer/supplier context distant from its former partner. A summary of these antecedent forces, based on (Oliver, 1992), their impact and consequences is shown in **Table 4-4**.

Table 4-4 - Summary of antecedent influences

Cluster	Structural, Practices and Cultural Impacts	Consequences
<b>Emerging centralisation</b>		
<b>Centralisation HRM processes</b>	Lack of management information to control business processes Poorly integrated functional HRM support Lack of coordinating IT applications The incumbent built as bespoke application Specific adaptation to processes created specificity and inertia Informal funding chains reached limits drove formalisation	<i>Original drive to create HRMDept and its supporting application was the lack of standardisation in HRM processes across DefOrg. Original development was a local process. Broader scale centralisation supported formalisation and the move away from a departmental focus.</i>
<b>Changes in control and governance</b>	Moving from departmental to enterprise focus. Adopting a formal procurement approach Intermediaries take control and shape relations Loss of day to day application control	<i>HRMDept, its business processes and application support and provision had to move from an informal status to an integral part of DefOrg. A formal contractual relation rather than relational processes as before. Loss of overall control of project to Agency.</i>
<b>Changes in relational context</b>		
<b>Changes in the supply network</b>	Differing objectives within partner network Multiple handovers impacting communication and effectiveness Limited experience with demands of partner learning Gap between required working practices and history Limited experience with formal development, project management and reporting	<i>HRMSys was developed within an extended supply chain with multiple handovers in place of simple dyadic structure. PersonSoft were forced to move away from collaborative tailor made approaches to formal structuring of its deliveries.</i>
<b>A history of bespoke software development</b>	The assumptions in the bid process was for a COTS package A history of bespoke development limited standardisation Shortage of funding and bespoke development drove lack of rigour in development	<i>History of development was bespoke and application was radically tailorable. Informal nature of funding and focus on maximising functional delivery tolerated a lack of rigour in development cycles.</i>
<b>Influences of context and history</b>		
<b>Shaping the requirement</b>	Favouring the incumbent application Using the incumbent as a baseline and reference system Claiming the value embedded in the application Retention of existing capabilities Including user configured software within scope	<i>The incumbent application built over years encoded the work practices extant at HRMDept. Copying across the old application as the baseline framed all new developments based on the existing business processes and application behaviour.</i>
<b>Shaping work practices</b>	Inheriting legacy problems and bugs Inheriting ad-hoc informal governance Preserving historic working relations Nostalgia for the past ways of working	<i>Earlier development processes and interaction favoured a collaborative relation that existed for years. HRMDept and PersonSoft drew on this resource to circumvent formal controls. The informal approach and relaxed quality standards had created a bug ridden application.</i>

## 4.9 Chapter summary: strong influence of history

### The main case findings were:

- The prior history between PersonSoft and HRMDept strongly influenced the selection of the consortium and the selection was biased and pre-arranged.
- Larger scale centralisation within DefOrg was the principal driver for the move from departmental to an enterprise focus.
- Requirements were specified based on the incumbent application and this replicated old processes forward into the new technology.
- The use of the existing application as a baseline framed all the new developments based on its embedded mental model.
- Work practices between PersonSoft and HRMDept in development and requirement planning were preserved for the HRMSys project.

What the analysis has shown is that the long history between PersonSoft and HRMDept had built up a particular set of work practices and relationships that materially influenced the adoption and implementation of HRMSys. Furthermore, as the context changed to an extended supply chain, within the broader institution of DefOrg, these practices proved resilient and difficult to change, shaping the process of adoption to the new structure and how the development and software creation proceeded. The findings also hinted that the long standing ties and recurrent relations allowed sub-standard performance to continue and decoupled both HRMDept and PersonSoft from new innovation and both these factors contributed to overall poor exchange performance (Parmigiani and Mitchell, 2010, Poppo et al., 2008b).

### Preview next chapter

**Chapter 5** will focus on the actual implementation phase of HRMSys and how the project actors worked together to create the software product and outsource service. It will show the iterative and negotiated nature of product creation and how conflict emerges as project actors confront real world contingencies and problems.

## Chapter 5 – Practices of outsourcing implementation

### 5.1 Chapter overview

RQ2: In what ways does strong control and governance impact the development practices and how they evolve during implementation?

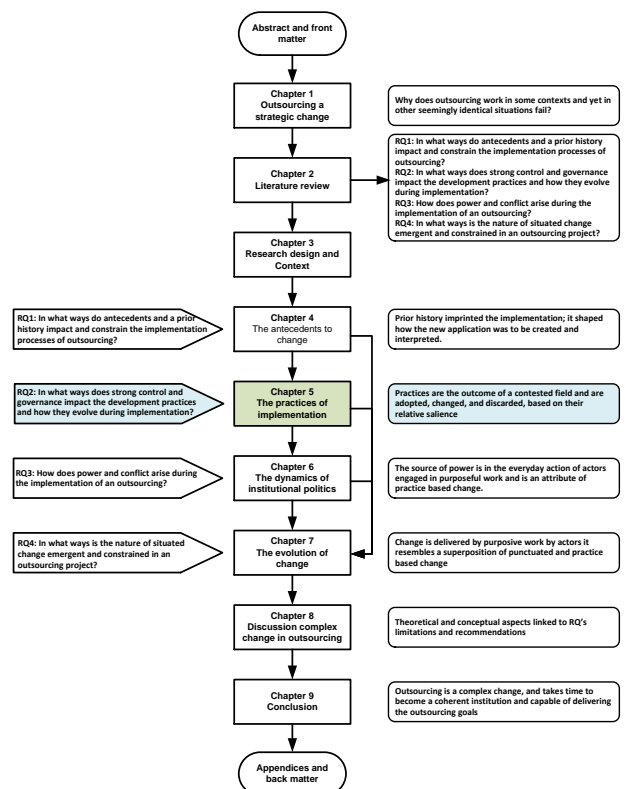
Chapter 5  
The practices of  
implementation

Practices are the outcome of a contested field and are adopted, changed, and discarded, based on their relative salience

The aim of this chapter is to analyse the impact that the strong contracting and governance had on the implementation of HRMSys and will show that this heavily constrained project engendered continuous negotiation and low level conflict. Strong controls essentially inhibited buyers and suppliers co-evolving to create the service (Inkpen and Currall, 2004) as they aimed to maintain and control contractual demands within a preventative contractual framework (Poppo and Zhou, 2013).

#### This chapter covers:

- The evidence for the derived dimensions of implementation practice showing the link from empirical clusters via themes to the high-level categories.
- Discusses each high-level category and derives a process model of the actual observed practices.
- Summarises the evolution of the dimensions over time and consolidates the process analysis into a high-level model and identifies key critical points during the implementation.
- A summary of findings and a preview of the next chapter.



This chapter addresses the following research question:

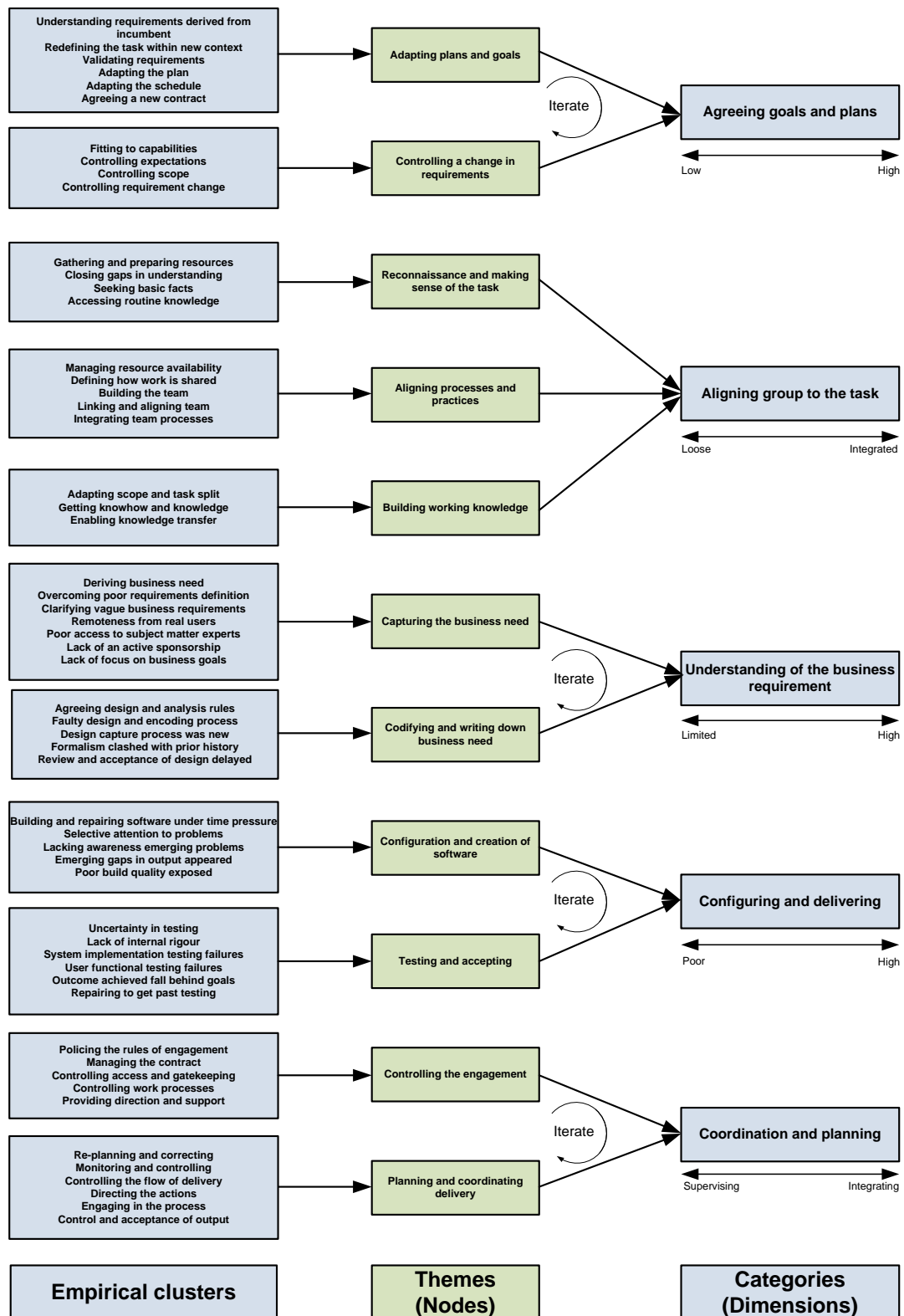
**RQ2: In what ways does strong control and governance impact the development practices and how they evolve during the implementation?**

## 5.2 Empirical evidence for the practice dimensions

The initial starting point for the ‘practices of outsourcing’ data model was based on the conceptual framework **Figure 2-7** and the role governance plays in adapting collaborative work practices. The theoretical underpinning is organisational institutionalisation, where change emerges at the organisation level and small group processes (Zucker, 1987). Furthermore, the focus is on the institutional processes of institutionalisation and de-institutionalisation, as shown in the actual processes of work, where new practices are introduced, and the old routines eroded and discarded during the activity of implementation (Greenwood and Hinings, 1996, Pishdad and Haider, 2013, Seal, 2003). The establishment of new norms and practices in IT outsourcing involves changes to processes, procedures and structures and how changes to these are controlled and structured. This led to initial theoretical nodes: control and structure, alignment and defining boundaries, creating the service and collaboration/building the organisation. In addition to the theoretically informed initial nodes analysis for this section was also based on axially coding for the components of the implementation using the lifecycle phases of: requirements validation, design, configuration, testing, and acceptance derived from the actual project plan. For the first step, these nine categories were set up as initial nodes in NVivo10 and used as an initial coding target. Interviews, group reports, logs and email narratives were on-coded from the case nodes into sub-nodes or ‘in vivo’ as needed for delivery service and theoretical concepts (Bazeley and Jackson, 2013). Convergence on the final model was by a process of constant comparison, using framework matrices, recoding and iterating between the raw data with that already encoded in the current construct. Laddering up or down, adapting names and then re-comparing, and through these means the second-order constructs were derived.

As a final step the second-order themes were combined into aggregate categories or dimensions illustrating the practices observed into the data model shown in **Figure 5-1** (Gioia et al., 2013). For each of the dimensions representative quotations were extracted from the case material and clustered around the theoretical second-order themes. This enables traceability to be demonstrated from coded raw source data, via the first and second-order constructs, to the final extracted dimensions. For each dimension and sub-constructs this analysis is shown below in **tables 5-1 to 5-5**.

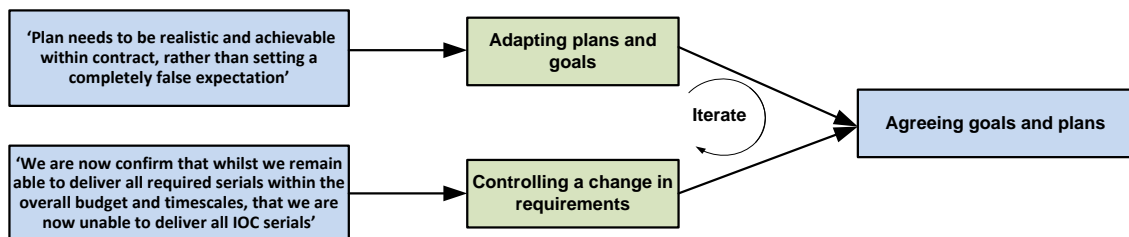
Figure 5-1 - Data Model for the implementation IOC HRMSys



### 5.3 Dimension – Agreeing goals and plans

There were two main processes observed as the suppliers and buyers sought to validate and agree the scope of the project, firstly, the agreement of a new scope by adapting plans and goals, and secondly, how suppliers can manage the delivery of the requirements more in line with the capabilities of PersonSoft controlling the change in requirements. These processes crystallised around the list of requirements, a serial list of specifications, that sets down how the system has to functionally perform, the management rules that must followed, and the required project and system documentation. The link between the empirical data and these two factors is shown in **Table 5-1** and an extract of the data model shown as **Figure 5-2** that illustrates the link from the data, via empirical themes, to the dimension category agreeing goals and plans. The output of this process is an impact statement that forms the basis of a contract amendment that ends the validation phase.

**Figure 5-2 - Extract empirical model agreeing goals and plans**



In the early stages, following the formal start-up of the activity, the supplier consortium's main task was to reassess and evaluate the scope of the implementation. The contract had been awarded to the consortium in 2008 and the start interrupted by the financial crash (Acharya and Richardson, 2009). This meant that much of the scope became uncertain due to the time lag. A particular problem that emerged early on was a conflict between what had been promised during the bid and proposal process and what could actually be delivered within the timescales. In order to win the contract a non-feasible plan had been presented that matched the buyer's proposed timescales. This meant a commitment to an imposed timescale ahead of due-diligence, a problem made worse by the long time-lag between contract award and actual start.

*‘They, System Integrator and Agency, have taken the plan as stated three years ago as the baseline – this plan is not sustainable. It is fixed in time scope and budget and much has moved on in the interim.’ [Services Director PersonSoft]*

During the proposal phase the goal of the suppliers was to gain acceptance, and to do this compliance was emphasised and all required functionalities would be delivered within the given price and timescale even though this implied a non-feasible plan. This introduced a major change in scope and rendered the initial assumptions invalid (Meredith et al., 2014). This issue was conflated with an assumption, by PersonSoft, that this project delivery would follow the same ad-hoc historical pattern and that the bureaucratic contractual demands would be ignored and previous ways of working maintained. In effect the contracted plan would be ignored in practice.

*‘I don’t think we made any serious allowance for our relationship with TestCo and SI (and) delivering to them and to HRMDept I think we envisaged a relationship that was much more direct ...I don’t think that our contractual estimate made any significant allowance for that kind of chain’ [Services Director PersonSoft]*

Furthermore, there was an expectation from supplier partners of PersonSoft that the COTS HRMSys application was more developed in terms of available documentation and software capability. TestCo and SI expected deep tacit knowledge of the client’s business processes based on a previous history of work at HRMDept and accordingly they would have little difficulty in providing standard documentation, process expertise and knowledge transfer. This was not the case in practice and this unexpected extra demand from within supplier partners coupled with the basic lack of feasibility of the core plan added additional pressure on cost and time (McEvily and Marcus, 2005).

HRMDept regarded delivered functionality and processes encoded in the incumbent application (MAPS) as already paid for, and as the incumbent formed the baseline for HRMSys, could be taken out of scope in order to make space for changes that had arisen during the interregnum from contract award to actual start. Strong pressure was exerted by Agency and HRMDept to maintain scope in terms of budget and timeline while including the new requirements. This was an issue felt hardest within the supplier consortium by PersonSoft, as ‘90%’ of the changes impacted their software in terms of delivery. Two acts of resistance were observed, firstly, selective

use of the scope change to trade-out resource intensive requirements, and secondly, a de-scoping of the IOC phase by moving difficult and problematic functional issues to later in the project when more information and resources became available. The major activity PersonSoft undertook during these negotiations was to minimise the impact of already existing functions in time and cost whilst maximising the effect of changes. The above aspects, searching for a match to capabilities, and creating a sensible plan from a supplier perspective, were intertwined throughout this phase. This was a process that sought to reduce the required delivery efforts and shape the project to one that had a greater fit with the financial goals of the suppliers. The buyer's aim was to maintain contractual integrity and obtain as much functionality for minimal cost.

From the start of the project there was a change of emphasis within the HRMSys project away from former ad-hoc informality with low demands for documentation, a bespoke development, and informal contracting, towards a context that emphasised rigour and formality (Offenbeek et al., 2013). Reduction of the impact of this was attempted by negotiation and shifting of requirements to reduce the scope of the administrative and project burden to be more in-line with the expectations and prior experience of PersonSoft.

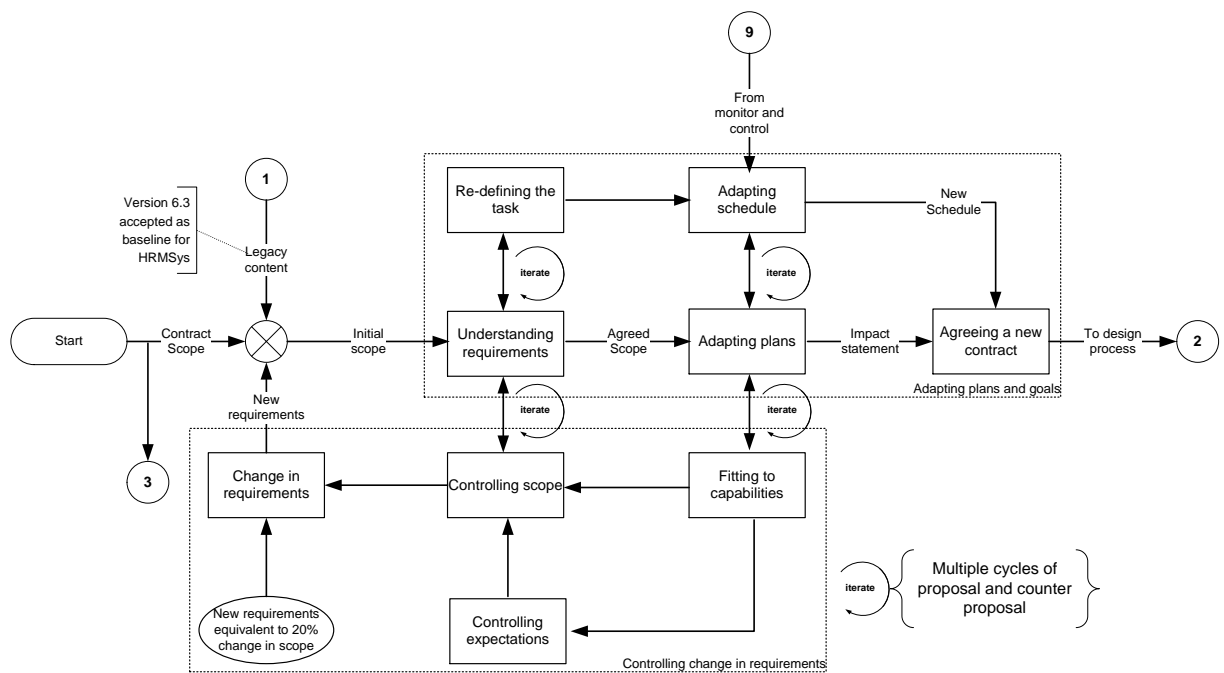
*'At this meeting the Impact statement was reviewed which primarily highlighted all the requirements that will be done in IOC (omitted / new) and those moved to FOC. It was a very successful meeting which seem to edge us closer to deliverable IOC Scope' [Tech Lead PersonSoft Report]*

Agency was broadly risk averse and a strongly controlling procurement oriented DefOrg department typical of a public sector organisation (van der Meer-Kooistra and Vosselman, 2000). Their lack of understanding of the application, and the real efforts needed from the suppliers to deliver on time, drove continuous cycles of questioning and refinement focusing on process, governance and formality rather than content. This led to a form of blindness to emerging delivery problems in the project. This orientation was also observable in the supplier partners TestCo and SI, who, like Agency, lacked understanding in the specifics of the deliverables and favoured more rigour and process in administrative matters such as documentation. This lack of relevant information about what must be delivered, and how the product worked, even at a high level, created a knowledge gap amongst the supplier side and cycles of

refinement and questioning that mirrored the buyer/supplier situation.<sup>6</sup>

A simplified process model of the initial phases of the project is shown as **Figure 5-3**. Each of the blocks in this process diagram represents a first order empirical cluster shown in **Table 5-1**, the relationship between them and the grouping around dimension categories. It shows how the initial phase of the project was dominated by multiple cycles of negotiation as parties, suppliers and buyers, sought to structure the project, and its changing context, to match their own objectives and success criterion.

**Figure 5-3 - Process outline agreeing goals and plans**



Source Author

**Table 5-1 – Agreeing goals and plans**

Theme (nodes)	First order concept clusters	Quotations
<b>Adapting plans and goals</b> Adapting the schedule and the plan was a continuous activity throughout IOC phase.	<b>Understanding requirements derived from incumbent</b> Initial requirements were based on an analysis by HRMDept of their existing processes based on the incumbent MAPS application not on an understanding of the supported business processes.	<i>'The work breakdown structure has now been edited and represents a fair view of the requirements scope.'</i> [Project Support SI] <i>'I think looking back is one of these hindsight kind of things we were still quoting estimates for the development process based on historical pattern of the way we have been delivering stuff to (NAME)'</i> [Services Director PersonSoft]. <i>'But they were very woolly and I believe that a lot of the issues that we encountered some of the tough negotiations we stepped into post the winning of the bid were stemmed from those requirements pulled together over this period of time'.</i>

<sup>6</sup> These observed phenomena may represent a coping strategy where partners lacking specific knowledge switch to formality and process to control the project trajectory.

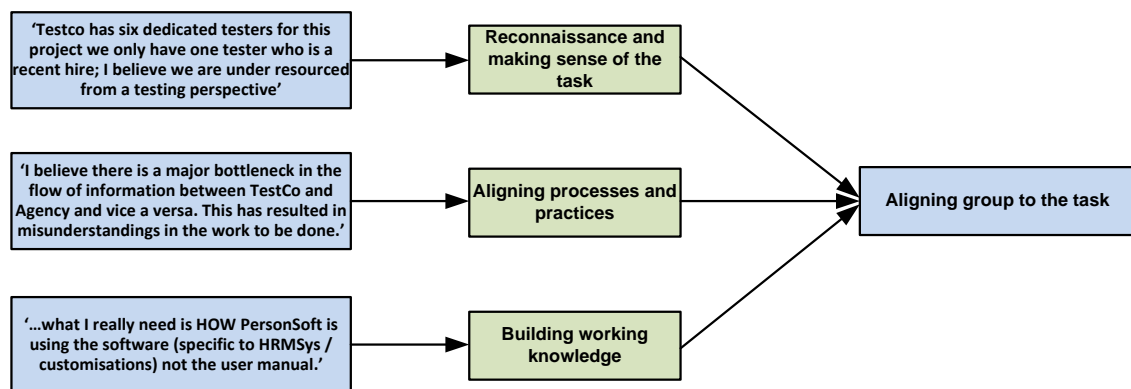
Theme (nodes)	First order concept clusters	Quotations
		<p>[Services Director PersonSoft].</p> <p>'It was almost a serial of capabilities without any degree of understanding of what the underlying business processes gonna be.' [Sales Consultant PS]</p> <p>'we can always start off with the system that's easy option we know that. We look at what it does now and say okay this reproduce what it does now in new fancy clothes. More or less a summary of what the HRMSys requirement looks like.' [Sales Director PersonSoft]</p>
	<b>Redefining the task within new context</b> Requirements were validated in a workshop based process that was agreed in advance. Document format and method was specified in the contract and output was validated against business requirement and compliance to presentation standards.	<p>'...find attached a small presentation which I hope will detail how the BP workshop will be conducted and the expected outcomes etc. Essentially I intend on producing a number of use cases and get these validated by the business.' [Business Consultant PS]</p> <p>'There is an action for the next PCR to 'demonstrate' how we will use the business workshops planned in a few weeks to develop use cases and other related documentation.' [Project Manager PersonSoft]</p> <p>'This document starts the process of considering the start-up issues in the development of the APMS system for DefOrg. From the team discussion a set of high level issues were derived in a workshop setting.' [DOC:IMR-PS20090918]</p> <p>'...indeed lots of documents but we agreed we would filter documents in draft form.' [Business Consultant PersonSoft]</p> <p>'Given that the HRMDEPT application will very shortly form the contractual development base for the APMS IOC release, we are fast approaching the point where SI (as prime contractor and first level support) and ourselves (as sub-contractor and developer) will be contractually bound to offer warranty'. [Services Director PersonSoft]</p>
	<b>Validating requirements</b> Requirements as expressed were imprecise and there were gaps. Object was to create process descriptors that could drive development and close imprecision in the task scope.	<p>'...a chunk of the requirements ought to somehow should have been challenged at the outset before we kind of embarked on let's see how far we could get and then worry at the end.' [Services Director PersonSoft]</p> <p>'I have a dream ... my dream is that we could assemble the atomic SRS's into use cases, linking them together when possible based on the process flows the end-users will describe us.' [Project Support SI]</p> <p>'...at the moment I am treating the 'new requirements as proposed.' [Project Manager PersonSoft]</p> <p>'I believe that part of the departure process for an individual leaving the DefOrg organisations deals with a performance report with the line manager, I can't find any SRSs that deal this with, what should we do?' [Business Consultant PS]</p>
	<b>Adapting the plan</b> The extensive review and revise cycles drove multiple changes and adjustments to the schedule (sequence of activities) and plan. Careful expression and presentation of the task had high importance rather than an achievable plan.	<p>'I re-started the exercise to identify how to satisfy each SOW in terms of 'PLANS to be delivered'. Reason for this is that the IV&amp;V is awfully strict in his review and spells each ... word ... There is thus a need to reduce the number of review cycles by sending them documents as complete as possible and addressing the dedicated SOW clearly.' [Project Support SI]</p> <p>'Can You please FIRST tell me at which time you are able to send it to me and Daniel for review? I need this because I have to deliver a new PMS today EOB and I need to add this date for the Schedule.' [Project Manager SI]</p> <p>'(name) asked for a pre-meeting to discuss about the updated schedule (sent to him informally, based on the discussion I had with you a few weeks ago about all the meetings).' [Project Manager SI]</p> <p>'Plan needs to be realistic and achievable within contract, rather than setting a completely false expectation' [Development Manager PersonSoft]</p>
	<b>Adapting the schedule</b> The schedule went through continuous revision throughout IOC phase of project	<p>'...herewith attached you'll find the draft of the updated schedule (PMS V1.1) as discussed during our last PCR. 1. The proposed schedule shows a deviation of 3 weeks from the</p>

Theme (nodes)	First order concept clusters	Quotations
	due to requirement change, failures in development and bugs/deficiencies.	<p>baseline due to: - extra effort to deliver Rel 4 - the additional buffer for bug fixing.' [Project Manager SI]</p> <p>'As PersonSoft needs one more day to fix the issues (there's still significant research needed for the cross-site scripting issue), we'll have to shift the schedule accordingly... New product baseline ready by PersonSoft: Friday 30/11/2012.' [Project Manager SI]</p> <p>'...we are negotiating an update to the scheduling due to updated requirements.' [Project Manager PS]</p>
	<b>Agreeing a new contract</b> Changes in scope of the project triggered a contract amendment and the production of an impact statement. The impact statement was normally a negotiation with buyers preserving cost and schedule whilst suppliers attempting to extend the budget. By IOC close a total of five impact statements were produced, one accepted and the rest rejected or moved in FOC requirements.	<p>'no cost reduction is implied by the current approach they have bought a COTS.' [Project Manager PersonSoft EM]</p> <p>'It is unclear how much effort was originally planned for IOC and how much is still planned for IOC and therefore how much effort has been saved.' [IVV consultant Agency]</p> <p>APMS-PM-ImpactAnalysis(ver0.3) [DOC: PCD-IMPACT-10/06/2011]</p> <p>APMS-PM-Impact Analysis-v0.1_DefOrg Review v0.1 [DOC: PCD-SHReview-03/05/2011]</p> <p>'I still see a few improvements necessary in the latest version of the Impact Analysis, and, consequently, in the version of the SRS to be attached with the contract amendment. [Project Manager Agency EM]'</p> <p>'...the results of the contract meeting with DefOrg this afternoon is a preliminary agreement on the impact analysis such that the scope for IOC is accepted...it means that you can base your design and development for IOC on that table.' [Project Manager SI EM]</p>
<b>Controlling a change in requirements</b> The impact of a large change in requirements at the start had to be controlled to fit with capabilities of the suppliers within the contracted timescales.	<b>Fitting to capabilities</b> To win the contract compliance was stated for all business requirements – all functional and non-functional requirements could be delivered. Requirements change at the beginning of the project was used to remove troublesome promised deliveries or to delay 'them' to a future project phase.	<p>'We agreed that we would get the current telephone directory they made working with 6.4 for IOC. I do not have the SRS to hand but the web access for IOC is via a terminal services session for manager and optimiser functions and web browser for EOL' [Project Manager PS]</p> <p>'...we need and answer to the point opened by (name) 'HRMSys : Web Apps from CURR' can I make the following statement ? PersonSoft confirms that even at CURR, the end-users of HRMSys use Web browsers, not client applications.' [Quality Support SI]</p> <p>'(we) need to be very careful how we work through clarifying this we do not want to appear dishonest.' [Sales Support PersonSoft]</p> <p>'We made no reference to the potential 'nuclear' option of delivering the new ISAF requirements only as a first IOC stage delivery.' [DOC: IMR-PS]</p>
	<b>Controlling expectations</b> PersonSoft needed to control the expectations of HRMDept to fall within the capabilities of PersonSoft, the project timeline available and the application they provided. This was accentuated as within HRMDept there were new key players with no history or understanding of what had gone before.	<p>'Some signs of understanding amongst DefOrg (although embryonic) that project is over scoped and needs re-planning to make sustainable – there is an open door to shape the project' [Project Manager PersonSoft]</p> <p>'I believe we have an opportunity to set the precedence for the type of documentation we will produce (i.e. demonstrate the sample training doc)...if we set the scene adequately we may be able to control their expectations.' (Technical Lead PS)</p> <p>'The game plan I guess is to get DefOrg to accept a certain way of documenting their processes and bounding their expectations - and USE Cases are quite a useful tool to do this as long as you do not stray too far in attempting to design an application that is.' [Project Manager PS]</p>
	<b>Controlling scope</b> The scope of IOC and any desired changes had to be contained within the capabilities of the application and PersonSoft to deliver them.	<p>'...Over 90% of the scope changes impact PersonSoft the impact statement has been prepared from that standpoint.' [Project Manager PersonSoft]</p> <p>'...we are now in a position to confirm that whilst we remain able to deliver all required serials within the overall IOC and FOC budget and timescales, that we are now unable to deliver all required IOC serials without adopting one of the following 3 approaches...' [Project Manager SI]</p>

Theme (nodes)	First order concept clusters	Quotations
		<p><i>'I'd effectively appreciate (name) being there to defend the position - scenario 1 of impact analysis.'</i> [Project Support SI]</p> <p><i>'The point is we cannot risk a UAT failure caused by code created outside our control. If DefOrg want to do this it is a change request and we must be able to test their code before we can include this HRMDEPT UC layer within APMS.'</i> [Project Manager PS]</p>
	<p><b>Controlling requirement change</b></p> <p>Hidden within the requirements list were demanding and non-feasible functions. Additional changes introduced severe problems in delivery. HRMDept via Agency sought to 'trade-off' the 'time spent' on already available functions for the new need. Thus preserving overall financial scope but expanding delivered footprint.</p>	<p><i>'Several of the non-functional, but never-the-less demanding SRS serials within the SOW are starting to surface; such as the extensive documentation requirement for a COTS project, and issues such as CBT and Help that are effectively not scoped with any requirement fit criterion'</i> [PM 2 PersonSoft].</p> <p><i>'They will of course try and use these estimates as a basis to trade days in and out. We will need to be consistent with these estimates, and at the same time also protect our IPR interests.'</i> [Services Director PS]</p> <p><i>'Based on the number of days additional effort for IOC (due to new/changing requirements) is it not possible to keep the desired new scope and keep the current timelines. We expect that the number of extra man days (50) effort is relatively small and should therefore be no problem to implement without changing the timelines or moving major parts of IOC to FOC'</i> [DOC: PCD-AG/201103]</p> <p><i>'We should be implementing minimum features here i.e. features which are not heavy on coding thus enabling PQA to test earlier.'</i> [Business Consultant 1 PS]</p>

#### 5.4 Dimension – Aligning group to the task

In parallel with the agreement of the scope of the task the new organisation created by the consortium had to determine and negotiate their respective roles and responsibilities, build initial trust, and create an effective working arrangement (Doz, 1996, Lee and Choi, 2011). The alignment that took place over the project was a knowledge exchange from PersonSoft to TestCo and an integration of the delivery between the partners that was only partially successful. This alignment covered three processes, firstly, reconnaissance and making sense of the task, concerned with probing for and acquiring initial codified knowledge, secondly, aligning processes and practices, creating end-to-end process and removing overlaps, and thirdly, building working knowledge, where in a more evolved collaborative stage deeper knowhow was generated and shared (Ring and van de Ven, 1994). These three principal constructs and the link between the empirical data and the three factors is shown in **Table 5-2** and an extract of the data model shown as **Figure 5-4** that illustrates the link from the data, via empirical themes, to the dimension category agreeing goals and plans.

**Figure 5-4 - Extract empirical model aligning group to the task**

The consortium on the supplier side consisted of organisations who had never worked together before. Furthermore, PersonSoft, supplier of the incumbent application (MAPS), had to adjust to working within the constraints of a formal contract and under the direction and control of a larger organisation. In addition, both SI and TestCo had no prior experience in the application, or with the client organisation into which HRMSys was being delivered. As a consequence they were completely dependent on PersonSoft to provide the knowledge of client context and HRMSys' specific technology. PersonSoft had been the incumbent supplier for an earlier version of HRMSys for ten years before project start. However the ways of working were informal and core elements such as documentation did not exist, as a Director stated, *'when we bought the original versions of (MAPS) there was virtually no documentation with it and the company was really suffering from the fact there was no adequate documentation for the users, for the administrators and indeed for the company.'*<sup>7</sup> The assumption of Agency, SI and TestCo was for the procurement of a COTS ready-made application that would be configured to suit specific functional need whereas PersonSoft had created MAPS as a bespoke application. When requests were made inter alia, for guides, system descriptions, database schemas, coding standards, or training documentation, these did not exist or if they did were out-of-date. It was remarked by the director of TestCo Romania: *'... it seems that these documents are not available or if they exist or not, I don't know, essentially we don't have them.'*

[Commercial manager TestCo]

<sup>7</sup> This was explained to the researcher as resulting from the ad-hoc funding arrangements. Finance came from *'various budget pots'* and was spent on maximising functionality and not on formal documentation.

Furthermore, PersonSoft, whether from resource shortfall or reluctance, were slow to engage with their supplier partners to correct these gaps; *‘...we have no generic documentation to give to TestCo’ [Technical Consultant PersonSoft]*. TestCo, who were responsible for executing formal testing processes, lacked almost all necessary knowledge and were unable to acquire it from PersonSoft despite repeated exchanges.

*‘Is anyone available from PersonSoft who can grant us 30 minutes for our technical questions? What about next week? Can we have some WebEx sessions?’ [Technical Consultant TestCo]*

Basic knowledge transfer between partners during the early stages of the project was ineffective and initial perceptions of trust damaged between the partners (Lee and Choi, 2011). This was due to the physical absence of any detailed specification accentuated by poor processes, resource shortages, and no felt obligation to do this at PersonSoft. Almost every request for documents, information, meetings, and conferences failed to yield results and prevented early alignment - a situation that led finally to a formal rebuke to PersonSoft from SI.

*‘...we agreed on a series of Webex activities ... to this date we were confronted with repetitive cancellation.’ [Extract: DOC: LET- SI-09/12/2011]*

The lack of formal documentation was made worse by the ongoing delays in producing the design documentation and a lack of access to the ongoing configuration process. Releases of software occurred with poor quality release notes that left limited time to correct and test the application before it was needed by the schedule. Poor communication was endemic and the reluctance of PersonSoft to adapt their processes enabled only limited integration; *‘our PQA seems to be on the side-lines and not engaged.’ [Project Manager PersonSoft]*

Communication problems were continuous throughout IOC with a variable PersonSoft response to partner questions. Parallel and ongoing communication with HRMDept, bypassing TestCo, fragmented the team. Furthermore, there were early attempts to conceal poor quality software and TestCo were criticised for going outside their (supposed) restricted remit of testing entirely new functions to test the entire application.

*‘During APMS IOC phase we were not a team. Almost every individual person was on his own. That’s my general conclusion’ [Test Director TestCo EmInt].*

Furthermore, PersonSoft at times seemed not to recognising their role as enabling partner learning, as was clear from this remark.

*‘I don’t know individually they seem to be quite capable fellows – but they just weren’t immersed enough and didn’t have the scope and scale to get close enough to meaningfully test this stuff.’ [Services Director PersonSoft]*

Throughout the IOC stage TestCo and SI were strongly dependent on PersonSoft for major aspects of the project, and had no visibility into the development processes and were unaware of inherent and emerging problems within the software. For example, in getting behind what was driving multiple software releases. Although problems in quality had been signalled at an early stage by TestCo this had been rejected by PersonSoft who influenced SI to ignore these concerns. The above aspects, seeking knowledge and attempts to integrate practices, were intertwined throughout IOC within a process that selectively excluded partners and reduced their access to essential knowledge to perform their role (Becerra et al., 2008). As a result a lack of integrated practices blocked partner learning and materially threatened success (Lee et al., 2012).

Documents and occasional discussions cannot substitute for the face to face interaction that is essential for the development of knowhow and tacit knowledge (Santhanam et al., 2007). Throughout IOC there was ineffective knowledge transfer and no practical alignment of work processes, and *‘clear and evident gaps between what must be done between PersonSoft and TestCo’* emerged [Services Manager SI]. Unresolved tensions and differences appeared that were not fully addressed by project management at SI, resulting from informal processes (being maintained) at PersonSoft clashing with expected formality at SI and TestCo.

An idealised process model of the initial phases of the project for this dimension is shown as **Figure 5-5**. Each of the blocks in this process diagram represents a first order empirical cluster shown in **Table 5-2**, the relationship between them and the grouping around dimension categories. The main aspect observed was the continuous cycles of team building and the sharing of knowledge to enable successful task performance. These processes were inhibited by poor availability, resource



Theme (nodes)	First order concept clusters	Quotations
	documentation, user guides, test scripts etc. were requested.	<i>requested the access to the CSA portal.’ [Technical Lead TestCo]</i> <i>‘...regarding the configuration management I have some questions. 1) What is your branching strategy? I want to have the same strategy as you guys have so that we can map your infrastructure. 2) What is your release strategy?’ [Technical Consultant TestCo]</i>
	<b>Accessing routine knowledge</b> The lack of explicit knowledge of the application also affected PersonSoft. It was not available, or very dated, within the organisation and had to be created just for this project. Knowledge of the application within PersonSoft was within tacit knowledge structures.	<i>‘I was button holed by TestCo yesterday (again) to be clear on what documentation we had or used to test our software ...If the answer is ‘we don’t do it that way’ so we have nothing could you say so and I will inform TestCo of this today so we can deal with the disappointment and tears and prepare workarounds.’ [Project Manager PersonSoft]</i> <i>‘The test scripts we have were for the original Defence Suite which is 6.0, they have not been updated since then. There are a lot of changes between 6.0 and 6.3, although there are no reasons why you cannot use the 6.0 test scripts as a basic guideline as long as the people using them are familiar (with the application) Sorry.’ [Test Manager PersonSoft]</i> <i>‘The initial approach was to develop the training materials based on standard COTS documentation provided by PersonSoft.’ [Director TestCo]</i> <i>‘I TestCo has raised issues regarding the use case ...I now know I’ll have to change my approach regarding documentation as TestCo are expecting at least a spec with each release ... we currently have no generic MAPS documents to provide to TestCo.’ [Business Analyst PersonSoft]</i>
<b>Aligning processes and practices</b> Alignment of processes was blocked by poor communication between actors.	<b>Managing resource availability</b> Resource shortfalls were endemic for all processes within PersonSoft. The project was unable to recognise this fully and to take corrective actions.	<i>‘I think PersonSoft themselves were under resourced and I still think they probably are we estimated the amount of effort else we wouldn’t have had problems that we had at IOC. You guys know the amount of money you put into it in the end was enormous far more than you expected.’ [Director HRMDepartment]</i> <i>‘...resources availability and respect of decided actions are still a problem.’ [Services Director SI]</i> <i>‘Is there any intention to ‘drip-feed’ the updated Use Cases back to us or will it be a Big-Bang approach?’ [Dept Manager HRMDepartment]</i> <i>‘I think G. may have under resourced this project. I remember the discussions with M. beg borrowing and stealing for what was the biggest defence project at that time.’ [Senior Business Analyst PersonSoft]</i>
	<b>Defining how the work is shared</b> The activities of TestCo (testing and training) and SI depended on open collaboration with PersonSoft and the agreement and sharing of common tools. This was a problem with PersonSoft who insisted (for example) on their own service tool being used until overruled by SI. Common tools, testing approaches and openness in collaboration occurred only slowly and only accelerated when serious problems with the PersonSoft software emerged.	<i>‘Are PersonSoft responsible for teaching TestCo testers how to create workflows, alerts etc using Sequence?’ [Senior Business Consultant PersonSoft]</i> <i>‘I’m a little concerned that we’re having to use both Mantis and Fogbugz to manage issues against the candidate release and probably going forward.’ [Senior Business Analyst PS]</i> <i>‘We have no knowledge for that ...most of them refers to very in-depth technical details for the implementation of COTS and APMS. There’s nobody else except PersonSoft that can document those points.’ [Training Consultant TestCo]</i> <i>‘We estimate that this would require approx. 200 pages (in addition to the 400 pages of the current document) which again is unrealistic to do at this stage of the project.’ [Training Consultant TestCo]</i> <i>‘...best solution for the project schedule is to build UC’s ONLY for requirements covered at IOC.’ [Project Manager PersonSoft meeting notes]</i> <i>‘...would expect the testers to extensively test the new enhancements and features implemented ... but not to do a full regression testing.’ [Technical Lead PersonSoft]</i>
	<b>Building the team</b> No serious effort was made to integrate the teams and to overcome the barriers	<i>‘I don’t think we made any serious allowance for our relationship with TestCo and delivering to them and to HRMDepartment I think we envisaged a relationship that was much more direct one between us and HRMDepartment.’ [Services Director]</i>

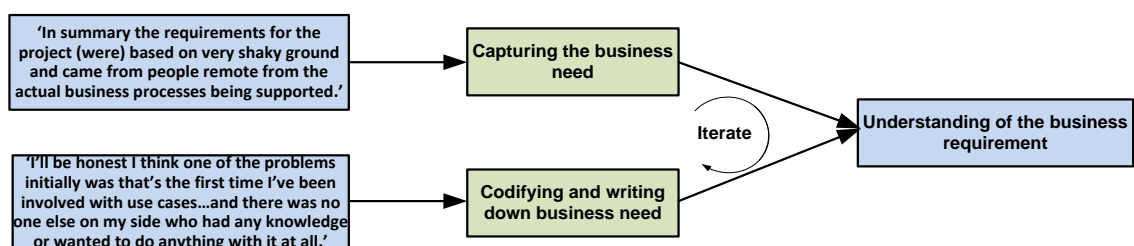
Theme (nodes)	First order concept clusters	Quotations
	that were erected by PersonSoft. This was partially a result of the underestimating of the effort needed for this project and vulnerability of PersonSoft to scrutiny of their processes and products.	<p>PersonSoft]</p> <p><i>'I did not receive so much support from our partners (SI, PersonSoft). I've carried on 'my war' alone. Only during the late autumn, 2011, when other documents were candidates for Agency refusal, things were changed and SI management focus was set in this direction, too.'</i> [Test Director TestCo]</p> <p><i>'I think once we started to take the lead a little bit more that's when it started to work good or bad it started to work. And that's when the relationship was ad hoc and TestCo started working a lot better.'</i> [Senior Business Analyst PersonSoft]</p>
	<p><b>Linking and aligning team</b></p> <p>There were problems in communication between members of the supplier's consortium (and to the buyers) due to project governance that emphasized control over the parties and their interaction. The physical distance between the parties also acted to block social interaction and informal channels of communication. The project team was fragmented and occasionally uncoordinated – this was not fully alleviated by the use of video conferencing.</p>	<p><i>'...I believe there is a major bottleneck in the flow of information communicated between TestCo and Agency and vice versa. This has resulted in misunderstandings of the work to be done and the client's expectations.'</i> [Business Analyst PersonSoft Report]</p> <p><i>Do you have time next week to meet up in Brussels with C. ...I discussed with him briefly the possibility of embedding our business consultant (you) with the TestCo guys supporting the testing of the product ...to form a more jointly organised TestCo PersonSoft team.'</i> [Project Manager PS]</p> <p><i>'PQA cannot have 20 days for unit testing a time box for example there is no time for this. There is quite some testing in the plan for TestCo for the integration and implementation testing of each time box built in as well!'</i> [Project Manager PS]</p> <p><i>'I would like to arrange a meeting with yourself and PersonSoft Software test manager to finalise the approach for testing and releasing builds to yourself and your team.'</i> [Senior Business Consultant PersonSoft]</p>
	<p><b>Integrating team processes</b></p> <p>TestCo had a view (proved right in the end) that the HRMSys application needed thorough testing including the core product. This was denied by PersonSoft and they did attempt to control this by direct control over TestCo work processes.</p>	<p><i>'The concept of time boxing the deliveries has been discussed with TestCo internally and a meeting will be planned over the next two weeks to agree and re-state the objectives (to align TestCo and PersonSoft thinking).'</i> [Senior Business Consultant PersonSoft Highlight Report]</p> <p><i>'... the test company TestCo starting off thinking that they must test everything including core product. It took quite some time to work together effectively and to get TestCo (to) test appropriately.'</i> [Senior Business Analyst PS]</p> <p><i>'Multiple handovers in the project (and many stakeholders) make for extended and complex communication.'</i> [Workshop Report PersonSoft DOC:INTERNAL-20090918]</p> <p><i>'I was very happy to give them full access to FogBugz - that is to a common project tool for HRMSys. So we all (as one team) could manage errors bugs etc. in one common environment.'</i> [Project Manager PersonSoft]</p> <p><i>'We discussed the process of software delivery and testing last week... The main purpose was to make the process of delivery much slicker and to start working as an integrated team.'</i> [Project Manager PersonSoft]</p>
<p><b>Building working knowledge</b></p> <p>Partner learning was effectively blocked throughout the IOC stage and compromised testing and training.</p>	<p><b>Adapting scope and task split</b></p> <p>During project execution even up to the final testing the task split (who is doing what) was still an item of negotiation.</p>	<p><i>'The basis of the waiver was the current COTS cannot provide the non-functional in the way described (especially windows browser functionality) or is part of the Core COTS that can only be changed during a major version upgrade.'</i> [Sales Support PersonSoft]</p> <p><i>'The story you provided until now is not working since the testing of some waived requirements failed.'</i> [Services Director SI Meeting note]</p> <p><i>'Please accept the following statement, on behalf of PersonSoft Software, in support of our formal submission for APMS Test Waivers to be applied...'</i> [Services Director PersonSoft Extract: DOC: LET/AL – 24/02/2012]</p>
	<p><b>Getting knowhow and knowledge</b></p> <p>As development proceeded knowledge requirements moved away from codified explicit knowledge to tacit knowhow.</p>	<p><i>'...we encounter lots of issues in Manager trying to check different actions described in the Use Cases...they are blocking the testing process. I can fully agree to work closely and to solve the issues - this will save time on both sides!'</i> [Test Director</p>

Theme (nodes)	First order concept clusters	Quotations
		<p>TestCo]</p> <p><i>'I cannot use a general description ... As stated below we need the following info to incorporate in CMP: features that are to be used, what is the workflow in case of an incident, access rights, custom fields and reporting capabilities.'</i> [Test Consultant 2 TestCo]</p> <p><i>'...what I really need is HOW PersonSoft is using the software (specific to HRMSys / customisations) not the user manual.'</i> [Test Consultant 2 TestCo]</p>
	<p><b>Enabling knowledge transfer</b></p> <p>Knowledge transfer processes remained very poor – including the ability to gain understanding to develop training programmes. Doubtful value of arm's length communication and knowledge sharing processes oriented towards using the application.</p>	<p><i>'They are coming over here to see us and get some help as they are a little lost. As normal there is very little here and I would like to ask whether it is possible for me to have a copy of any training materials you guys have created over there for the current application. Anything would be start!'</i> [Consultant PS].</p> <p><i>'I 've receiving a number of Mantis bug issues now I've looked at some of these issues it seems that once again these are training issues.'</i> [Senior Business Consultant PersonSoft]</p> <p><i>'I understood that it's very probable that you are not available for the whole week for the enabling sessions. Can you confirm this? If so, do you know if somebody from PersonSoft that can replace you?'</i> [ Test Director TestCo]</p> <p><i>'Any news about our planned meeting? Today we are available starting from 13:30 (London time) and for the following two hours or so.'</i> [Test Consultant TestCo]</p>

### 5.5 Dimension – Understanding the business requirement

Understanding the business need is essential for the successful development of an application. Two main barriers to this were observed, firstly, there was a lack of availability and access to key subject matter experts who could articulate the business requirement known problems in outsourcing success (TechRepublic, 2007). This resulted in a slowly emerging capturing of the business need. Secondly, the capability of the consultants at PersonSoft and TestCo to actually codify and write down the business *need* in a structured way and document the process. These two principal constructs and the link between the empirical data and the factors is shown in **Table 5-3** and an extract of the data model shown as **Figure 5-6** that illustrates the link from the data, via empirical themes, to the dimension category understanding the business requirement.

**Figure 5-6 - Extract empirical model understanding the business requirement**



One of the first problems was a lack of availability of appropriate experts to articulate the business processes. This was accentuated by project governance that strictly controlled access to the user community and a contract that assumed the requirements were settled and unproblematic. The access to the business users was critical as from an early stage the requirements were perceived as general and lacking in precision and *'insufficient to sustain a development activity'* [Services Director PersonSoft]. They had been developed some years earlier by a consultant working for HRMDept and based solely on the incumbent application, using the same application terminology, and on input from personnel, *'remote from the actual business.'* A situation that was well understood as the project manager at HRMDept noted, *'I wouldn't take user requirements that have been gathered five years earlier!'* PersonSoft and TestCo were restricted and *'unable to see real users'* and were *'talking to the wrong people'* to define the business processes, a situation that was flagged at an early stage.

*'...very challenging approach in which we expect to understand the drivers of the business processes from the end-users. They are the ones who can really define the operational sequences ... thus allow the Contractor to establish the relation between the individual SRS statements and the business flows.'* [DOC:MHR/SI/05-04-2011]

This problem of lack of business access was exaggerated by limited understanding within HRMDept as to what they wanted to achieve. HRMDept were a relatively small central HRM Department within DefOrg, responsible for HRM processes and policy but only indirectly involved in many of the business functionalities to be delivered. This meant that, to validate the design, they reviewed the documentation then referenced this to the incumbent application. This was problematic especially for completely new functional needs and in areas where the personnel at HRMDept had no experience of the business process being modelled.

*'I wonder actually asked for the ISAF stuff? I can't actually recall who in the business asked for this? – is probably symptomatic of the connection they had with the business. And they're not connecting with the business they can't tell us what they want.'* [Business Analyst PersonSoft]

Poor connection to owners of the business processes, limited understanding within

HRMDept, and the loss of active support by key figures acted to create a lack of understanding of what had to be achieved. This made the capturing of the requirement by PersonSoft and TestCo difficult.

*‘We were dependent on HRMDept to get our foot in the door but the door was never opened for us to actually do that.’ [Business Consultant PersonSoft]*

The process of defining the business rules took place during workshops between HRMDept and PersonSoft. These started just before the final completion of requirements validation and continued throughout the project and were only completed and ‘signed off’ just before user acceptance testing (UAT). Workshops were held with Agency, SI and PersonSoft to derive process maps of key functionalities by extracting this information from HRMDept. This was then set down in formal use-case and design documentation, and then circulated for review and amendment. HRMDept shaped and adapted the design documents from PersonSoft, added new details where needed, and a new version of the business requirement was created. This was based on the last workshop with corrections and new insights. PersonSoft then took this update of the design and adapted it based on their own knowledge of the application constraints and created another new version. This process of defining the design took several cycles before there was a convergence onto an acceptable compromise between the parties. However, this iterative process of design definition meant that the actual configuration of the software had started well before the design had been finalised and this resulted in major gaps between delivered software and the final design specification. And this is what largely contributed to the rejection of the software at final acceptance.

*‘We started configuring before the design had really grounded out in any sort of detail and ... when it was we did that quite late it had to change again and this really basically screwed the development process up.’ [Project Manager HRMDept]*

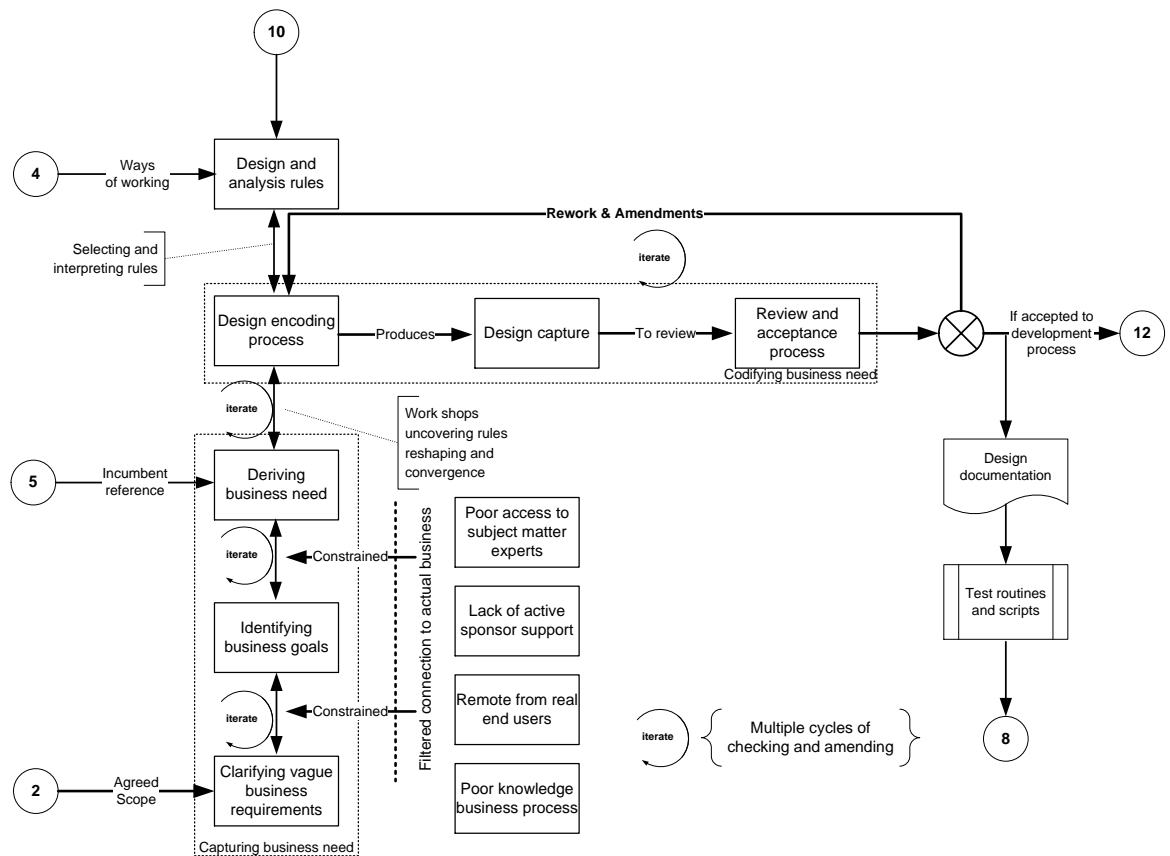
The second major issue that was observed was a resources and capability shortfall in the definition of the business processes, particularly in the way these had to be documented to a specific standard (UML2) imposed by the contract. It was not just a lack of access to subject matter experts but also a capability problem. PersonSoft had to adopt an alien and completely new design and development methodology.

Furthermore, neither HRMDept nor PersonSoft had any expertise in the development of the Use Case Documentation. This was the defined design standard for HRMSys.

*' (The) Use Cases and a formal documentation that was required within the project were completely new to PersonSoft and had never been encountered before.'* [Business Analyst PersonSoft]

This posed two learning challenges, firstly, to understand the business processes being modelled in the application, and secondly, once captured, to represent these in an unfamiliar standard. This implied that, as well as including amendments to the design from the business workshops, PersonSoft also had to amend the actual process and sequence diagrams that modelled the design. Although there had been some training at PersonSoft usage was still embryonic within the HRMSys team. Therefore there were two embedded adaption processes occurring during the design phase, firstly, PersonSoft and HRMDept creating then converging on a design that matched capabilities to business need, and secondly, learning and adapting to a new design approach. In summary as a result of these two characteristics of the design process, the lack of access to expertise, and the enforcement of unfamiliar processes and documentation standards, the design documentation was too late to drive the software creation process. They were also strewn with errors and omissions, insufficient to drive testing, and unfit for purpose as a baseline reference. As a consequence, despite a large amount of effort this activity barely delivered anything that was used within the project to drive development.

A simplified process model of the interaction between the actors for this dimension is shown as **Figure 5-7**. Each of the blocks in this process diagram represents a first order empirical cluster shown in **Table 5-3**, the relationship between them and the grouping around dimension categories. The two main related aspects observed were the continuing cycles of attempts to discover and document the business processes adequate to drive development, and the very limited access to subject matter experts who understood the detail of the business processes. These problems were accentuated by poor executive sponsorship, as key players took a back seat, and a lack of experience within PersonSoft in using the contracted design methodology.

**Figure 5-7 - Process outline understanding the business requirement**

Source: Author

**Table 5-3 - Dimension understanding of the business requirement**

Theme (nodes)	First order concept clusters	Quotations
<b>Capturing business need</b> Understanding of the business need limited by poor access to knowledgeable experts in the business process being modelled.	<b>Deriving business need</b> There was a major shortfall in the ability to acquire detailed business process knowledge. Software was developed based on fundamentally inaccurate understanding of what was needed.  <b>Overcoming poor requirements definition</b> Requirements were developed as lists of needs/wishes and there was a lack of insight into the dynamics of the underlying business processes. Requirements derived from existing functions in the incumbent were understood new functional areas outside of experience were poorly understood.	'...our requirements were changing and one of the things I found frustrating was I was coming up with the new requirements for Afghanistan and all I was able to do was to talk to people out in Afghanistan over the phone.' [Project Manager HRMDept] 'Bear in mind that this use case was agreed to be done at risk due to time constraints.' [Analyst PersonSoft Meeting Note] '...that was annoying because we were coming up with these requirements but um they weren't brilliant. They did change (as) they were being developed...And you only found out what they really wanted when you went there...and that exposed a gap.' [Project Manager HRMDept] '...many issues of detail of the process or arrivals and departure are missing or in error.' [IV&V Consultant] 'I think it's one of the key problems with many projects is that you have users who know their business you have IT people who know how IT works and it's getting the bit in the middle of the hybrid people who can understand the business but also know how to apply the IT.' [Director HRMDept] '...had drafted an email before the meeting yesterday to indicate that HRMDept had discussed the CE-PE link with DefOrg and uncovered DefOrg has not finalised the CE-PE link procedures: some key areas are still uncertain and maybe it is too early for SI to spend any further time this function.' [Project Manager Agency]
	<b>Clarifying vague business requirements</b> The way the requirements were expressed followed poor protocol and	'I'd like to pick up on one is the statement of requirements because I think the way that it was put together some of the serials were at such a high level of interpretation you could

Theme (nodes)	First order concept clusters	Quotations
	approaches, were not 'atomic' and mixed up application behaviours and business requirements.	<p><i>argue quite successfully, I think it was argue quite successfully, it could be one thing or another.</i> [Services Director PS]</p> <p><i>'In summary the requirements for the project (were) based on very shaky ground and came from people remote from the actual business processes being supported.'</i> [Business Analyst PS]</p> <p><i>'These requirement serials were around three years out of date and in general poorly formed; being imprecise, not atomic and in some cases statements of intent not requirements.'</i> [Project Manager PS]</p> <p><i>'...those people who were defining the requirements did not know sufficiently robustly well what the requirement was in order to sustain a development activity.'</i> [Services Director PersonSoft]</p>
	<p><b>Remoteness from real end users</b></p> <p>The owners of the functional requirements, HRMDept, did not control many of the business processes they were responsible for specifying in the HRMSys project.</p> <p><b>Unclear boundaries to business</b></p> <p>There was some evidence of using the HRMSys to gain control over business processes outside of remit of HRMDept. Their ideas were not accepted by the broader business community.</p>	<p><i>'...there are some gaps that DefOrg need to take action on ...We may need to arrange access to real users as some of these are at quite a level of detail - this also needs to be discussed at the meeting.'</i> [Project Manager PersonSoft Report]</p> <p><i>'Purchaser side: engagement with the right key users during use case modelling phase at the beginning, a lot of development was done before the use cases were prepared, work going on at risk... CE side ISAF knowledge in HRMDept was not strong enough.'</i> [Development Director PersonSoft]</p> <p><i>'Clear strong involvement of ISAF teams was missing, now there is a clearer strong involvement and ISAF users will be in the Lisbon meeting... ISAF element (was) driven by Brunsum, but their ideas don't necessarily match the reality of in theatre use.'</i> [Development Director]</p> <p><i>'very few features from all developed were used by DefOrg. This means that having no real feed-back we could not detect users' the real needs.'</i> [Test Director TestCo]</p>
	<p><b>Poor access to subject matter experts</b></p> <p>HRMDept were unable (perhaps unwilling) to acquire subject matter experts to explain and demonstrate their business processes. Process modelling was based on fragmentary business understanding by those remote from the actual process.</p>	<p><i>'It must be said that (Name) and his team did not in my opinion have full understanding of their business processes they didn't know we were talking to the wrong people.'</i> [Services Director PersonSoft]</p> <p><i>'And the other thing that I wouldn't do, and I did run that four-day workshop with user representatives, I wouldn't take user requirements that have been gathered five years earlier. Particularly when DefOrg like everywhere else with money problems and everything is changing by the minute.'</i> [Project Manager HRMDept].</p> <p><i>'I know (name) quite well and he doesn't, or didn't at that time, a quarter of the understanding they had on the actual business processes that were supposed to be delivered.'</i> [Sales Director PersonSoft]</p>
	<p><b>Lack of active sponsorship</b></p> <p>The core sponsor and initiator of HRMSys due to illness and imminent retirement stepped back from the day-to-day involvement in the project.</p>	<p><i>'The reason I question that is I know (name) quite well and he doesn't, or didn't at that time, have a quarter of the understanding (name) had on the actual business processes that were supposed to be delivered'</i> [Sales Director PS]</p> <p><i>'...everybody knew I was going and there's always that issue of much of the plans you're doing the deliveries were after you left and making then decisions and driving things for things you could not then effect and couldn't take responsibility for was one of the issues.'</i> [Director HRMDept]</p> <p><i>'I think your active engagement [HRMDept Director] in forcing through a view that version 6 IOC form was not perfect, would have been adequate, it was an interim solution and my problem with it internally with PersonSoft is that it took so much to get through that closing stages of IOC.'</i> [Services Director PS]</p> <p><i>'Can be honest I never knew which side (Name) was going to be on. One minute he was shouting they must have done that... But the next minute he turnaround saying they've got time just leave it.'</i> [Project Manager HRMDept]</p>
	<b>Lack of focus on the business goals</b>	<i>'Let's say was management's fault that we will focus probably</i>

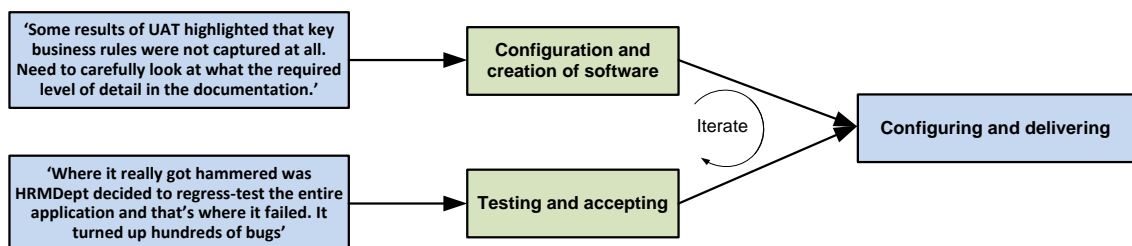
Theme (nodes)	First order concept clusters	Quotations
	Overall project was driven to meet the financial and time goals and little attention on the outcomes needed.	<p><i>too much on time and hitting deadlines and worrying about damages rather than what we had to deliver.'</i> [Project Manager HRMDept.</p> <p><i>'A number two was what are you actually trying to achieve? Do you need an upgrade? Do you need to deploy this to Afghanistan? Do you need CE-PE posts? I think at the very beginning that's what they should have done instead of going out and collecting all these requirements dumping into a contract and saying supplier crack on.'</i> [Senior Business Analyst PersonSoft]</p> <p><i>'What we really lacked was somebody on the other side, your side, who knew what you wanted to achieve. Not so much how it was going to work this is what we want to do. And somebody on your side who knew about the business.'</i> [Services Director PersonSoft]</p>
<b>Codifying business need</b> There was a lack in capability and the skills needed to document business processes in the manner demanded by the contract.	<b>Agreeing design and analysis rules</b> Mismatch to how the project was contracted and the optimal design approach for uncertainty in business requirements.	<p><i>'I have an intellectual problem with a fixed price project, a fixed price contract working in an agile way. Because agile takes a degree of flexibility on both sides. A fixed price project undermines all that. You must deliver to these specifications and that's it. And that's what we were trying basically to do.'</i> [Services Director PersonSoft]</p> <p><i>'We attempted a waterfall approach with – agile is good for when the requirements are not quite clear.'</i> [Project Manager HRMDept]</p> <p><i>'Many of the remarks ... are fine but we do seem to have strayed away from the original intention ... which was to handle this as reference data - most of the remarks seem to me to be related to new requirements.'</i> [Project Manager PersonSoft]</p> <p><i>'Read what he says and get back to me look like a redesign on the fly is going on.'</i> [Technical Consultant PersonSoft]</p> <p><i>'Review process around documentation and analysis needs to be direct between HRMDEPT and Allocate while still ensuring formal review and signoff occurs at the project management level with SI and AGENCY.'</i> [Development Manager PersonSoft]</p>
	<b>Faulty design and encoding process</b> The approach to using Use Cases was questioned due to a perceived mismatch between the desire for a COTS package and an imposed design technique that implied a new application.	<p><i>'...the Use Cases were too broad and not very consistent. But, hey! this is somehow natural – during the development / testing activities such artefacts should be improved. No big improvement was done on them.'</i> [Test Director TestCo]</p> <p><i>'And we got side-tracked as well with these damn use cases they were never used you know. And at the time F. insisted on them as a deliverable and Angela was involved in all of that and it was just a waste of resources.'</i> [Director HRMDept]</p> <p><i>'I'll be honest I think one of the problems initially was that's the first time I've been involved with use cases...So I had a learning lesson and there was no one else on my side who had any knowledge or wanted to do anything with it at all.'</i> [Project Manager HRMDept]</p>
	<b>Design capture process was new</b> Inexperience with using the specific techniques required in the contract (from both PersonSoft and HRMDept) led to multiple cycles of correction just on the actual layout and format of the required design approach.  <b>Formalism clashed with prior history</b> Lack of experience with the technique per se led to major elements of the business process rules and exceptions being missed. Limited experience and lack of availability existing documentation caused major resource problems.	<p><i>'This meant that requirements took a long time to write down and this was exaggerated by the need for PersonSoft to use particular documentation approaches and especially use case.'</i> [Director HRMDept]</p> <p><i>'My involvement was in some of the use cases in trying to turn some other use cases around because there were issues with quality of documentation. With views stuff like that there have been lots of pushback on the use cases.'</i> [European Service Manager PS]</p> <p><i>'As mentioned before: the big problem is CE-PE links is something new and to a degree we are having to make up the rules, procedures etc. All we can do is make a few assumptions and work on that.'</i> [Project Manager HRMDept]</p> <p><i>'And one thing that crucified us was all documentation and formalism I don't have a problem personally but it was such a difference from the way PersonSoft work within before then couldn't find any documentation of anything.'</i> [Senior Business Analyst PersonSoft]</p>

Theme (nodes)	First order concept clusters	Quotations
		<i>'And even when it became around to do the install for the factory acceptance test is seen to be much more formal and a surprise even to U. All seemed very formal and also very very new.'</i> [Project Manager PersonSoft]
	<b>Review and acceptance of the design delayed</b> The time allowed for design capture was exceeded and increased the pressure to start configuration before the design was finalised. Poor and incomplete design, in content and presentation, led to an emergent design and in configuration and technical documentation much rework and retesting.	<i>'I think if I'm being honest that is the main issue writing the use cases doing the code work before the design has been agreed fine we can handle that we should have been adaptable to a certain extent.'</i> [Business Analyst PersonSoft] <i>'Due to the time constraints, I think we can start work on some of the functionality even before getting the use cases...we can then utilise the use cases to refine our final delivery and output.'</i> [Senior Technical Consultant PersonSoft] <i>'HRMDept is not convinced that the Use Cases are at a sufficiently mature nature to be formally reviewed.'</i> [Manager HRMDept] <i>'Unfortunately from (name)'s perspective he had to start early and I admitted I put pressure on him and the others because of the deadline deadlines we had to get something to start.'</i> [Project Manager PersonSoft]

## 5.6 Dimension – Configuring and implementing

The core of the delivery of the project was the preparation and configuration and creation of software, creating supporting documentation and the testing and acceptance of the software technically by Agency and functionally by HRMDept. These two principal constructs and the link between the empirical data and the factors is shown in **Table 5-4** and an extract of the data model shown as **Figure 5-8** that illustrates the link from the data, via empirical themes, to the dimension category configuring and implementing.

**Figure 5-8 - Extract empirical model configuring and implementing**



Software configuration, the adaption of the COTS baseline product to suit actual project requirements, started within three months of the project initiation. This was based on assumptions and a broad understanding of the requirements covered in the

MAPS baseline model but well before the design Use Cases had been finalised<sup>8</sup>. The development of the design was subject to delays (see section 5.5 ) and the final acceptance of the Use Cases was after system testing and just prior to the user acceptance testing (UAT). This meant configuration had started approximately eight months before the final design was ‘signed off’. This situation was exacerbated by problems in the review and acceptance process and design documents that went through ‘so many amendments and modifications it was ridiculous’ [Business Consultant PersonSoft]. All project documentation supporting: testing, design, configuration and even project reporting were subject to continuous review and amendment and as a result delay. This situation may have been acceptable in the old ways of working when there were only two parties involved but the failure to agree a final design cascaded throughout the project and created problems in software quality, exposed major gaps in testing procedures, and resulted in failings in expectations and rejection of the delivered software. Both PersonSoft and HRMDept had a working assumption that PersonSoft would react as they always had in the past and fix any gaps that occurred ‘on the fly’, but this was not possible within the new formal structure of HRMSys.

*‘I think if I’m being honest the main issue writing the use cases (was) doing the code work before the design has been agreed fine we can handle that we should have been adaptable to a certain extent.’ [Business Analyst PersonSoft]*

Configuring the software had begun early, triggered by an approaching contracted deadline for the delivery of a first release that fell six months after start. There were multiple continuous releases of the software. From the first release (αIOC) until the final accepted release (version 8-IOC) - there were twelve major patches to the software and six emergency or minor releases. This was symptomatic of a problematic development approach. Each new version of the software required an adapted document set, a baselined formal release, updated installation manuals and scripts, and also had to be fully regression tested<sup>9</sup> on the reference system. Following testing a list of bugs and deficiencies triggered fixing of the problems, more regression

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<sup>8</sup> Use Cases are a process modelling technique that defines how the application interacts with users when delivering the required functions specified in the contract.

<sup>9</sup> Regression testing confirms that the software still performs as expected and nothing has changed due to the software update.

testing, and then a re-release. It was observed that software fixing during testing and acceptance was iterative, using just the list of deficiencies as a guide, and then trying again to get it past the testing process.

Gaps between the design documentation and already configured software meant continuous re-work. This was exaggerated as the business requirements and design definitions were emerging piecemeal over time rather than as coherent work packages and *'...when new ideas were elaborated this meant things had to be changed or even completely deleted.'* [Project Manager HRMDept] In the interaction between the design and configuration processes a cycle was observed where design documentation, representing the model of the system, emerged and guided development that in turn constrained and shaped the design process but only in a partial way.

There was a fundamental mismatch between documentation, design and the configuration and major problems in the core software that had not been trapped earlier. This meant the testing of HRMSys threw up many old issues that were well known to PersonSoft but had been ignored. There were many warnings, from TestCo, pointing out these shortfalls and problems within the core product that were becoming apparent, but these warnings were derided as unimportant or attributed to lack of understanding of the product.

*'Yet another 'the world is ending' ... He is painting the wrong picture in this email...essentially the system test is not blocked etc. bugs are bugs and are to some degree expected but there was no critical issues raised so far.'* [Business Analyst 2 PersonSoft]<sup>10</sup>

HRMDept and PersonSoft were used to a situation where the final adjustment to the application, including embedded rules and processes, could be done when the completed software was ready. However the defined process emphasised a staged 'water-fall' development where each step had to be completed before moving onto the next. Furthermore, standards, plans and testing routines were specified and documented in the contract and were subject to test and confirmation that they had been followed. In the case of HRMSys each software release had to be validated,

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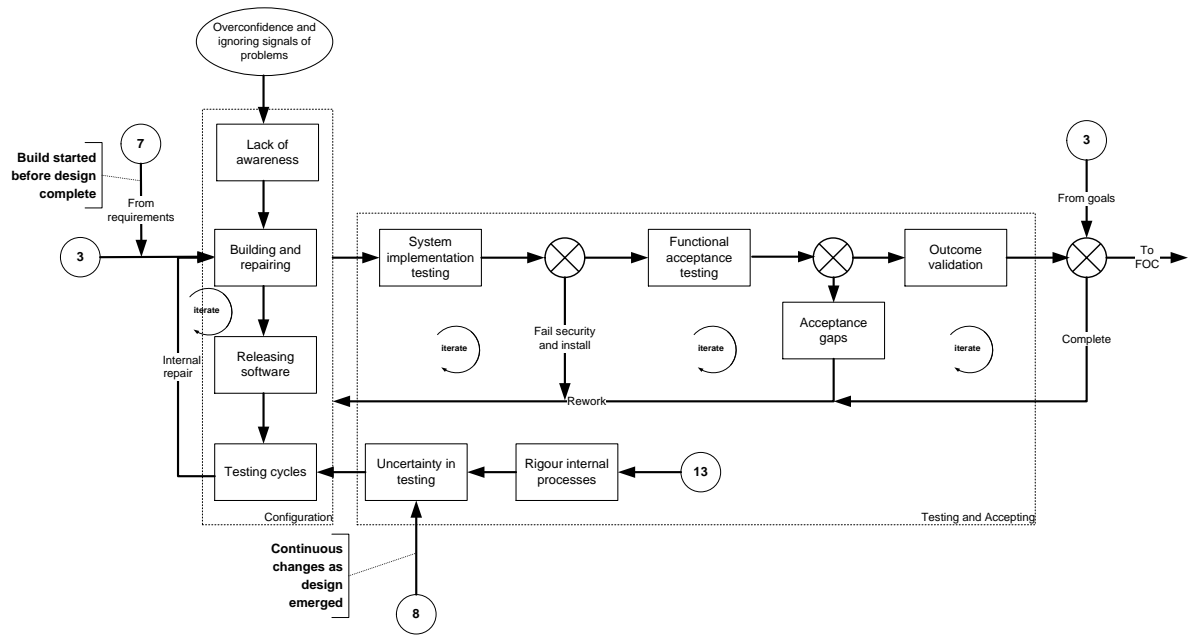
<sup>10</sup> In fact this actual delivery was rejected by Agency due to deficiencies.

installed and tested on the reference system, tested for security and finally accepted for functionality by HRMDept. This meant a substantial extra load '*on an under resourced project*', especially for PersonSoft, HRMDept and TestCo. This added additional delays to the delivery as any fault discovered had to be repaired, and again put through the validation process. This was a particularly difficult problem when critical faults and gaps emerged very late in the IOC stage resulting from software rejection by the end users.

The configuration and delivery of the software, and related artefacts, was a confrontation between the traditional ways of delivery practised at PersonSoft, across all of its major markets, and was characteristic of a small entrepreneurial company working closely with its clients adapting a bespoke software application. The development of HRMSys was strictly formal, and guided by written standards, rules and procedures, and within an institutional context of a public sector bureaucratic organisation that assumed a COTS packaged development. Delivery was iterative in the sense that configuration was driven by rules and schemas and converged on the final goal by a process of responding to the gaps exposed by testing. Configuration continued until the testing was passed or the testing obstacle removed by, for example, eliminating by agreement a problematic function from the project.

A process model of the interaction between the actors for this dimension is shown as **Figure 5-9**. Each of the blocks in this process diagram represents a first order empirical cluster shown in **Table 5-4**, the relationship between them and the grouping around dimension categories. The two main related aspects observed were the continuing cycles of repairs and retesting caused by poor configuration processes enabled by the limited availability of design documentation in the early stages of development. Configuration and creation of the system was started before the design was finalised – this was a fundamental mistake.

Figure 5-9 - Process outline configuring and implementing



Source: Author

Table 5-4 – Dimension configuring and implementing

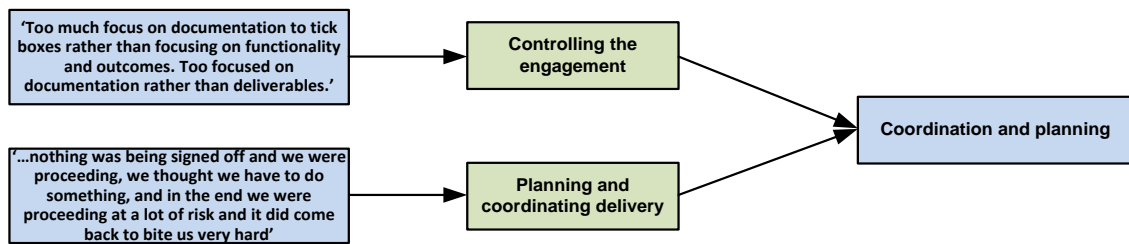
Theme (nodes)	First order concept clusters	Quotations
<b>Configuration of software</b> Poor quality development approaches and time pressure acted to create a delivery with many errors.	<b>Building and repairing software under time pressure</b> Problems with the software build emerged early on especially on the number of fixes that were needed within the time allowed. The project milestone approach, emphasised by SI, concentrated on time line conformance and dates promised to Agency contributed to poor output quality.	<i>'We have to deliver a release to TestCo on 1st August and I'm getting a little concerned that we only have three weeks to do this and I've not seem/reviewed any of the ISAF work yet, which of course means this hasn't been through a round of testing and fixes.'</i> [Senior Business Analyst PersonSoft] <i>'A lot of effort has gone into the patch 2 release; in this patch we have addressed a total of 58 issues from Fogbugz. I have also worked closely with the TestCo team to try to prioritise where possible any issues that they deem as "Blocking".'</i> [Technical Lead PersonSoft] <i>'Once again, we are reiterating that due to all the problems mentioned above, current release (the so called Release Candidate) is NOT acceptable for System Test and Training Materials preparation.'</i> [Test Director TestCo] <i>'This documentation is proving a pain - pass permits is complex although 100 comments is a lot and I thought it had already been reviewed by Agency.'</i> [Project Manager PersonSoft]
	<b>Lacking of awareness emerging problems</b> There were long delays in the design being finalised, continuous rework of the application from bugs and deficiencies, testing was a problem and the documentation was delayed. However until quite late during testing reporting on progress was positive to senior management - there was a filter on this strong evidence that the project was going astray. <b>Selective attention to problems</b> When action was taken it was on non-compliance to the schedule and limited attention to the root causes of failure in the design and development process and	<i>'My assessment is that progress looks v. encouraging in the config area, and that we now need to focus on completion of the integration piece and killing all the bugs.'</i> [Services Director PersonSoft] <i>'...have now very successfully driven verification stage of this Project to a point where we can be much more confident of meeting both the current DefOrg end user expectations.'</i> [Services Director PersonSoft Note to CEO PersonSoft] <i>'...he is confident he can meet the delivery schedule.'</i> [Project Manager PersonSoft] <i>'We received a second notice of delay about the incompleteness of deliverables ... inconsistencies and faults in documentation for FAT... as a result the FAT was stopped.'</i> [Letter from SI to PersonSoft DOC:LET-SI09122011] <i>'...hardly any of the documents were signed off early on. Minutes of meetings we never signed off. There were so many</i>

Theme (nodes)	First order concept clusters	Quotations
	in poor collaboration.	<i>amendments and modifications to everything it was ridiculous.'</i> [Project Manager HRMDept]
	<b>Emerging gaps in output appeared</b> Many major problems with software bugs, documentation errors, and installation routines emerged late or during the testing of the product.	<i>'Some results of UAT highlighted that key business rules were not captured at all. Need to carefully look at what is the required level of detail in the documentation.'</i> [Development Director PS] <i>'Taking a look only in Manage ISAF, I want to say that there are 225 comments from IVV Some of them are awaiting clarifications or modifications to be done by A.'</i> [Test Consultant 1 TestCo] <i>'Following a progress review today we will need to undertake some concentrated bug fixing on the HRMSys release to ensure we can release a high quality product on schedule.'</i> [Services Director]
	<b>Poor quality exposed</b> Poor quality of all aspects of the application development, testing and documentation drove repeated correction cycles.	<i>'Yeah indeed it was really noticeable I've looked back over it and three or four or even more attempts to get things right and then in the end not doing it right if the truth be known.'</i> [Project Manager HRMDept] <i>'...have spent the entire morning reviewing only the diagrams. There were quite a few comments on them. I actually also created an example of a correct use case for them. It might be good to send my comments so they don't keep making the same mistakes.'</i> [IVV consultant Agency] <i>'If this feedback is correct, and the few controls that I made seem to confirm it, the quality of the Use Case specification is still not at the right level: 100 comments, 50% at severity levels 1 &amp; 2.'</i> [Services Director SI]
<b>Testing and accepting</b> The application and supporting documentation were poorly prepared for final buyer testing and multiple errors were exposed.	<b>Uncertainty in testing</b> The final design was very late and restricted access to the configured software coupled with multiple releases exposed a gap between testing procedures and the delivered software. <b>Restricted time to test due to time pressure</b> Time pressure and imposed deadlines restricted the time allowed for thorough testing to take place. TestCo were always under pressure to release early.	<i>'I had no control and I was relying only on that papers that were supposed to attest that particular requirements are satisfied by application in similar conditions. I've never heard of such papers, nor seen them.'</i> [Test Consultant TestCo]. <i>'Remember Unit Testing? No activity was done by PersonSoft in this direction. I should not be accepting any software release as long as a given code coverage percent was not satisfied.'</i> [Test Director TestCo] <i>'Regarding the Beta Release, from the functionality point of view... At a glance, there is a bunch of features that impact the Testing activities if they are going to be delivered in the Release Candidate.'</i> [Test Director TestCo] <i>'This is not to say that the functionality does not exist; to the contrary, but how you prove it based on the present regime of test procedures makes it unlikely at present.'</i> [Department Manager HRMDept]
	<b>Lack of internal rigour</b> Delivered software and documentation was demonstrating substantial errors. Some were trapped by internal testing – despite this testing very large errors were getting through. Rigour in all testing processes within the consortium was limited.	<i>'It seems that some very silly bugs have got through this process - the QA person we were given seems very inexperienced in both QA processes as well as MAPS specifically and did not follow the agreed process.'</i> [Project Manager PersonSoft] <i>'More bugs and blocking points were discovered by the development team and solved "on the fly".'</i> [Development Consultant1 PersonSoft] <i>'...currently I have severe doubts as to the chances of successful completion of FAT and SAT that contractually prove that the functionality to be delivered at IOC is present and working correctly.'</i> [Department Manager HRMDept Letter to SI]
	<b>System implementation testing</b> Factory acceptance test (FAT), system acceptance testing (SAT) and security testing went through multiple cycles of repair and retest. <b>System testing focused on complete accuracy</b> Testing the system checks the application technically for operational and security	<i>'Basically the installation was finished 80% on Brasov test environment. Manager / Optimiser are working - but still some errors are visible in the application, while different tests are done, due to incompleteness of the installation.'</i> [Test Director TestCo Project Note] <i>'I clearly remember that I was arguing with PersonSoft that we are not prepared for FAT. Lots of places where manual interaction was required during the HRMSys software installation process. Still, we went there in Belgium, and based</i>

Theme (nodes)	First order concept clusters	Quotations
	<p>compliance. Documentation, including the installation steps (scripts), was tested for complete compliance to contract and accuracy. Security tests for resilience against cyber-attack or hacking were also carried out.</p>	<p><i>on the old installation procedures we ‘managed to fail’.</i> [Test Director TestCo]</p> <p><i>‘The feedback on the testing on the ‘patch 6’ release is not such that we can go ahead with the implementation plan and start installation activities next week. ITV tests were not successful and there are several issues remaining after the testing activities on the Reference System and on the Training System and a number of system requirements are not met.’</i> [Project Manager Agency]</p> <p><i>Security test failure report NCSA SMD/CQM Independent Test Report [DOC: PCD-AG/30042012]</i></p>
	<p><b>User functional testing failures</b></p> <p>The HRMDept during its test of the application decided to regression test right across the application including the already delivered ‘incumbent’ baseline. This included functions that had been in service (used) for many years, and outside the requirements for the project, but contained previously tolerated bugs and deficiencies.</p> <p><b>A gap between the design and the delivered application arose</b></p> <p>A gap between final design and delivered software was exposed during testing and resulted in multiple deficiencies being reported.</p>	<p><i>‘Where it really got hammered was HRMDept for whatever reason decided to regress-test the entire application 6.3 to 6.4 and that’s where it failed. It turned up hundreds of bugs ... we baselined based on 6.3 and R. looked across the table and said don’t worry about that it’s in service let’s do it.’</i> [Project Manager PersonSoft]</p> <p><i>‘Yesterday during the PCR that started with the review of the deficiencies DefOrg showed us the results of their UAT regression ... The result was disappointing: there are 75 deficiencies left ... global result nevertheless is negative and installation on the production environment is absolutely out of question.’</i> [Project Manager SI]</p> <p><i>‘Will call tomorrow re the UC layer as this is important - we cannot allow the UAT to stand or fall on whether the UC works’.</i> [Project Manager PS]</p>
	<p><b>Outcomes achieved fell behind goals</b></p> <p>The project did not achieve its IOC goals in terms of functional deliveries or integration. The substantive part of the new requirements that caused the majority of design delays was not deployed.</p>	<p><i>‘... only 1/3 of the total requirements included in IOC scope were satisfied in IOC. All other were waived. My task here? I had no control and I was relying only on that papers that were supposed to attest that particular requirements are satisfied by application in similar conditions. I’ve never heard of such papers, nor seen them.’</i> [Test Director TestCo]</p> <p><i>‘IOC given it’s a fairly small upgrade to an existing system has taken 18 months so highlights that we may not be doing things right.’</i> [Development Director PersonSoft]</p> <p><i>‘...everybody forgets all of the interfacing the integration parts which the system integrators brought to the party none of that was delivered at all in terms of the project.’</i> [Project Manager PersonSoft]</p>

## 5.7 Dimension – Coordination and planning

Coordination and support of the HRMSys project delivery was a project management function provided by System Integrator (SI). This consisted of two related tasks, firstly, controlling the engagement, managing the relationships and policing the rules in line with the strict governance of HRMSys, secondly, planning and coordinating delivery by integrating the actions of the supplier organisations delivery processes. These two principal constructs and the link between the empirical data and the factors is shown in **Table 5-5** and an extract of the data model shown as **Figure 5-10** that illustrates the link from the data, via empirical themes, to the dimension category configuring and implementing.

**Figure 5-10 - Extract empirical model coordinating and planning**

SI had no substantive output deliverable but set goals for sub-contractors, produced project control documentation in line with the contracted standards, managed project meetings and reports, and was responsible for day-to-day interaction with the buyers. All deliverables produced by PersonSoft and TestCo were subject to formal review by SI before release to Agency. Agency would then review outputs for quality and technical compliance passing on these for functional review by HRMDept.

*'The official software release to DefOrg will come only from SI and not from PersonSoft.'* [Services Director SI]

Even when on-site direct contact between PersonSoft and HRMDept was allowed it was normally with SI and Agency in attendance. The rules of engagement, written into the contract, specified that the primary interaction was between Agency and SI. In project control meetings questions and clarifications, and formal contractual matters, passed strictly from Agency to the 'Contractor' SI. Sub-contractors were initially envisaged *'to be invisible to DefOrg'* [Sales Director SI], and even when attending control meetings all questions went via the contractor even for technical matters outside of SI's competence. The inclusion of a formal channel of communication that interjected Agency and SI between PersonSoft and HRMDept extended the reporting lines and added to delays and confusion.

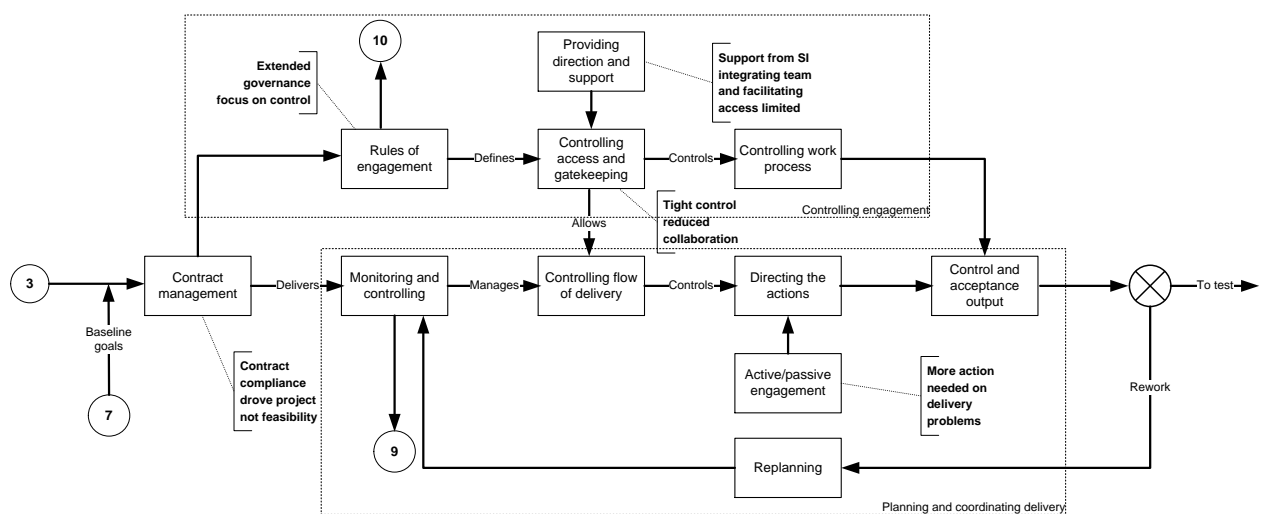
Coordinating the delivery process was the principal task of SI and a plan and schedule was created that simply replicated the contracted delivery dates. This plan set time-bounds within which the sub-contractors had to deliver their components. This plan was not effort driven or substantially changed after the change in scope. The imposition of a top-down directed schedule meant that an emphasis was placed on meeting the milestones above quality. This particularly placed stress on PersonSoft who were broadly under-resourced and continuously fell behind on deliveries.

However, Agency would not permit adapting the schedule and held a strictly compliant approach despite growing evidence of deviation from planning.

Overall project management and support was perceived by PersonSoft, HRMDept and TestCo as poor, with very little effective control exercised over Agency or the sub-contractors, and there was no real linkage made between required efforts to the scheduled time-line. Setting targets consisted of giving the date and the required output to be achieved. Overall delays and quality issues in design, development and software configuration proved almost intractable and contributed to a continuous adaptation of the schedule that SI had to justify to Agency.

A process model of the interaction between the actors for this dimension is shown as **Figure 5-11**. Each of the blocks in this process diagram represents a first order empirical cluster shown in **Table 5-5**, the relationship between them, and the grouping around dimension categories. The two main related tasks were observed; the control of the interaction between suppliers and buyers, and planning and coordinating deliveries. Overall the SI role was perceived as passive and the lack of clear oversight of the process of the delivery meant problems were only sensed at the time the deliverables were due on the schedule. This meant, from the SI perspective, problem solving was always reactive to events and solutions/corrections often had the feel of fire-fighting.

**Figure 5-11 - Process outline coordination and planning**



Source: Author

**Table 5-5 – Dimension coordination and planning**

Theme (nodes)	First order concept clusters	Quotations
<b>Controlling the engagement</b> The consortium ways of working and interaction was controlled by the prime contractor SI.	<b>Managing the contract</b> SI managed the contract based on compliance to delivery deadlines and delegated day-to-day control of the delivery to PersonSoft and TestCo - who were not an integrated team. Limited attention to was spent on outcomes particularly on problem solving to manage project feasibility.	<i>'...there didn't seem to be that level of communication between yourselves and SI one got the impression from SI that they weren't particularly concerned. And if you spoke to them about any of the problems which we knew we had and discussions on use cases or anything like that they didn't seem bothered.'</i> [Project Manager HRMDept] <i>'Contracting, risk that someone in Agency will say no to something that HRMDept and Contractor agree is the correct outcome.'</i> [Development Manager PersonSoft Meeting note lessons learnt] <i>'Too much focus on documentation to tick boxes rather than focusing on functionality and outcomes. Too focused on documentation rather than deliverables.'</i> [Development Manager PersonSoft]
	<b>Policing rules of engagement</b> SI policed their control by managing the flow of the output to the buyer via themselves as intermediary.	<i>'As the results of these system tests were unacceptable I won't submit this report yet as such to DefOrg, because it would endanger our discussion of tomorrow with them.'</i> [Project Manager SI] <i>'All the documents we prepare together must be confidential till SI decides to publish them.'</i> [Project Support SI] <i>'We've gone through this presentation we won't present this tomorrow during the PCR while all the consequences are not clear to us.'</i> [Project Manager SI] <i>'...we'd like to see in advance what you will demonstrate during PCR. This first review is really mandatory before we proceed to face to customer.'</i> [Project Support SI]
	<b>Controlling access and gatekeeping</b> Project communication lines were extended and Agency and SI imposed as intermediaries. Direct communication between PersonSoft and HRMDept in initial stages was curtailed.	<i>'And I think all the way through the project if I'm perfectly honest I think that the big problem we had was the two organisations between ourselves. In between HRMDept and PersonSoft.'</i> [Project Manager HRMDept] <i>'Reporting lines need to ensure there is direct communication between PersonSoft and HRMDept but also protect project management and contractual needs... (review) before escalation for signoff of final doc at project management level.'</i> [Development Manager PersonSoft] <i>'...where you definitely got caught out is that that you became almost fourth remote, third remote, from the user there was us who had to feed everything through the agency who fed it through SI who fed it to you.'</i> [Director HRMDept]
	<b>Controlling Work Processes</b> The integration of work processes between the consortium members to ensure effective delivery was limited.	<i>'I'm still expecting the weekly test report. Concerning the negative feedback from HRMDept about test procedures, please come back with a recovery plan.'</i> [Services Director SI] <i>'Hello Guys, this is very alarming! Please prove that the contrary is true and that all new IOC- functionality is properly tested and demonstrable.'</i> [Project Manager SI] <i>'...poor support from SI and PersonSoft related to project processes (meant) I could not build a relationship between me (Test Director) and other partners related to testing activities and what, how, when shall be delivered, etc.'</i> [Test Director TestCo]
	<b>Providing direction and support</b> The support to consortium members was limited to monitoring against the plan and competence in the wider DefOrg organisation demonstrated by SI was poorly experienced.	<i>'But it meant concretely at the time at IOC we didn't have a navigator to steer us through the mire of the DefOrg form and approach because SI didn't seem to have anybody experienced of delivering anything into DefOrg in a formal sense.'</i> [Sales Director PersonSoft] <i>'If we could get a clear direction and agree on how we move forward then I'm sure many of the issues raised over the last few weeks could have been avoided.'</i> [Senior Business Analyst PersonSoft] <i>'Only during the late autumn, 2011, when other documents were candidates for DefOrg refusal, things were changed and SI management focus was set in this direction.'</i> [Test Director]

Theme (nodes)	First order concept clusters	Quotations
		TestCo]
<b>Planning and coordinating delivery</b> Deliveries were coordinated and channelled via a strictly controlled process.	<b>Re-planning and correcting</b> Resource shortages and poor performance by PersonSoft (and TestCo) forced correction by SI in terms of warnings and threats of liquidated damages. Control over sub-contractors was indirect via a contract not direct by day-to-day management.	' <i>.. (name) this demonstrates that the resources issue at PersonSoft is not solved please take the necessary actions.</i> ' [Services Director SI] ' <i>Agency Project Management couldn't accept the cure plan as such from a contractual point of view, because it implies a number of SRS's that won't be available for IOC and thus needs an update of the contract.</i> ' [Project Manager SI] ' <i>Please provide the cure plan urgently so we have a basis for discussion on Friday. In particular we have not received any update on several use cases.</i> ' [Project Manager Agency]
	<b>Monitoring and controlling</b> Project manager at SI was continually amending schedules and plans to cope with performance deficits. Planning from Agency had to emphasise timeline compliance the critical path to delivery was difficult to show. <b>Ineffective control over client</b> Agency delayed 'sign offs' of all important documents – this added to delays especially in design. Project manager at Agency was difficult to control by HRMDept and SI adding to ineffective overall control.	' <i>...nothing was being signed off as you say four months. And we were proceeding, we thought we have to do something, and in the end we were proceeding at a lot of risk and it did come back to bite us very hard.</i> ' [Project Manager HRMDept] ' <i>Can You please FIRST tell me at which time you are able to send it to me and Daniel for Review? I need this because I have to deliver a new PMS today EOB and I need to add this date for the Schedule.</i> ' [Project Support SI] ' <i>I have been attempting to identify the critical path for the project ... There does not seem to be any critical task after the 'FAT Trial' ... This is obviously incorrect and I require that the contractor be requested to provide a complete, integrated schedule showing the actual state, dependencies and criticality of the schedule for discussion.</i> ' [Manager HRMDept]
	<b>Controlling the flow of delivery</b> The flow of the deliveries through the project was from PersonSoft via TestCo/SI to Agency who accepted deliveries before making services available to HRMDept. This flow was strictly maintained throughout the IOC phase.	' <i>The plan has already moved to the right (for good and accepted reasons), but ... the critical path is ill defined and that it may slip further - they are not able to see or feel the 'real' critical path tasks which are being progressed directly by PersonSoft behind the scenes (and at risk).</i> ' [Services Director PersonSoft] ' <i>...you and I should front up a key session with SI next week to review why we keep getting cornered by our supposed partner into these documentation delivery panics, and how we avoid them in the future.</i> ' [Services Director PersonSoft]
	<b>Directing the actions</b> SI and Agency (via SI) were responsible for directing the actions and issuing 'orders' to the subcontractors TestCo and PersonSoft. All output from SI was reviewed and formally accepted by Agency in a quality review process.	' <i>Here's the latest version of the UAT- installation report attached. It's that one that was rejected... so this one must be updated and completed, not only with the results of the recent installation last week but also with the problems from previous time.</i> ' [Project Manager SI] ' <i>Please provide a UAT Installation report that captures the issues faced during the installation. In particular, there is no mention in the report of the significant problems encountered with the installation.</i> ' [Project Manager Agency]
	<b>Active/passive engagement</b> Active engagement in the project output outside of timeline conformance seemed limited from both SI and Agency. SI was remote from the delivery and software creation process.	' <i>And if you spoke to them about any of the problems which we knew we had and discussions on use cases or anything like that they didn't seem bothered.</i> ' [Project Manager HRMDept] ' <i>There was a number of meetings particularly after say the first six and nine months when (name)'s boss, big boss, was called the HRMDept in front of our commander the head of J1 to explain why it was taking so long to do anything. But I must say at the end of the day there was nothing we can do they were there to run the project not us.</i> ' [Project Manager HRMDept]
	<b>Control and acceptance of output</b> SI was responsible for the acceptance of tested software and for the formal delivery to Agency. Completeness and compliance to contract were key.	' <i>For the moment, only 50% of the requirements are covered while 100% are necessary to meet the milestone Critical Design Review and stop the Liquidated Damages! Please complete it ASAP and use this file for future updates.</i> ' [Services Director SI] ' <i>...after the numerous and direct exchanges you had with HRMDept we believe Agency would like the SI project manager to take again the control of the publication.</i> ' [Project Manager SI]

## 5.8 The evolution of practices over time

This section summarises the main observations from the analysis of the practices of implementation. To approach the process models (5-5, 5-7, 5-9 and 5-11) were combined into an overview process model for the whole implementation phase and critical incidents (see Chell, 2004) from the discussion indicated (**Figure 5-12**). Next the constructs from the analysis were coded across the project phases in NVivo10 and then analysed using framework matrices to identify any change in emphasis and common themes over time, with the outcome of this analysis shown in **Appendix I**.

The HRMSys project was predicated on having a fixed price and scope. The principal task of the project team during start-up was to account for any changes that had occurred in the gap from contracting to start-up. The strict governance prevalent at DefOrg acted against this. Agency, responsible for project delivery at DefOrg, operated the contract with a strictly preventative focus. Timeline and budget compliance was of prime importance; however, there was in fact a loose coupling between actual effort needed to complete deliverables and the project plan. Furthermore, the organisation appeared unable to change the planning to account for this. This meant that changes in scope, that may have demanded an integrative and collaborative approach, were blocked by the governance structure.

At the beginning of the project there were two main areas of change, firstly, a set of new requirements were added, and secondly, the incumbent application was included with its embedded history of additions and faults (**critical incident<sup>11</sup> ① in Figure 5-12**). This created uncertainty within the fixed contract and added to the complexity of the requirements validation. Changes to the project occurred through a contract amendment (**critical incident ② in Figure 5-12**) and cycles of changes occurred between suppliers and buyers as they sought to minimise or maximise the impact. This process was a series of negotiations that began by defining the requirements list but over time changed emphasis towards shaping the design to match actor objectives. Overall sustainability of the project was not addressed and increases in scope, and validation and design effort, were only partially reflected in project structure and alignment.

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<sup>11</sup> The process of identifying critical incidents in this outsourcing is covered on page 55 in the method section.

The consortium partners had no prior experience of working together. The project started quickly and there was no allowance on the supplier side for integrating the team. High levels of shared knowledge were essential but did not occur and this resulted in large knowledge deficits (**critical incident ④ in Figure 5-12**). Overall there was limited explicit knowledge transfer throughout the early stages of the project and an absence of application documentation. In the early stages there were repeated requests for knowledge transfer and in later stages more tacit knowhow requiring face-to-face meetings were required. The overall poor knowledge sharing practice was a common theme throughout the project and acted to restrict partner learning.

Two main aspects of the design process were observed, firstly, the inability to access coherent business understanding, and secondly, capability shortfalls in applying the formal standards of DefOrg (**critical incident ③ in Figure 5-12**). The lack of access to subject matter expertise was accentuated by the new requirements introduced at project start-up that needed extensive clarification. This poor access to business knowledge resulted in a design that was fragmented and incomplete. Two faults emerged: a gap between the business processes and what was being articulated in design meetings, and basic faults in the technical execution of the standards. As a result of these factors the design was unstable.

Characteristic of the physical software delivery was the repeated cycles of rework and test. Poor quality software realisation and latency in design caused rework of the application (**critical incident ⑤ in Figure 5-12**). During configuration where changes to the application take place there were repeated failures. Each failure triggered a cycle of testing and a new formal baseline. This exacting process control of the delivery resulted in a 'fix to the list' strategy (**critical incident ⑥ in Figure 5-12**). Where software corrections closely followed the list of deficiencies and limited regression testing was done to check for errors caused by the fix process itself. Large gaps between the requirement and the delivered components of the service emerged due to three main deficits, firstly, inadequate testing practices, secondly, late emergence of the final design, and finally, poor quality basic software (**critical incident ⑦ in Figure 5-12**). Final testing was iterative and exploratory. Faults or gaps in design resulted in rework or adaptation of the design and corrections were focused just on the list of deficiencies and bugs explicitly exposed during a test cycle.



## 5.9 Chapter summary: strong control blocked adaptation

### The main case findings were:

- A large change in scope had taken place in the three-year gap until project start. The new requirements needed substantial elaboration and modelling and this was not accounted for within the project.
- The project context was constrained by an assumption of a fixed price, timescale and scope. Strong maintenance of this contractually by Agency, and resistance by SI and Agency to change, prevented adaptation.
- Vendor selection had proceeded on the basis of prior experience with a specific software package that required bespoke adaptation and this conflicted with the control and development process required contractually.
- The software vendor did not have the capability, capacity or inclination to work within a formally structured consortium.
- The change in scope and basic lack of feasibility of the project started negotiation cycles to move the project objectives in a party's favour or to resist the other parties' intentions.
- There was poor understanding of the business need on both the buyer and supplier side especially for new functions outside of existing incumbent. The design process was flawed, ineffective and delivered very late.

PersonSoft were selected as the provider of the incumbent application in a politically biased process and had difficulty adapting to the formal structure and approach of the new centralised way of working. They worked poorly with supplier partners and their capability and resource shortfalls lies at the heart of implementation failure.

### Preview next chapter

**Chapter 6** will focus on the emergence of power and conflict within the HRMSys project implementation phase. Re-coding for power, resistance and conflict, it will demonstrate the dynamic nature of power and how conflict arises from the natural evolution of the work as purposive actors solve problems and overcome project contingencies.

## Chapter 6 – The dynamics of power and conflict

### 6.1 Chapter overview

RQ3: How does power arise during the implementation of outsourcing?

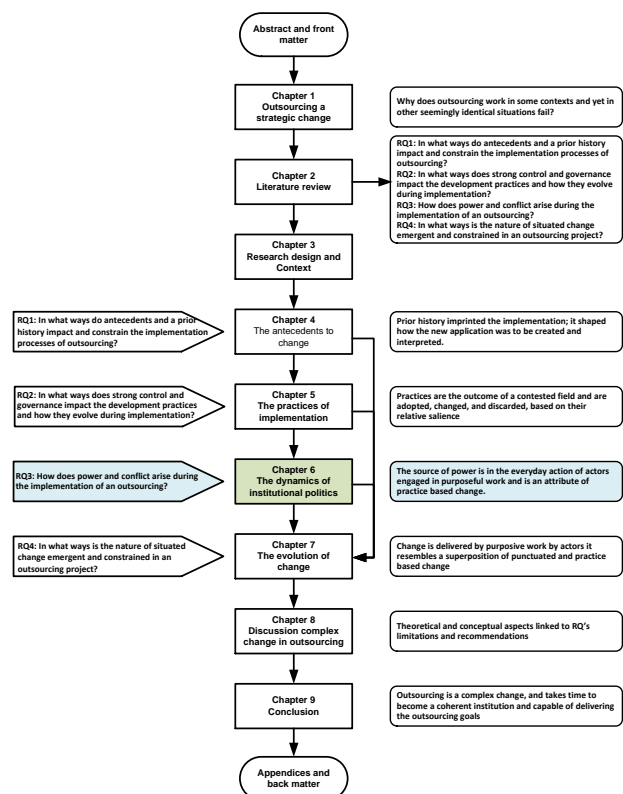
**Chapter 6**  
The dynamics of power and politics

The source of power is in the everyday action of actors engaged in purposeful work and is an attribute of practice based change.

The aim of this chapter is to explore how power and conflict arises in an outsourced project and how the inter-relationship between rational and political actions develops over time. It does this by re-analysing the implementation data and recoding it to identify power themes based on a framework derived from the literature.

#### This chapter covers:

- The evidence for the derived dimensions of power from the empirical clusters via themes to the high-level categories.
- Discusses each high-level category of power and identifies the location and effect of conflict within the actual observed practices.
- Summarises the evolution of the power dimensions over time and derives a process model demonstrating the dynamic nature of power as it emerges from real world problem solving.
- A summary of findings and a preview of the next chapter.



This chapter addresses the following research questions:

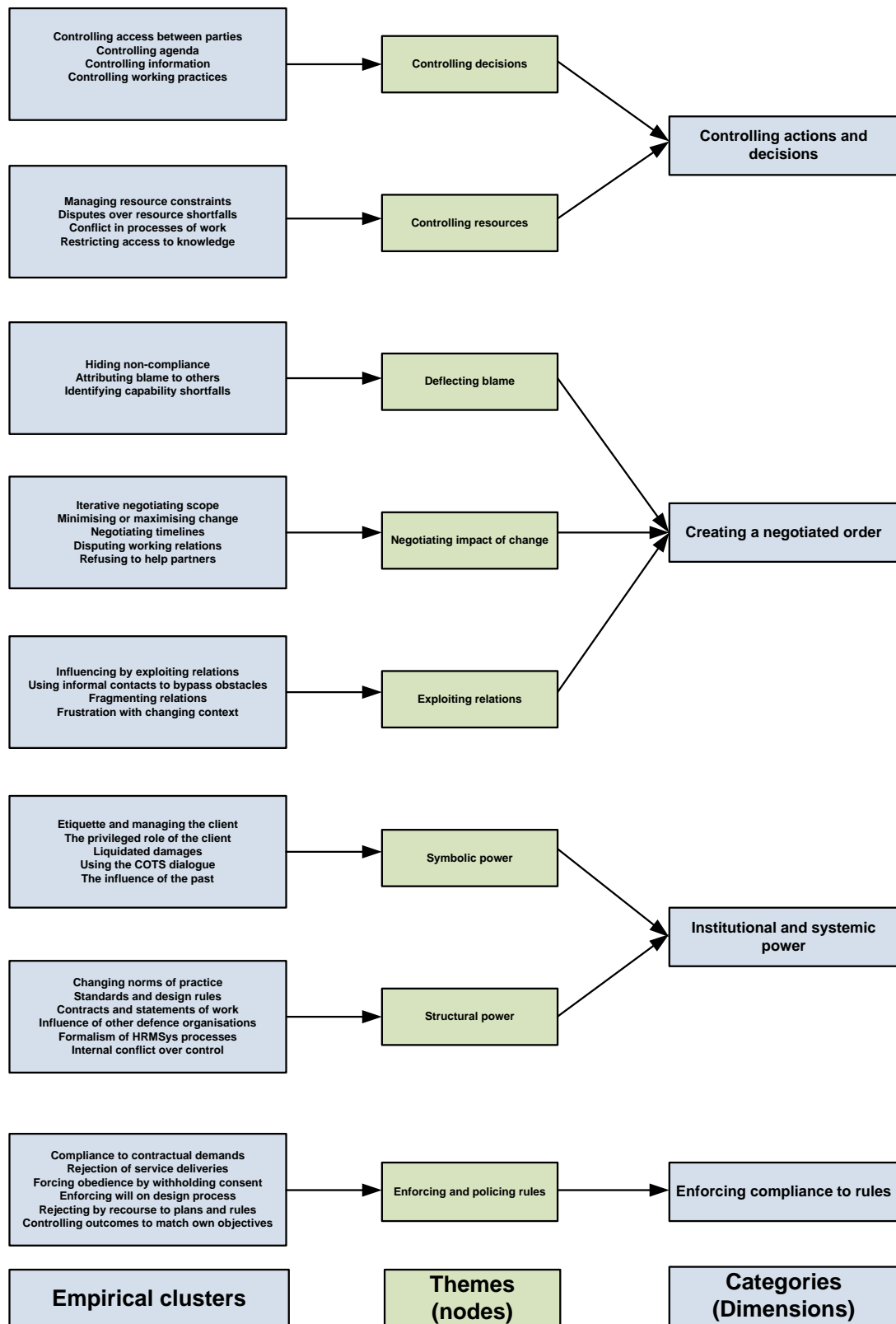
**RQ3: How do power and conflict arise during the implementation of outsourcing?**

**RQ3.1: How does power and conflict impact work practices?**

## 6.2 Empirical evidence for the power dimensions

The first step of the analysis followed a similar trajectory to **Chapter 5** and was based on identifying the themes of control, agency and resistance observed at identified critical moments during project implementation using the theoretical lens of power in institutions as a sensitising framework (Lawrence, 2008). The interview, group meetings, logs and email narratives were reanalysed and then on-coded from the original case nodes into a new set of initial categories based on the power dimension framework shown in **Figure 2-5**. The final model was then converged upon by a process of constant comparison, using framework matrices, iterating between the raw data with that already encoded in the current construct, and by this means arrived at the second-order theoretical constructs as shown in **Figure 6-1**. As before the identified first-order constructs were combined into second-order themes then to the aggregate categories or dimensions as suggested explanations for the power themes observed.

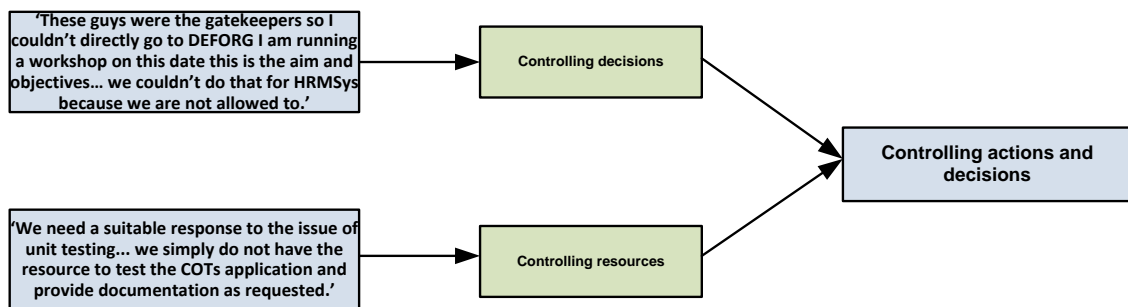
To explain the dynamics of conflict and power four aggregate dimensions or categories were derived: controlling actions and decisions, creating a negotiated order, institutional and systemic power and enforcing compliance to rules. In this section these four dimensions will be reviewed and the link demonstrated from the concept clusters, second-order themes and the supporting empirical data to these aggregate categories shown in the data Table 6-1 to Table 6-4.

**Figure 6-1- Data model for the observed power dimensions**

### 6.3 Dimension – controlling actions and decisions

Rules, regulations, contracts and the recording of minutes are examples of mechanisms that control how work should be done and monitored. Controlling decision-making by managing access between parties, and determining who is included or excluded in discussions, controlling information flows, and defined modes of work are characteristic of the power of processes (Hardy, 1996b). The link between the empirical data and the two factors of controlling decisions and controlling actions is shown in Table 6-1 and an extract of the data model shown as **Figure 6-2** that illustrates the link from the data, via empirical themes, to the dimension category controlling actions and decisions.

**Figure 6-2 - Extract empirical model controlling actions and decisions**



The contractual framework of HRMSys specified, in detail, the governance, legitimate communication channels, delivery flows from suppliers to customers, and the ways in which the design must be achieved and documented. No aspect of the development process was left open or unspecified. Furthermore, selective control, access and release of information as well as a non-integrated team facilitated poor information sharing that was characteristic of day-to-day work practices.

*'We were dependent on HRMDept to get our foot in the door but the door was never opened for us to actually do that.'* [Business Analyst PersonSoft]

Extensive process control inhibits supplier performance since it does not allow the supplier to show competence in managing service delivery (Tiwana and Bush, 2007). Tight and inflexible control quickly became an obstacle to progress, especially around the definition of the design. A fixed price project demands a known scope, whereas it was observed here the business requirements were far from fixed and required a much more development, analysis and elucidation. This type of process was not allowed at the start of the project and initial design meetings were attended by twenty

or even thirty participants and delivered nothing of value. Also a fragmented supplier team was evident that exhibited poor knowledge sharing processes.

*‘...no technical knowledge transfer was allowed from PersonSoft to TestCo (and by technical I’m not referring to application usage, but more in depth knowledge).’ [Test Director TestCo]*

Hong and Fiona (2009) showed social inclusion is a prerequisite for joint development, and partners that remain largely distinct and distant cannot create a common identity and community of practice that is essential for a successful outcome. Accentuating this problem, declarative knowledge in documents or memos is often insufficient to ensure success and a high level of shared knowledge, especially deep tacit knowledge is essential and can only be acquired by face-to-face interactions that was largely prevented and blocked. A social process is essential and a separated non-integrated team as was observed impedes this (Collins and Hitt, 2006).

**Table 6-1 – Dimension controlling actions and decisions**

Theme (nodes)	First order concept clusters	Quotations
<b>Controlling decisions</b> The move to a formal project and the use of a consortium altered the dynamic between the parties to be much more formal.	<b>Controlling access</b> Informal access between PersonSoft and HRMDept outside of formal project governance was strictly controlled and monitored especially at start up. Agency and SI were the formal intermediaries through which all information and deliverables flowed and project decisions made.	<i>‘These guys were the gatekeepers so I couldn’t directly go to DefOrg I am running a workshop on this date this is the aim and objectives this is the agenda this is location... we couldn’t do that for HRMSys because we are not allowed to.’</i> <i>[Project Manager SI]</i> <i>‘I just called Eric who is in meeting and he agrees that we should stop exchanging e-mails with customer for the reason that it looks like we increase the dissatisfaction and risk for both your project at HRMDEPT and our common project APMS.’</i> <i>[Project Support SI]</i> <i>‘We were dependent on HRMDept to get our foot in the door but the door was never opened for us to actually do that.’</i> <i>[Business Analyst PersonSoft]</i>
	<b>Controlling the agenda</b> Control was exercised by excluding actors from meetings where there was a risk of exposing countervailing views or when an exclusive platform for own views was required.	<i>‘Back to the summer of 2011, I proposed to organize some meetings to get the users feedback and their current issues. PersonSoft (and I believe also SI) was against this.’ [Test Director TestCo]</i> <i>‘Since it was decided that I shall not participate to this use cases round table meeting, please find inline some questions that I hoped to have them clarified by the end of the meeting.’ [Test Director TestCo]</i> <i>‘...proposes working at HRMDEPT for extended time to wrap this up. I want every one out of the room except you and (name)’ [Project Manager PersonSoft]</i>
	<b>Controlling information</b> Agency had a combative and conflictual approach to review and acceptance. Documents and reports by the consortium were ‘sanitised’ and tightly focused on specific issues to avoid generating additional questions and conflict.	<i>‘Please note this is just an email between PersonSoft and HRMDept - I have deliberately not included System House or Agency as we are desperate to ensure we do not cause any further delays.’ [Project Manager HRMDept]</i> <i>‘So from that I was wondering do people actually know what we doing here. And all of a sudden they started to send comms you know communications to people that was all very new it is like putting a postcard in a newsagent who’s gonna actually read that.’ [Business Analyst PersonSoft]</i>

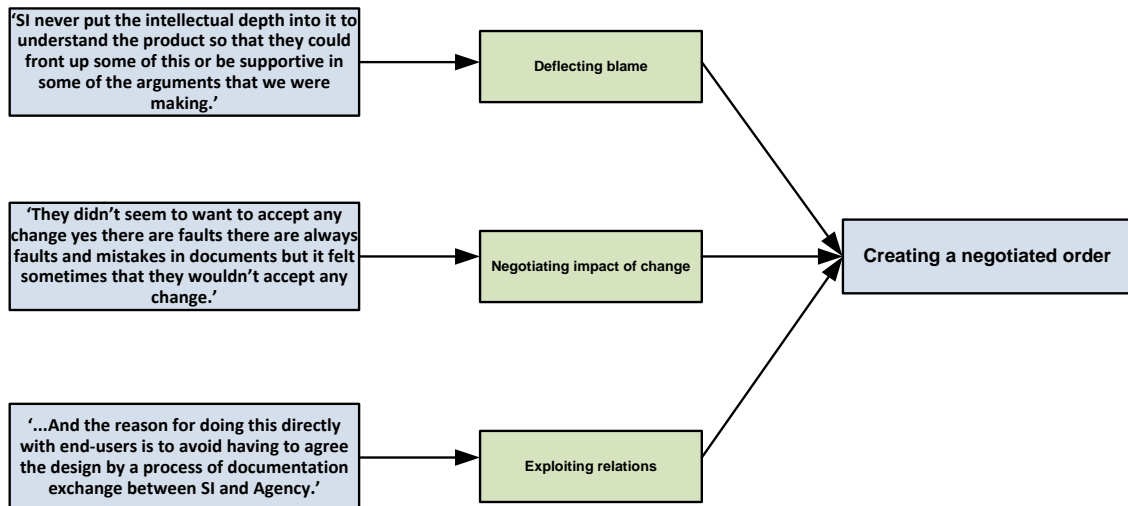
Theme (nodes)	First order concept clusters	Quotations
	<b>Controlling working practices</b> Own processes and procedures were proposed as working approaches to control how methods were applied and used.	<p><i>'We also suggested that there may be some onerous project tasks currently scheduled (including extensive documentation requirements) which could also reviewed to free up more productive 'development' days.'</i> [Services Director PersonSoft]</p> <p><i>'At this meeting the Impact statement was review which primarily highlighted all the requirements that will be done in IOC (omitted / new) and those moved to FOC. It was a very successful meeting which seem to edge us closer to deliverable IOC Scope.'</i> [Technical lead PersonSoft]</p> <p><i>As we discussed many times together during the Bid, the current plan is impossible to meet and we therefore need to force through better and more efficient ways of working, or we will all fail... need direct access to the end users</i> [Services Director PersonSoft]</p>
<b>Controlling resources</b> Control over information resources and its poor distribution stunted partner learning and added to consortium fragmentation.	<b>Managing resource constraints</b> Resources were limited throughout the project and gaps in capability within PersonSoft drove the implementation of new internal processes and the removal of some key personnel.	<p><i>'We need a suitable response to the issue of unit testing unfortunately we simply do not have the resource to test the COTs application and provide documentation as requested ...there is no way we can provide this to TestCo.'</i> [Test Manager PersonSoft]</p> <p><i>'But we all know that no real Test Director was in place from HRMDept.'</i> [Test Director TestCo]</p> <p><i>'I think PersonSoft themselves were under resourced and I still think they probably are we estimated the amount of effort else we wouldn't have had problems that we had at IOC'.[HRMDept Director]</i></p> <p><i>'...expressed his concern about human resources allocation on PersonSoft side due to the delay in delivering the Use Cases.'</i> [Project Minutes HRMSys July 2011]</p>
	<b>Disputes over resource shortfalls</b> SI issued several letters of sanction to PersonSoft for continuous delivery failure against timelines. This generated an exchange of letters between the parties with claim and counterclaim for the responsibility of failure.	<p><i>'It looks to me, from here, as though we will need to prepare a full 'chapter and verse' in response to this formal Agency letter (of delay).'</i> [Services Director PersonSoft]</p> <p><i>'I would like to formally acknowledge receipt of the undated letter (on resource shortage) from (name) of SI to PersonSoft.'</i> [MD PersonSoft]</p> <p><i>'We agreed on a series of WebEx online meetings between PersonSoft's business consultant and TestCo testers and trainers. To this date we were confronted with repetitive cancellation and only a limited number of sessions were held.'</i> [Letter to PersonSoft 09/10/2011]</p>
	<b>Conflict in work processes</b> Lack of integration between consortium parties led to regular occurrences and conflict over what TestCo could/should test and lack of information exchange blocking progress. Poor and delayed acceptance or provision of information led to cycles of blame and counter claim.	<p><i>'TestCo are only to test those issues marked in the original spreadsheet sent ... So please concentrate your efforts on these as the remaining issue are not part of APMS IOC.'</i> [Technical Consultant PersonSoft]</p> <p><i>'I'm with DefOrg all week so they will have to wait for my responses. I've already told them this for the 100th time....grrrr!!!'</i> [Business Consultant PersonSoft]</p> <p><i>'The other thing that was missed was there was knowledge transfer in the contract for TestCo to do their testing. There was no technical knowledge transfer for HRMSys.'</i> [Technical Services PersonSoft]</p> <p><i>'...no enabling was done; we are blocked by various interpretations that shall be performed.'</i> [Test Consultant TestCo]</p>
	<b>Restricting access to knowledge</b> PersonSoft restricted availability to required knowledge of the application and development processes to TestCo that effectively blocked TestCo progress.	

## 6.4 Dimension – creating a negotiated order

The exchange and bargaining for resources is a political process that creates a pattern of exchange that varies over time - the outcome representing the status of the power relations at a particular moment in time (Dawson, 1994). The link between the

empirical data and the three factors of deflecting blame, negotiating impact of change and exploiting relations is shown in Table 6 1 and an extract of the data model shown as **Figure 6-3** that illustrates the link from the data, via empirical themes, to the dimension category creating a negotiated order.

**Figure 6-3 - Extract empirical model creating a negotiated order**



There was latent conflict at the heart of the project which was manifest in a mismatch between a niche supplier of bespoke software and a requirement for a formal COTS software solution. From the beginning, how new requirements could be offset against existing functionality in the incumbent triggered negotiation. Buyers insisting that new requirements could be included within the existing scope with suppliers countering that those new requirements were *'not included in the bid submission'* and must be paid for. The process involved buyers repeatedly posing that the *'substantive functionality was already present'* in the incumbent application or could be *'reasonably assumed'* to be delivered from the existing contract. This meant from their perspective that the development time saved could be offset against the new requirements at no extra cost.

The overall process during the requirements phase and later stages revolved around this type of formal and informal negotiation, brokering and blaming (including the bypassing of the formal project meetings), to reduce or contain scope. Resistance was observed and conflict emerged as cycles of negotiation over failures in deliverables, blaming failures on partners, the settling of old scores, and conflict over the requesting and denial of help, were characteristic throughout the project. These

aspects and representative quotations are shown in Table 6-2.

**Table 6-2 – Dimension creating a negotiated order**

Theme (nodes)	First order concept clusters	Quotations
<b>Deflecting blame</b> Gaps in resource and application capabilities were shielded by PersonSoft and actors shaped the direction to fit capabilities.	<b>Hiding non-compliance</b> HRMSys was based on the old technology MAPS that was not compliant to the bid documents. In areas where this was most acute this was obscured from SI and Agency by a creative approach to the bid for the contract.	<i>'One of the things that hobbled us in APMS was the product? We were creative when we bid for the project about the technology and the new web-based that form - we didn't do anything in the two years before the project started.'</i> [Services Director PersonSoft] <i>'I guess we need to be very careful in how we work through clarifying this. I believe we were very clear in our bid, but we don't want them to think we have been dishonest in this area.'</i> [Sales Support PersonSoft] <i>'The test waiver issue is the major remaining risk for IOC and the attached document is not the expected answer. The story you provided until now is not working since the testing of some waived requirements failed.'</i> [Services Director SI]
	<b>Attributing blame to others</b> Failures in the project were attributed by PersonSoft to lack of understanding of others, poor processes or vague requirements. By TestCo to poor knowledge transfer or by SI as lack of timeline discipline and shortage of resources at PersonSoft.	<i>'In conclusion we have it is clear that TestCo / SI are unprepared and geared up for the next phase of this project and that we may need to apply some to pressure to ensure that they are meeting their obligations.'</i> [Technical Consultant PersonSoft] <i>'SI never put the intellectual depth into it to understand the product themselves so that they could front up some of this, or be supportive in some of the arguments that we were making'.</i> [Project Manager PersonSoft] <i>'From my point of view this shouldn't be happening in the Release Candidate, or we should not call this release as a Candidate. Expectations: Another release is required in order to have a good starting point for the testing and training materials preparation.'</i> [Test Director TestCo]
	<b>Identifying capability shortfalls</b> Individuals openly attributed failures in delivery to themselves caveated by a lack of experience in the demanded methods and processes.	<i>'Lack of experience in development of the documentation and poor input of the business need meant requirements took a long time to develop and was subject to continuous change as more ideas came forward.'</i> [Business Consultant PersonSoft] <i>'I'll be honest I think one of the problems initially was that's the first time I've been involved with use cases. In that way. So I had a learning lesson and there was no one else on my side who had any knowledge or wanted to do anything with it at all.'</i> [Project Manager HRMDept]
<b>Negotiating impact of change</b> The methods, requirements, and introduced changes were shaped to fit capabilities by a process of negotiation.	<b>Iteratively negotiating scope</b> Scope negotiations during requirements and design sought to match requirements to delivery capabilities. Removing items or reducing their scale was negotiated between HRMDept and PersonSoft.	<i>'It was proposed at the Use Case Workshops that the requirements which focus on replacing the ERT functionality can be moved to FOC.'</i> [Technical Consultant PersonSoft] <i>'They have agreed we can only do 5 CBT's at IOC and they want to know how much time we will take at IOC to do this. Then they can take this time from the time we said at IOC to see if any capacity has been freed up'.</i> [Technical Consultant TestCo] <i>'According to our interpretation, these changes should be cost neutral so no authorization for extra funding will be necessary, and thus (also) precluding a significant impact (on the project schedule).'</i> [Contract Manager Agency] <i>'I don't think we ever achieve one single impact statement for example or one real change it was basically fixed from the start to finish with just a bit of shuffling around here and there - but more or less that it'.</i> [Business Consultant PersonSoft] <i>'They didn't seem to want to accept any change yes there are faults there are always faults and mistakes in documents but it felt sometimes that they wouldn't accept anything there was no appetite at all to accept any change and corrections of that activity.'</i> [Analyst PersonSoft]
	<b>Minimising/maximising change</b> Large scale changes were introduced at the project start. Buyers sought to minimise the impact whilst suppliers sought to maximise impact or to use the changes to de-scope the remainder of the project to fit capabilities. Buyers resisted change.	
	<b>Negotiating timelines</b> The timeline was in constant dispute and constantly varying as delays in design, configuration and testing occurred. Focus	<i>'When we were discussing this with Frank so there are some interesting dynamics in terms of roles of partners. He said that you win DefOrg bids even if you believe that the timescales and unachievable is to get the bid won and then work within the</i>

Theme (nodes)	First order concept clusters	Quotations
	was on the timeline being met above all other concerns.	<p>contract.’ [Sales Director PersonSoft]</p> <p>‘I’m afraid it is too late to change the schedule now. We must stick to the agreed planning because all DefOrg guys already replied ‘present’ and a project is not only technical but also political.’ [Project Support SI]</p> <p>‘As we discussed many times together during the Bid, the current plan is impossible to meet and we therefore need to force through better and more efficient ways of working, or we will all fail.’ [Services Director PersonSoft]</p>
	<p><b>Disputing working arrangements</b></p> <p>Common approaches and tools were negotiated and partially applied across the project but there were continuous gaps.</p> <p><b>Refusing to help partners</b></p> <p>There were continuous requests from TestCo to PersonSoft for enabling and knowledge transfer – without this their work was blocked as testing and training was highly dependent on PersonSoft’s input.</p>	<p>‘Remember the agreed Unit Testing? No activity was done by PersonSoft in this direction. I should not be accepting any software release as long as a given code coverage percent was not satisfied.’ [Test Consultant TestCo]</p> <p>‘We could had a more rigorous and better process if dedicating a fixed time period when testers and PersonSoft to meet each other and exchange their values.’ [Test Analyst TestCo]</p> <p>‘Unfortunately I won’t be able to do an enabling session on Thursday, so I will conduct one on ... as agreed. However, I’ve managed to answer some questions via email.’ [Consultant PersonSoft]</p> <p>‘That issue that (name) raised as a show stopper is expected behaviour of the product. As usual they have no experience and training on the product and they are testing with their own misconceptions.’ [Technical Consultant PersonSoft]</p> <p>‘Neither you or I have the time to handhold them; They need to go through Angella I am afraid. That means they will need to wait. We need one message going to them and Ange is best suited for this.’ [Technical Consultant PersonSoft]</p>
<p><b>Exploiting relations</b></p> <p>The former dyadic relation between PersonSoft and HRMDept was exploited by both parties to circumvent control but was eroding.</p>	<p><b>Influencing by exploiting relations</b></p> <p>The use of demonstrations or pilots and pre-releases was used as a process of achieving buy-in and acceptance directly by PersonSoft to HRMDept and attempted to exploit past relationships to achieve current leniency.</p>	<p>‘It is going to be difficult to get this under the radar before we get through IOC but what I can promise is that we will commit to deliver this to you very quickly after IOC go-live. It should be very easy to slip this one in...with a little help from your side.’ [Technical Consultant PersonSoft]</p> <p>‘The walkthroughs, conference pilots etc. are defined in our approach and was agreed as a way of us ‘demonstrating’ compliance to the requirements directly to HRMDept.’ [Services Director PersonSoft]</p> <p>‘...And the reason for doing this directly with end-users is to avoid having to agree the design by a process of documentation exchange between SI and Agency. This way we can gain support from the user community to curb the worst excesses of Agency.’ [Project Manager PersonSoft]</p>
	<p><b>Using informal contacts to bypass obstacles</b></p> <p>At an early stage PersonSoft arranged by informal means, sometimes offsite, and meetings to influence progress and force a change in the design process more in line with previous practice.</p>	<p>‘I mentioned this to (name) a couple of weeks ago and he was OK with the principle of most effective use of Team time. I also mentioned it to (name) over lunch at the kick off. We should be able to make this work.’ [Sales Manager PersonSoft]</p> <p>‘Informal communication on the development of the UCs is beneficial to the process and, hopefully, will reduce the continuing slippage of the activity dates in the schedule. However, such informal communication does not obviate the need for an internal “sanity check”.’ [HRMDept Manager]</p>
	<p><b>Fragmenting of relations</b></p> <p>PersonSoft and HRMDept maintained direct relations outside of HRMSys project that drew heavily on past experience and history but this was ending.</p> <p><b>Frustration with changing context</b></p> <p>Changes in key players at HRMDept during the project, who had no prior history, changed the dynamic between HRMDept and PersonSoft to be sometimes conflictual.</p>	<p>‘Re our phone call this morning, please accept my sincere apologies for any resulting undermining of relationships. I do apologise for not making it clear that raising the subject of our discussions directly at the PCR would cause problems. It will not happen again.’ [Services Director PersonSoft]</p> <p>‘What must be clarified to Eric and myself is what is the frontier between ‘what PersonSoft does for HRMDept’ and ‘what HRMDept does itself’ in MAPS 6.3 or 6.4 (I don’t know anymore).’ [Project Support SI]</p> <p>‘PersonSoft feel ‘hung out to dry’ on occasions... (There is) no partnership with HRMDept anymore almost seems hostile sometimes and the history with HRMDEPT is a mixed blessing.’ [Development Manager PersonSoft]</p>

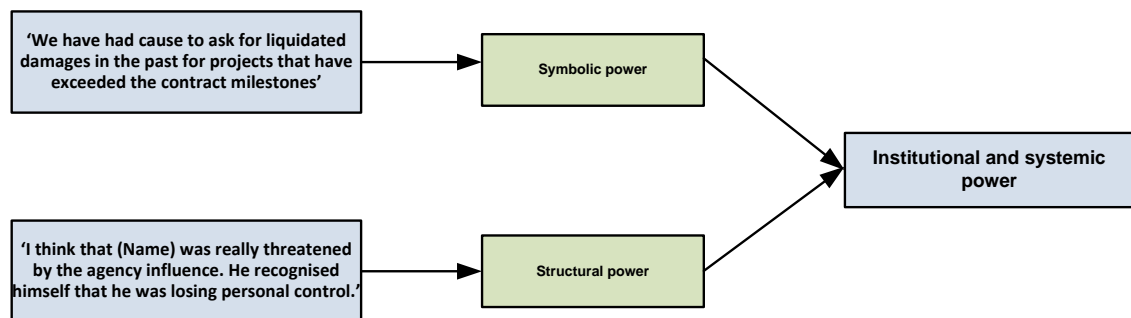
Theme (nodes)	First order concept clusters	Quotations
		<i>'(Name) should (have) grabbed those two by the throat and said I'm going to be gone in a year or year and a half and I want this. (And said what he wanted as his legacy) but he didn't he stepped back and let Agency, SI and ourselves fight it out.'</i> [Services Director PersonSoft]

## 6.5 Dimension – institutional and systemic power

Institutional constraints via rules, legitimate rules of engagement, established cultural norms of practice regulated the work of the actors in the HRMSys outsourcing. It was observed that both suppliers and buyers were trying to modify and shape the contract and what must be done within this organisational field to suit their own interests.

Systemic power is an embedded factor within a project and represented by organisational scripts and patterns, and particular ways of talking and behaving between project actors, and becomes visible when constituted in actions of compliance. The link between the empirical data and the two factors of symbolic power and structural power is shown in Table 6-3 and an extract of the data model shown as **Figure 6-4** illustrates the link from the data, via empirical themes, to the dimension category institutional and systemic power.

**Figure 6-4 - Extract empirical model institutional and systemic power**



Symbolic tools, such as the discourse liquidated damages, was used for failings in contracted deliverables to control group behaviour and force compliance. It was used by all organisations at various times, on their own members, as a veiled threat to force behavioural change. There was an acceptance of authority hierarchies such as the contractor/subcontractor, client/supplier and defence/civilian dyads that legitimised authority relations, subordinate roles and particular organisational scripts. For example, as is seen here in the role given to the client/buyer as beyond control by the supplier.

*‘There are still a large number of outstanding actions against DefOrg many of these actions was raised following the workshops in April 2011 we seem reluctant to enforce deadlines against DefOrg in the past but essentially without resolutions to some of these issues it will hold work up.’ [Business Consultant PersonSoft]*

Time and planning had a legitimate and unquestioned symbolic role within the system development. Meeting the schedule was of prime importance and what was delivered was secondary to when it was delivered. There were several occasions, for example in delivering architectural designs, where the content was made up of internet searches slightly modified, or basically invented. No one on the buyer side was able to assess for validity so deliverables were accepted on the basis of being on time. This exposed an information asymmetry between buyers and suppliers and was an example of shirking by suppliers.

There were changes in the institutional context on a wider organisational scale at DefOrg, from a distributed to a centralised form of process control reflected in the form of controls and standards being imposed on the organisation. Structural influences of wider economic and political forces, such as the financial crisis in 2008, drove a tighter focus on cost aspects within this project that put at risk the original assumptions made at bid time. Resistance to systemic power was seen by the questioning of legitimacy and challenging of the worth of rules and regulations, coupled with nostalgia for the old ways of working, and a seeking to re-establish old bonds. Symbolic and Institutional power is embedded, almost out of awareness, and acts to influence and constrain how organisations and actors perform their roles. Resistance as an action is mainly an attempt to reduce these constraints or to co-opt those elements in-line with one’s own objectives. The observations for how symbolic and systemic power appeared in the case are shown in Table 6-3.

**Table 6-3 - Dimension institutional and systemic power**

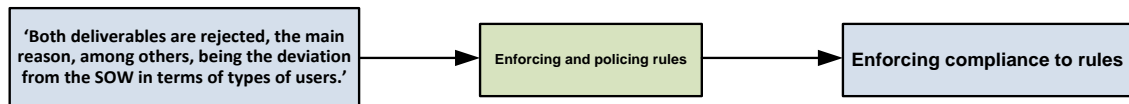
Theme (nodes)	First order concept clusters	Quotations
<b>Symbolic Power</b> The use of symbols or cultural norms that are unquestioned and frame	<b>Etiquette and managing the client</b> How client should be approached and treated was strictly controlled and specified in the contract. Contact was always by SI and Agency no other channels were allowed.	<i>‘We must avoid multi-communication channels to the Purchaser. Here with HRMSys, it is totally different; you saw the extreme formalism of those guys. It is an Agency - SI contract where HRMDept is behind Agency and PersonSoft behind SI’.</i> [Project Support SI] <i>‘...such information - especially when it concern APMS - may not be sent to the customer. Before doing so we must first discuss</i>

Theme (nodes)	First order concept clusters	Quotations
relations and action.	<b>The privileged role of the client</b> Reluctance to enforce discipline on the client for meeting deadlines. Buyer side cut across communication lines when it suited their interests.	<i>this internally and come to an agreement, and only then the customer can be informed by us.</i> [Project Manager SI] <i>'Almost every intervention from DefOrg management side reset somehow the so fragile connection between TestCo and PersonSoft; I mean everyone tried to defend by itself that we forgot to react as a team.'</i> [Test Director TestCo]
	<b>Liquidated damages</b> Threats of liquidated damages became an accepted tool of behavioural control across all actors in the project.	<i>'...we have had cause to ask for liquidated damages in the past for projects that have exceeded the contract milestones.'</i> [Contract Manager Agency]. <i>'...at the moment, only 50% of the requirements are covered while 100% are necessary to meet the milestone Critical Design Review and stop the Liquidated Damages!'</i> [Services Director System House]. <i>'...This is a joint action with them in the lead and us supporting it is not optional - besides we may need them on side to cover us on testing etc. and any liquidated damages comes from us all!'</i> [Project Manager PersonSoft]. <i>'We'll have to submit the updated PMS), such that Agency can update the SSS (schedule of supplies and services) based on this in order to avoid 'liquidated damages'.'</i> [Project Manager System House].
	<b>Using the COTS dialogue</b> The bid required a COTS solution and SI/PersonSoft claimed the incumbent application as COTS. A COTS solution implied functions being substantially complete and ready - only requiring minor modification.	<i>'...we were trying to sell a COTS product in a situation where the history had been essentially bespoke development.'</i> [Service Director PersonSoft] <i>'We sold a cots package in the bid and all the discussion about current or cots basically saying it was all there and there was nothing to do and we spent the first six months of the project backpedalling saying we had to do everything from scratch.'</i> [Business Analyst PersonSoft] <i>'I believe even (names) and some of the AGENCY guys have not lost sight of the fact that the procedures and COTS package were being made to fit to a set of relatively bespoke functional requirements.'</i> [Services Director PersonSoft]
	<b>The influence of the past</b> In the background was a reference to older ways of working where there was much less formality.	<i>'For HRMDept, life is easy because they understand the systems makeup and are thankfully free of rigorous process and the change management that applies: Deliveries, CDs, are put through the T&amp;V process and on passing this process they are locked down.'</i> [Senior Technical Consultant PersonSoft] <i>'...it was the old relationship you used to come to us and we used to sort it out. Exactly, and if we needed money we got it. Once it became somebody else's responsibility it (was) almost impossible to get more money.'</i> [Director HRMDept] <i>'The incumbent was accepted as a baseline so no functionality would be lost in APMS and as a result comes on the critical path.'</i> [Project Manager HRMDept]
<b>Structural Power</b> The institutional rules within which the project must operate.	<b>Changing norms of practice</b> The less formal and loose working had to change to a formal stepped approach and caused problems as this new way of working had to be learnt.	<i>'I think that's where the inexperience of us came through because we were used to working in that way. And it did take two, three, four months before we found our feet and oh (shit) this is completely different from what I'm doing now. So it's a little bit of that we were so used to working on-the-fly working very quickly at a very rapid pace but when it came to doing design phases and testing phases and FAT, SAT we were like lost.'</i> [Business Consultant PersonSoft]
	<b>Standards and design rules</b> The rules surrounding the project covered all aspects of management, design, processes of development and ran to several thousand pages. <b>Contracts and statements of work</b> The contract specified a fixed price, scope and timeline for the project three years in advance of the project. Contractual framework was strongly preventative and contained disciplinary elements.	<i>DefOrg (2007), DefOrg Architecture Framework Version 3 CHAPTER 4 Architecture Views and sub view, DefOrg Documents C-M(2002)49 and AC/322-D/1[DOC:REF:STAN]</i> <i>DefOrg (2012) GUIDELINES for the STRUCTURE and CONTENT of SECURITY OPERATING PROCEDURES (SecOps) for COMMUNICATION and INFORMATION SYSTEMS (CIS) [Doc:REF:STAN]</i> <i>Document describing and listing management and standards compliance :CO-12318-HRMSys_PartIII-SOW_v1.31</i> <i>IFB CO-12318-HRMSys Book II Prospective Contract v1.7</i>

Theme (nodes)	First order concept clusters	Quotations
		[DOC:REF:CONT] List of Plans to be maintained_v1 [DOC:CON]
	<b>Influence of other defence organisations</b> PersonSoft were developing defence systems for other clients outside DefOrg that drew resource and focus away from HRMSys that was seen as a threat to HRMDept hegemony over the design direction and other players in defence.	Lisbon User Group - Defence Suite Project Plan Review [Doc: REF:POL] <i>'As we move towards FOC there is a much broader user community the system will be exposed to, so must engage with the broader user community - Lisbon is to drive user engagement as well as perform analysis.'</i> [Development Manager PersonSoft] <i>'I had a very strained telephone conversation with (Name). He is clearly incandescent with the current status and proposed roadmap of our new Defence Suite development as it relates to his DefOrg FOC requirements. I believe we face a real danger of losing DefOrg as an account.'</i> [Sales Director PersonSoft] <i>'I think he was trying to sell it internally to a series of senior guys from DefOrg and he was also trying to influence the Norfolk Virginia DefOrg group. He saw a bigger view than just DefOrg Europe.'</i> [Sales Director PersonSoft]
	<b>Formalisation of HRMSys processes</b> The formalism of HRMSys meant new processes at variance with past practice that also limited freedom and reduced innovation. <b>Internal conflict over control</b> Control for HRMDept and PersonSoft was being transferred from them to others within the project hierarchy.	<i>'I do have a concern that in the new and strictly version controlled HRMSys world, with the HRMDept application ownership in particular being transferred to and managed by Agency, that the previously enjoyed freedom to amend and add functionality to the MAPS application will be severely and abruptly curtailed.'</i> [Services Manager HRMDept] <i>'I think the whole contracting, procurement, waterfall, define everything upfront and define the timescales from them to work within then contract it and then nail your suppliers to the wall was not the way we had been working with HRMDept.'</i> [Services Director PersonSoft] <i>'The fact is that we had with the relationship we had over 15 years with (Name) and almost direct, you know one to one relationship. Instead we were dealing and eventually that loop all the way around from Agency and SI and back to the end users I think contributed significantly (to the problems).'</i> [Services Director PersonSoft] <i>'I think that (Name) was really threatened by the agency influence. He recognised himself that he was losing personal control. He might be senior user but nevertheless the whole contractual obligations were resting with agency.'</i> [Sales Director PersonSoft]

## 6.6 Dimension – enforcing compliance to rules

Literature on power characterises compliance primarily as a direct application of the power of possession or control of resources, and is seen by the allowing or denying of access and is a practical operationalisation of power. It is seen episodically as actors enforce systemic and symbolic power (Lawrence, 2008). The link between the empirical data and the factor of enforcing and policing rules is shown in Table 6-4 and an extract of the data model shown as **Figure 6-5** illustrates the link from the data, via empirical themes, to the dimension category enforcing compliance to rules.

**Figure 6-5 - Extract empirical model enforcing compliance to rules**

Agency and the HRMDept used their ability to reject, accept and veto deliverables as a mechanism for ensuring close compliance to the contractual imperatives. It was observed how obedience and compliance were ensured, by strictly controlling conformance to design rules or documentation standards, or by using sanctions and rewards. This was an overt direct use of power to control and influence the behaviour of the suppliers to be in line with that of the objectives of the dominant actor. Within this project, rejection of deliverables (software or documentation) meant delays, extra work to repair deficiencies and ultimately delays in payment for services which had a high internal impact within the suppliers. The negative aspects of this focus on compliance, and not outcomes, resulted in a lack of sensitivity to emerging problems in service delivery that only became apparent late in the project. The observations showed that resistance to the application of this type of power came mainly through negotiation to reduce the scale and scope of deliverables, questioning the utility of key aspects of the project, criticising requirements, claims of vagueness in business need, or reducing the impact of compliance by claiming inappropriateness.

**Table 6-4 - Dimension enforcing compliance**

Theme (nodes)	First order concept clusters	Quotations
<b>Enforcing and policing rules</b> Compliance to the contract was enforced by withholding of acceptance and ultimately payment.	<b>Compliance to contractual demands</b> All aspects of the delivery, processes, documentation and management standards were contracted. The contract specified standards, roles of participants, design rules and architectural schemes compliant with DefOrg standards that were applied strictly.	<i>'It is expected that for the next APMS release ... will include the fix for workflows and a fortiori the hotfix for deficiencies as well as other critical issue fixes, SI must finally adhere to the prescribed processes and provide comprehensive documentation.'</i> [Project Manager Agency] <i>'Some modifications were made to the Use Cases documentation apparently outside of the changes agreed with ACO. Please make the necessary changes to the UC documentation.'</i> [Project Manager Agency] <i>'I cannot remember any change ever being accepted.'</i> [Project Manager PersonSoft]
	<b>Rejection of service deliveries</b> Enforcement of standards or contracted rules was by review and comparison with the contract statement of work. Deliveries could be rejected for even slight deviation from the norms.	<i>'The remainder of the FAT test was cancelled with the understanding that it will need to restart at a later date to be determined.'</i> [Technical Consultant PersonSoft] <i>'If these types of errors are carried through into the formal FAT/SAT testing, HRMDEPT would have to indicate that the test had failed, as the function/action to be performed strictly according to the test script did not exist.'</i> [Department Manager HRMDept]
	<b>Forcing obedience by withholding consent</b>	<i>'(I) remember that very uncomfortable meeting that we had with DefOrg where they basically held those errors to ransom'</i>

Theme (nodes)	First order concept clusters	Quotations
	Payment to suppliers was staged based on delivery of a contracted line item (e.g. training, configuration). Buyers forced suppliers to complete all sub-deliveries within this top level contracted milestone by withholding consent and thus payment. This included delivery of changes outside of the formal contract.	<i>and if you don't fix them this was gonna happen we did end up actually fixing all of them.'</i> [Business Analyst PersonSoft] <i>'The situation has been going on for weeks now and I remain unclear of the answer to the fundamental question, which is: 'when will PersonSoft be paid.'</i> [Account director PersonSoft] <i>'Whilst it's got a wide range of functional capabilities there are some real anomalies in there and they were determined on bringing those out and fixing them and not signing off on acceptance unless we went right back to core product to fix some stuff that had been like that forever.'</i> [Business Analyst PersonSoft]
	<b>Enforcing will on design process</b> The design process was inappropriate to the configuration of COTS. Suppliers were forced to produce documentation to design standards that were never used during the development of the application. This included training documentation, hundreds of pages long, which were never used.	<i>'HRMDept are insisting that their UC layer is turned on whilst conducting the UAT; the problem here is they have over 350 UCs and I suspect won't test and review all of these prior to the UAT'.</i> [Business Analyst 2 PersonSoft] <i>'I must stress that any discussion or agreement on the possible transfer of capabilities or functions from HRMDEPT to NCSA is an internal matter for DefOrg. Therefore any comment or text included by the contractor on this issue (including any recommendation/proposal on who should do what) would be unacceptable.'</i> [Director HRMDept]
	<b>Rejecting by recourse to plans and rules</b> Deliveries were rejected for non-compliance to planned objectives that were redundant – and could be changed only by an amendment. Delaying decisions for more information.	<i>'System Integrator (and DefOrg) has taken the plan as stated three years ago as the baseline – this plan is not sustainable. It is fixed in time, scope and budget and much has moved on in the interim.'</i> [Project Leader PersonSoft] <i>'Both deliverables are rejected, the main reason, among others, being the deviation from the SOW in terms of types of users.'</i> [Project Manager Agency]
	<b>Controlling outcomes to align with own objectives</b> Parties took decisions in line with own objectives rather than the superordinate goals of the project.	<i>'I must say it's a real shock, and not an approach that I support. We have strived throughout the SRR phase to balance our IOC days to enable us to stay within our existing IOC budget. To push for additional IOC funding at this point is highly undesirable.'</i> [Services Director PersonSoft] <i>'... with SI were seeing the introduction of a significant competitor right in the heart of a DefOrg command situation as being in incredibly big threat ... so I think whatever he wanted to get something in there that was not delivered by a major threat to the TestCo world.'</i> [Sales Director PersonSoft]

## 6.7 Evolving power and conflict

The constructs from the analysis were coded across the project phases in NVivo10 and then analysed using a framework matrix to identify any change in emphasis and common themes over time, and the outcome of this analysis is shown in **Appendix J**.

The use of compliance appeared as two main issues, firstly; as a tool to force a focus on contractual demands, mainly arising from a deviation to the contracted time for an item, and secondly, to ensure (micro) compliance to prevailing design-rules and principles. Furthermore, compliance was used to ensure suppliers yielded to functional demands such as the inclusion of extra rules and features outside the specification.

This was carried out by rejection of the software delivery by stating '*a deficiency*' if the desired function was absent. During early stages of the IOC phase there was an emphasis on the application of rules around design, gradually changing over time

towards a rejection of deliveries due to test failures. A common thread was the enforcement of compliance to standards, design rules or schedules above the identification of causal factors of delays or poor quality.

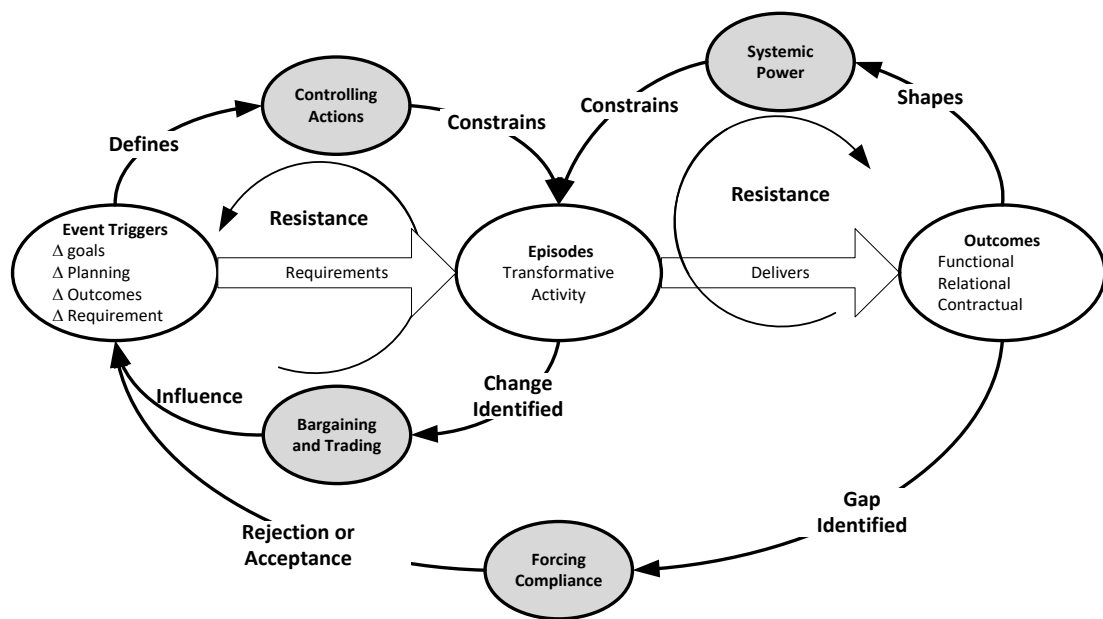
Poor knowledge sharing between suppliers was endemic throughout the project and partner learning was blocked due to a lack of substantial collaboration, and consequently the supplier organisation was fragmented and disorganised. At the starting point knowledge was required by the partners of PersonSoft to understand the basic operating principles of the software, as substantive elements of their work depended on a deep working knowledge of the application. Requests for information or '*enabling*' were rebuffed or late, during design by incomplete and delayed Use Cases, and by a lack of training, release and install documents during physical install. The fragmented nature of collaboration, especially around processes of knowhow development, and a passive attention by SI had a material impact on performance. A latent conflict was observed arising from a mismatch between project demands for COTS and the history of bespoke development at HRMDept that emphasised informality. At contract award PersonSoft had assumed continuity in approaches and relationships and drew on this when negotiating relief from '*onerous*' requirements such as documentation. During early stages the focus was on containment of contract demands whereas later this shifted to influencing HRMDept to enable acceptance. Throughout, PersonSoft drew on past relationships to influence project direction and to overcome strong project governance. Overall both PersonSoft and HRMDept attempted relational influence to direct and control each other's behaviour, although it was observed that the bonds of the earlier relationship weakened as the HRM Director withdrew from day-to-day project activities. As a result other actors within HRMDept emerged with a weaker attachment to the past and aligned more closely to the compliant approach of Agency. This break in continuity emphasised a broader change within HRMDept towards a buyer perspective and acted to change the overall context to be more conflictual and occasionally hostile.

## 6.8 The dynamics of institutional politics

Shown in **Figure 6-6** is how the observed four dimensions of power interacted, with a focus on how differences between outcomes and goals, or deviations in deliverables

created during episodes of work-practice, triggered action to close gaps and correct deficiencies. This framework was derived by mapping the interaction between systemic power and actor agency and the corresponding empirical findings using as a baseline the framework of institutional politics outlined earlier **in section 2.3.4 (see also Figure 2-5)**. Central to this process were the transformative practices that created the service outputs and the role actor and institutional agency plays over all phases of the project to change, disrupt and transform the institution (Lawrence, 2008, Lawrence and Suddaby, 2006). The outputs were matched to goals and conflict arose due to a deficit between delivered outcomes and original goals. This showed how power and conflict arises from a form of disagreement on the outcomes achieved and will result in gap-closing actions (Levina and Orlikowski, 2009). Gaps also appeared within the internal dynamics of the group, when for example a deficiency in the process was noticed, such as gaps in testing, or a requested action did not occur such as a training event. Both of these aspects were observed regularly during the implementation.

If there is no disagreement, or the situation is accepted, then limited conflict was engendered, whereas if there was a disagreement then action was started via the triggering of compliance or, if triggered during the work, by bargaining behaviours. The role of resistance in this process was to mediate or reduce the effects of episodic action or systemic power when this was seen to be detrimental by the parties. The nature of the gap, in either outcomes or internally within practices, was framed by actors as either acceptable or an unacceptable gap that must be corrected. Dependent on what was required an event was triggered as a change via requirements modification, governance or management actions. Whether or not a change in work actually took place depended on whether the event had salience and there was sufficient power applied to overcome inertia and resistance. This feature helps explain why episodes of activity in this particular outsourcing context were quasi-stable and did not adapt quickly. Although poor performance was becoming evident, mediations were dampened by effectively applied resistance.

**Figure 6-6 - The dynamics of power**

Source: Author

During the implementation, the outputs of the process were continually being created and judged against goals whilst cycles of correction were taking place. This was changing the work practices, goals and organisational routines. This process of change was observed to be iterative and more characteristic of a negotiated order where the eventual outcome emerged over time, driven by a process of compromise between what was desired and what could actually be achieved. The final state represented a balance between the parties and was an outcome of power and negotiation where resistance played an integral part in moderating the process. And this is what can be described as the dynamics of institutional politics within this outsourcing change.

## 6.9 Chapter summary: Power and conflict endemic

### The main case findings were:

- The project context showed underlying conflict and cycles of negotiation driven by conflicting objectives for the outcomes, accentuated in this context by an over-scoped requirement and resource-poor suppliers.
- The environment was conflictual as parties furthered their own objectives at the expense of partners. Selective exclusion from decision making occurred and informal relations were used to shape the agenda to match own needs.
- There was a use of direct power, mainly by rejection of deliverables, to force suppliers to yield to buyers' needs and objectives.
- The application of strong control and symbolic threats seems to have had limited effect on the actual outcomes and timeline compliance. Discipline, force, conflictual meetings and even exchanges of letters were used to attempt to discipline and change behaviours but had little impact on the actual work.
- There appeared to be a 'decoupling' from the contractual and control imperatives and the actual processes of work. Actors tended to ignore control when it suited their own objectives.

### Preview next chapter

**Chapter 7** will consolidate the findings so far and fit a process model of change based on a situated change perspective. It will be inferred that change in an outsourcing context is constrained and always subject to modification implying that there will emerge an inherent gap between goals and outcomes within this arena of sourcing.

## Chapter 7 – The evolution of change

### 7.1 Chapter overview

RQ4: In what ways is the nature of situated change emergent and constrained in an outsourcing project?

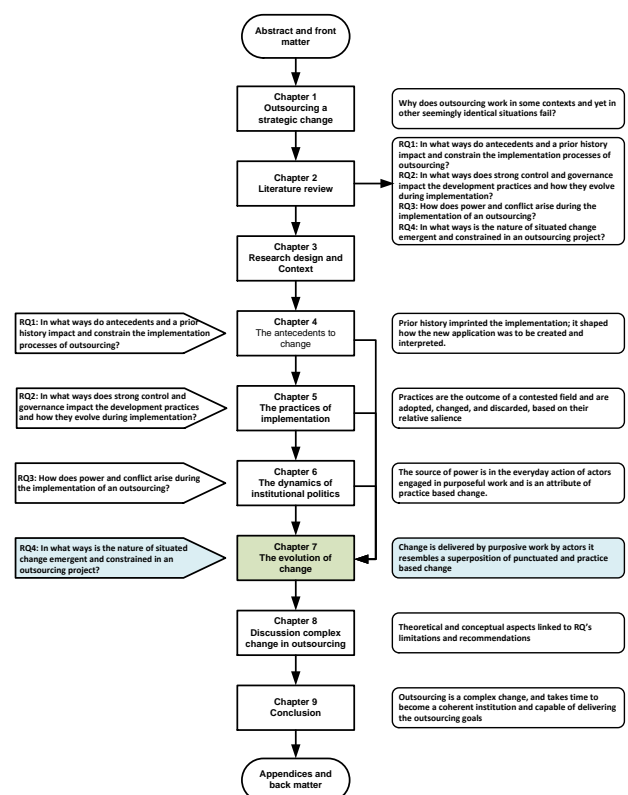
Chapter 7  
The evolution of  
change

Change is delivered by purposive work by actors it resembles a superposition of punctuated and practice based change

This chapter integrates the evolution of practices (**Chapter 5**) with the influences of power (**Chapter 6**) and analyses six change transformations experienced by the focal organisations, HRMDept and PersonSoft, as they designed and implemented HRMSys.

#### This chapter covers:

- A practice based model of six transformation tasks derived from the literature on situated change.
- The evidence for each of the six derived transformation tasks that the case organisations underwent throughout the change process.
- Discusses each derived high level transformation task, the driving and constraining forces, and shows this in a simplified model.
- Summarises the findings on the nature of change and previews the discussion and conclusion.



This chapter addresses the following research question:

**RQ4: In what ways is the nature of situated change emergent and constrained in an outsourcing project?**

## 7.2 Change transformation at HRMSys

The implementation of HRMSys IOC phase took place over a period of 2½ years and finally closed with preliminary system acceptance (PSA) of the initial operating capability (IOC) in July 2013. Prior to the start of the HRMSys project an application (MAPS) based on software provided by PersonSoft was developed in a low key incremental way over a period of more than ten years and the prior ways of working, and the informal culture, formed the starting conditions. Wider scale trends towards centralisation of services led to an initiative to, firstly, formally centralise and control HRM process, and secondly, to create a system within the DefOrg global infrastructure to support the management of Personnel; *'They were doing basically HR management in a distributed way all over DefOrg in different ways, in different places so he saw based on conversations I've had with him an opportunity to centralise.'* [Former sales director PersonSoft]

The procurement organisation of DefOrg, Agency, ran an open tender process for this new system and PersonSoft, encouraged by HRMDept, joined a consortium with a major system house to bid for the contract which they subsequently won. PersonSoft were now working as sub-contractor delivering software within a consortium led by a much larger system integration house (SI). SI was completely responsible to Agency for the delivery of the system, testing, and its integration onto DefOrg's infrastructure, whereas Agency was responsible for the provision of the service to HRMDept. During the implementation, HRMDept and PersonSoft's relationship changed from an informal dyad creating a small departmental based application, to one where they worked under the control of the DefOrg wider organisation managing an enterprise system of record.

### 7.2.1 Transformation tasks during HRMSys IOC

During the analysis of the implementation, (see **Chapter 5**) a process mapping was carried out (**figures 5.3 to 5.11**) to link the steps observed to derive an overall trajectory of the project as was shown in **Figure 5-12**. Included in the figure are the critical incidents, verified in the post IOC interviews, which materially impacted the progress of the project at that point in time. From this six transformation tasks, changes in practices, undergone by Personsoft and HRMDept were derived. These are

shown as transformation tasks **(I) to (VI)** below and in total represent the extent of the change undergone by the parties as they transitioned from an adhocracy to operate within a formally structured project environment.

- **Transformation I:** Formal project governance and planning. Moving away from a scheduling and planning approach that was advisory to one strictly controlled and contracted. Control based on contracted line items (CLINS) and an agreed schedule.
- **Transformation II:** Requirements and scope changes specified and contracted. Any changes to the project scope, personnel, or objectives were subject to a contract amendment. Thereafter the changed scope, for example, was defined in a new requirements traceability matrix (RTM) that represented the contracted deliverables.
- **Transformation III:** Working within a supplier consortium – from direct one-to-one interaction between the supplier and HRMDept to an extended chain. PersonSoft and HRMDept worked within the confines of a project organisation led by system integrator (SI) and Agency respectively.
- **Transformation IV:** Using design rules for codifying business need – the business requirements had to be specified prior to development. The functional delivery (system behaviour) and technical specification to deliver the requirements were then verified and agreed in milestone processes such as the 'Critical Design Review' (CDR).
- **Transformation V:** Controlled configuration and release of software – each release of software had to be 'baselined' and accompanied with release and installation notes then regression tested. Physical implementation, and system management, was carried out independently from HRMDept and PersonSoft.
- **Transformation VI:** Testing and accepting to defined standards – baselined software was semi-automatically tested against test scripts based on the expected behaviour of the functions defined within the design use cases. The software was further tested for security compliance and finally user acceptance tested (UAT) using written down scripts or test steps.

For each of the transformations the case data was re-analysed and summarised across a framework representing links between control, process and climate dimensions within the transformation task (Lawler et al., 1974, Miles and Huberman, 1994, Miles et al., 1978). Furthermore, additional quotations were extracted from the case material and included within the transformation narrative to provide a connection to the earlier practice and power findings in **Chapter 5** and **Chapter 6**. The sections will start by describing the transformation, its principal, proximal and distal effects, and will then illustrate this in a process model showing the interactions of the change drivers and constraints.

### 7.2.2 Process model of change

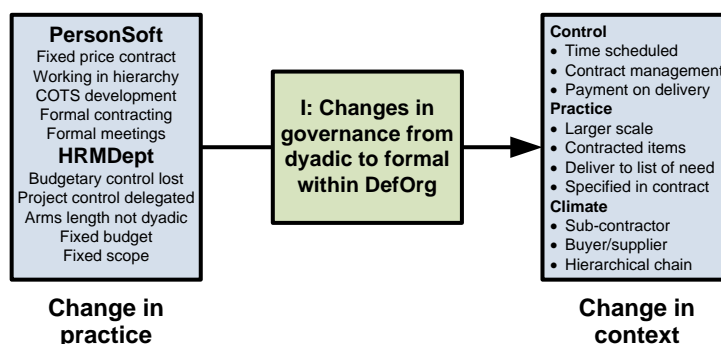
This chapter is underpinned by the theoretical concepts of institutionalisation where institutionalisation can be regarded as the grammar of change and structuration as the process model describing how the change ‘takes place over time’ (Barley Tolbert 1997:100). The analysis considers two main aspects, firstly, how action and structure are recursively related, and secondly, how in periods of constrained work improvising and innovation can occur (Orlikowski, 2000). In order to graphically illustrate the constraints to change and summarise each transformation task a process model of change was derived by the author from the empirical results and is shown as **Appendix M**. This model will be used to summarise the enablers and constraints acting upon each transformation task. The model is underpinned by the notion that environmental and organisational constraints can restrict change and as a consequence the end-outcome can become emergent in resource constrained context (Bennett, 1998, Pfeffer and Salancik, 2003). Especially during software development, at the heart of the HRMSys outsourcing, change can be emergent and embedded in the micro dynamics of the practices of creation undertaken by the consultants and developers of PersonSoft and TestCo (Allison and Merali, 2007, Orlikowski, 1996, 2000). This notion of emergence can run counter to ideas of technological determinism inherent in views of development based purely on rational planning (Truex et al., 2000). From this perspective, divergent interests within a development process can be shown to engender structural conflict and improvisation. Innovation and problem solving can occur driven by the needs of the development process and is an outcome of a complex


process of interaction, creation, review and negotiation (Allison and Merali, 2007). And demonstrates how implementation is less a technical issue and more a process of social interaction (Pishdad and Haider, 2013). By analysing the implementation tasks across the dimensions of control structure, process and climate the analytical approach aims to summarise the principal constraints and enablers impacting each transformation task and illustrate how almost all of the tasks were constrained in the HRMSys context (Miles and Huberman (1994)). This adds up to a general conclusion that the overall transformation was incomplete and emergent.

### 7.3 Transformation (I): Formal project governance and planning

PersonSoft and HRMDept moved from an earlier era where their interactions were mediated by a more informal contractual control to one tightly monitored and controlled within a contract focused on process control and prevention (Weber and Mayer, 2011). This type of contract frames how the initial relation between suppliers and buyers is perceived and orients the parties to take specific postures during the implementation, buyers focusing on regulating behaviour, and suppliers responding with an instrumental focus on scope, with as outcome, a tendency to not cooperate and be flexible (Poppo and Zhou, 2013).

**Figure 7-1 - Transformation I changes in governance**



The influence of the principle drivers; control, practice and climate change will be discussed, drawing out the main features of the barriers and carriers of change and also indicating some of the proximal and distal consequences of actions within the transformation I dimension, **Figure 7-1**. Shown as **Table 7-1** is the analysis for this section that also includes an indication of the emergence of power and conflict observed during the project (shown as: ) and a change process model is also

shown later as **Figure 7-2**.

### 7.3.1 Structural and control

The main structural change was the dissolution of the old ways of managing projects, from a dyadic collaborative relationship, to one formally governed and controlled within an extended supply chain, and where HRMDept and PersonSoft were now at arms-length. The HRMSys contract was a fixed price project predicated on a known requirement, a defined set of deliverables, and the mechanisms to create them. The project also had to be delivered within a strict contracted timeframe. The contract had been accepted by the suppliers who had assumed that during execution it could be adapted and made more feasible. However this was not the case, and rather than a loosening of the contract, its tightness was further accentuated when additional changes were introduced within the fixed price concept.

*‘But it was never going to be done in (the) timescale, it was never, never going to be done, and we wouldn’t have won the bid if, if we had gone in with a non-compliant bid, so it was getting the door (open), establish the relationship we have close working relationship with (name) and umm and work it internally, engineering more time if that was required or cutting out requirements...in fact neither happened.’[Services Director Personsoft]*

A further confounding constraint was the submission of a bid by the suppliers emphasising the COTS compliance of MAPS in line with the contract.

*‘(The requirement for HRMSys) ... was developed based on an assessment of generic capabilities inherent in a variety of COTS HR tools. It is the Purchaser’s expectation that these requirements can be met through configuration of existing COTS HR capabilities rather than substantial development of custom software.’  
[DOC-MEM-AG]*

This was broadly untrue as the application was fundamentally a bespoke framework. Furthermore, it was assumed work practices would not be substantially changed by the project and formality such as the heavy documentation would be in practice limited. This later assumption from PersonSoft and HRMDept led to a chronic underestimating of the resources needed for the development and validation. Although the problems of enhanced formality were understood, at least two years

before the start, it was not acted upon to increase resource availability (see **Appendix H** for example). PersonSoft had expected the actual development practices within HRMSys to replicate their earlier ways of working. As a result the unexpectedly high documentation load and the formalisation of work processes that occurred, especially around design, exposed further resource shortfalls. The impact of an over-scoped project, in terms of supplier capabilities, and the imposition of strict contractual controls engendered continuous conflict and disputes over the contract. Suppliers were unable to expand resources due to their own financial constraints and the project was chronically understaffed throughout the IOC phase.

A major strategic error by SI and Agency was made at the start of the project and underpinned an ongoing area of dispute. Increasing the scope without allowing a plan change, or an increase in resources, within a chronically under resourced project, led to repetitive schedule failure, failures of corrective actions and continuous hostile exchanges and threats. Resistance is the work that actors in organisations undertake to mitigate the effects of institutional power expressed in control and structure and appears as questioning legitimacy and challenges to institutional power (Lawrence, 2008). The updated contract was never accepted by PersonSoft and TestCo and the schedule was always seen as not feasible and led to patterns of repeated returning to the constraints of the schedule as a primary cause of problems and using this to deflect criticisms for failing development and testing processes. Enforcement of structural control was by multiple meetings, reviews, letters of complaint, demands for more effort, or by the use of threats such as the use of '*liquidated damages*', a discursive practice that became ubiquitous.

### 7.3.2 Procedural and practice

Strong project management formed a major change in organisational routines. Project control was in place prior to HRMSys but was more based on a notional time box idea where a set of functions had to be delivered, within a set time, for an agreed amount of money. If the time or money ran out then the functions delivered to that point were agreed as sufficient. This had two side effects; firstly, the delivered scope depended on the resources available and was effort based, and secondly, the focus is on functions delivered and not on formalities such as project management or testing. In the new

project environment, Agency adopted a strong preventative regulatory approach that emphasised formality, rules and '*box ticking*' demonstrating risk aversion - a control posture typical for a public sector bureaucratic organisation (Langfield-Smith and Smith, 2003). Furthermore, the preventative focus and emphasis on project management controls, applied via SI, focused the HRMSys project organisation on timeline compliance and not particularly on output achievement (Weber and Mayer, 2011).

The focus on the time-line as prime control led to a lack of attention on the emerging problems in delivery, and a decision filter was observed biased towards focusing on immediate (short-term) issues at the expense of attending to longer term systemic problems. As a consequence the actual IOC live implementation of the HRMSys was twelve months behind schedule and the final system acceptance delayed by two years. The total scheduling failure from the supplier's perspective was therefore 180%. The main implementation deadline was effectively fixed to the general movements of personnel around the organisation, a '*roulement*', which took place for military personnel. During this period the system was fully occupied with the movements and the personnel within HRMDept would be unavailable for any system implementation activities. This fixed window of opportunity restricted the end-dates for the IOC phase to specific points in the calendar.

Agency and SI sought to maintain the contracted schedule. However key milestone dates were constantly being delayed, and the end date was being squeezed and more tasks towards the end of the project stage were attempted within a shrinking time-frame. This is a form of '*stretch and squeeze*' project tactic (van Oorschot et al., 2013). This stretching of earlier project milestones, while minimising the extension of the end date, caused two main side effects; firstly, time pressure on the development and testing, with increasing demands for fixes caused by errors, and secondly, the negotiated removal of functions. In order to meet the end dates functional requirements were removed or delayed, especially those consistently failing testing. The other aspect of this '*stretch, squeeze then slim*' strategy was for the supplier team to negotiate the move of functions from IOC to a later full operating capability FOC phase on a new technology.

The project was inherently unfeasible and over-scoped before the new

requirements were added. Furthermore, inappropriate assumptions led to a chronic under-resourcing in the critical supplier PersonSoft. This implied a widening scope was confronting restricted resources and this led to cycles of re-planning as new deadlines were consistently missed. Conflict arose from threats from Agency to withhold payments and between SI, Agency and PersonSoft as timeline pressure emerged from systemic problems in delivery and supplier coordination.

### 7.3.3 Relationship and climate

The project was organised as an extended supply chain and was physically distributed across Europe. The coordination of the project was by SI in Brussels and this quickly exposed problems in partner learning and knowledge transfer that remained in place throughout IOC. Although project coordination was broadly effective the actual work of creation and testing took place at the locations of PersonSoft and TestCo, who were geographically distant, and communicated via email and telephone. PersonSoft and TestCo did their work largely independently with no joint activities and limited face to face interaction. This lack of interaction has been shown to be a major element in blocking partner learning. The arms-length approach stated in the contract, and policed by SI, placed PersonSoft as a sub-contractor behind SI and HRMDept behind Agency as a user organisation. This broke the former close interaction between these two parties and created a problem in that the holders of the basic knowledge of the business and supporting application were out of direct communication. This change in governance caused a major shift in the relation and climate between PersonSoft and HRMDept and as was stated by the HRMDept Director, *'PersonSoft had to be a lot more professional in the way that services and support were delivered in the future.'* Furthermore, they now operated at opposite ends of an extended supply chain and the contractual ownership was no longer between them, and their roles within the project were formalised.

Resistance to this control was observed by actors circumventing formal meetings, counter claims and attributions, absences and exclusions from meetings and especially by appeals to former partners to overrule Agency and SI's. Several unofficial meetings were held between PersonSoft and HRMDept where agreements were made on project scope and approach and how to force through these changes on Agency

and SI. Resistance to control appeared early and was strong during start-up and continued for the first three to six months whilst PersonSoft and HRMDept adapted to the new regime. The control was partially mitigated, made less strict, when old partners took joint action to reduce the power of their respective contractual partners. These aspects of resistance and power are shown highlighted in Table 7-1 below.

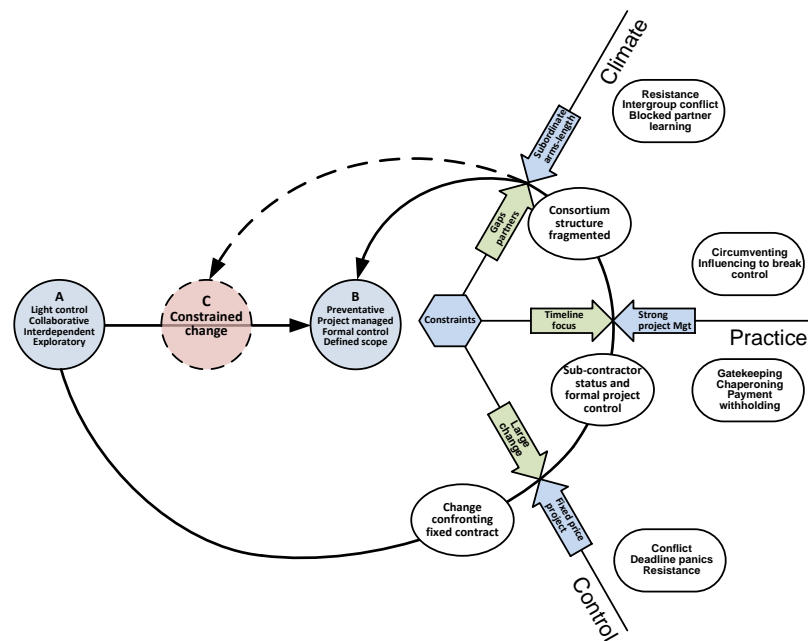
**Summary: Strong control impeded adaptation**

There were four principal features to change transformation (I), firstly a move to an organisation field where a strong preventative control was evident. Secondly, there was an erosion of the old collaborative relation and its replacement by a closed project structure. Thirdly, there was the adoption of formal control mechanisms mediating actions and behaviours, and finally, the delivery of a product had to occur within a defined and documented scope. These aspects are illustrated in **Figure 7-2**.

A fixed price and defined scope within a formal project process and a consortium context acted as the principle drivers transitioning PersonSoft and HRMDept away from their earlier informal approach to one structured and formalised within a contract. A large change, immediately introduced at the project start, acted to make an already doubtful activity non-feasible. Formal project control, and possession of a fixed price contract, prevented full adaptation to the new situation. There was limited flexibility in responding to this contingency and suppliers and buyers resisted any change. The consortium was new, members had not worked together before, and effective group processes were slow to develop, and this enabled an ineffective supplier response to change.

The actor's behaviours were constrained by the strong control posture adopted by the buyers and exemplified by strict contract management and a time line focus. However, resistance and political action to this control attenuated its influence, adapted and constrained it, such that the change transformation was limited and partial.

Figure 7-2 – Process model Transformation I



Source: Author

Table 7-1 - Changes in governance


Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and Control</b>	Move from a dyad to controlled project environment (PS, HRM).	Contractual connection between PersonSoft and SI and existing contract with HRMDept.	Control outside HRMDept and PS.	Conflict over payment delays and withholding as well as apportionment of liquidated damages.
	Accepting a fixed time, scope and cost project (PS, HRM). Assumption of a COTS project not bespoke (SI, Agency).	Assumption by SI that scope could be changed after award proved unfounded. Embedded uncertainty of COTS concept.	Project IOC phase over scoped and plan not feasible. Continuous resistance and re-planning.	No capacity for change. FOC delayed until scope agreed by suppliers.
	A defined fixed requirements list crystallising known business need (PS, SI).	Large requirement change had occurred during the two year delay in the start.	Forced extension of requirement validation phase. Requirements added significant delays to design completion.	Configuration started under risk three months before design complete.
	Substantial formality and detailed documentation were a large part of the contract (PS).	Almost total lack of up to date documents for the application at PS.	Documents had to be created in media res and drew down capacity.	Long delays in creation of documentation.
	Defined contract line items – deliverables organised around complete functional elements (PS).	Complete deliverables packaged for delivery limited flexibility for minor errors.	Agency used control to dominate and force suppliers to comply to all requirements.	Small errors resulted in full testing and release cycle.
<b>Procedural and Practice</b>	Strong project management processes and procedures introduced (PS, HRM?).	Limited experience within PS of working within a formal partner based control system.	Loose control over work practices by deadlines decided on contract times not real work effort.	Adoption of controls in general at PS took place slowly.
	Control exercised by reference to timeline compliance not on output functions (PS).	Lack of visible and managed critical path not effort based planning.	Focus on timeline compliance lack of attention on continuous delays and underlying causes.	Stretch and squeeze then 'slim-down' project planning as delays mount during project.
	The primacy of timeline in contractual control (PS). Deliverables contracted and penalty for delay (PS).	'Box ticking' and meeting the schedule before close monitoring of partners.	Limited awareness of emerging problems in design and development.	Panics and conflict to meet deadlines.

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
	All deliveries via Prime contractor for formal release (PS). Payment only after completion and acceptance of a deliverable (PS).	Alignment of the partners and setting up IT processes to manage delivery across distance were slow to emerge.	Alignment of all suppliers in a project sense emerged but practice gaps remained.	Payment for suppliers held up for one year until ceded to compliance – payment used as a strong disciplinary tool.
	All contacts mediated and agreed between SI and Agency (PS, HRM)	Gatekeeping by SI to control access between PS and HRMDept.	Long and over-attended and sometimes conflictual meetings. Chaperoning of PS by SI and Agency.	Strong resistance and circumventing of this control – PS persuade HRMDept to countermand this directive.
	All deliverables subject to formal quality review and then acceptance by Agency and HRMDept (PS).	Review process complex, time consuming and repetitive due to errors. Focus on process not content.	Intense focus on documentation of COTS and plans. Resistance to exposure of internal IPR to review.	Loss of capacity within already resource constrained project.
<b>Relationship and Climate</b>	Subordinate to and reporting via prime contractor (PS). Budget control to Agency and SI.	Some resentment of PS subordinate role and loss of authority to Agency HRMDept.	Raising utility of governance model between HRMDept and PD – nostalgia for old ways of working.	Some resistance and friction arising due to control of prime over day-to-day business.
	Arms-length between HRMDept and PersonSoft (PS, HRM). Direct contact blocked at start of project (PS, HRM).	Unofficial meetings arranged between PS and HRMDept at user groups.	Parallel projects within DefOrg and incumbent at HRMDept breached this control.	Maintenance of prior relations inducing new personnel into history between PS and HRMDept.
	Dispersed team across Europe blocked day-to-day interaction (PS, TC, SI).	Remote technologies and virtual meetings but time difference and coordination across countries difficult.	Partner learning throughout the project blocked disputes resentment and lack of cooperation.	Tacit knowledge transfer and knowhow blocked throughout caused friction and delays.
	Specific content, application and business (buyer) knowledge only with PersonSoft (SI, TC).	No oversight or understanding of application capabilities by TC or SI.	Resource dependence on PS by other consortium members.	Slow and incomplete knowledge sharing from PS continuous throughout.
	Quality review resented by PS developers and consultants (PS).	No experience with working with QA processes to this depth at PS and HRMDept – had to be learnt.	Minimising exposure and questioning utility of process. Generally resistive of oversight.	Improved software delivery and quality of documents.

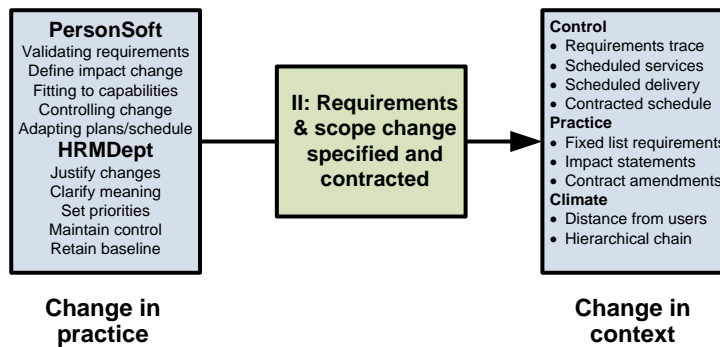
## 7.4 Transformation (II): Requirements and scope changes

Prior to HRMSys, PersonSoft and HRMDept managed changes in requirement based on a review of what had been developed derived from a loose description of what the application could achieve. This initial view of the functional requirement was iteratively adapted by assessing how well the function performed its objectives by a demonstration or walk-through of what had been created. However, managing requirements for HRMSys was formal, and based on agreed changes, specifying exactly what must be done, and then contracting for the task. The added complexity of the HRMSys project was that there was no scope for extending the budget and very little change permitted to the contracted delivery timescales.

The influence of the principle drivers; control, practice and climate change will be discussed below, drawing out the main features of the barriers and enablers of change and also indicating some of the proximal and distal consequences of actions within the transformation dimension II, **Figure 7-3**. Shown as **Table 7-2** is the analysis

for this section that also includes an indication of the emergence of power and conflict observed during the project (shown as:  ) and also a change process model is shown as **Figure 7-5**.

**Figure 7-3 - Transformation II Requirements and scope changes**



### 7.4.1 Structural and control

Two critical changes occurred right at the start of the project; firstly, a set of new requirements covering a new functional area was added, and secondly, the inclusion of the current incumbent (MAPS) as a starting baseline with its embedded history of functional additions and faults. Furthermore, a large number of requirements within the initial bid scope were obsoleted or no longer required by the business due to wider scale organisational restructuring within DefOrg.

These changes acted to introduce uncertainty within a detailed contract environment that emphasised clarity in delivery. Furthermore, the resulting conflictual approach adopted by Agency/HRMDept set expectations of negative exchange relations that proved resilient throughout the project (Weber and Mayer, 2011). This supports the contention that it is difficult to contract for flexibility and responsiveness unless there is a credible assurance that suppliers will be rewarded for flexibility, especially when change occurs (Dyer and Singh, 1998). The inclusion of the changes resulted in a negotiation. The initial orientation of the contract owner Agency was an attempt to negotiate without disturbing the project's overall contracted budget as in their view, *'these changes should be cost neutral so no authorization for extra funding will be necessary.'* To engineer this, the value embedded in the obsoleted requirements was claimed and offset against the new requirements. In addition, the incumbent already contained (in some form) many of the requirements listed in the

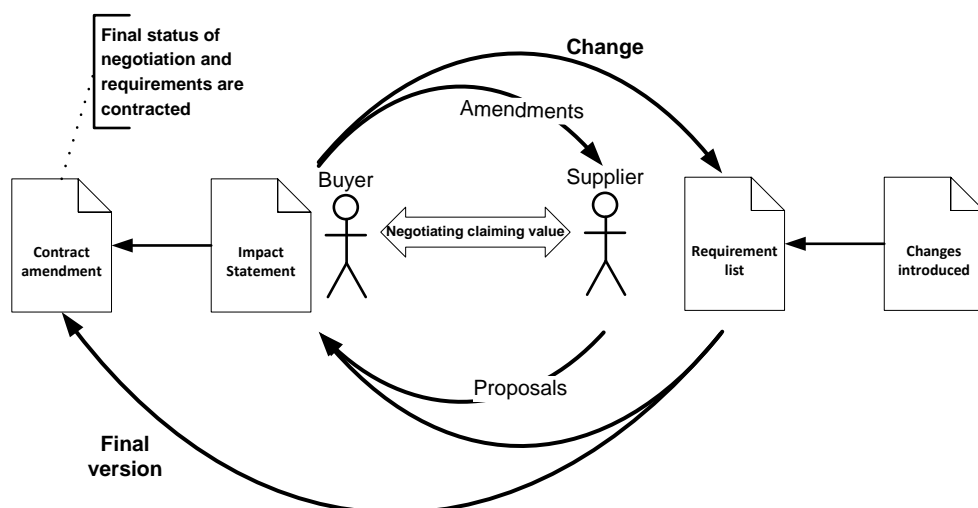
contract statement of work. This embedded value was also claimed as an offset to make space for the new business need. Suppliers also showed opportunistic practices by expanding the impact of the changes and suggesting that the timescales for requirements stated already in the contract were indicative and not representative of the effort that the new business need implied.

The inclusion of new requirements, and the incumbent application as baseline with its embedded set of functions, added significantly to the perceived over-scoping of the project. This created a problem that was never fully addressed and became the source of latent and recurring conflict and resistance throughout the IOC phase.

### 7.4.2 Procedural and practice

Changes to the project occurred through a '*contract amendment*' that was the outcome of a negotiation process that suppliers initiated based on a collation of changes in requirement. Changes were codified in an impact statement that set-down the impact in time, cost, and functional coverage and represented the current state of the understanding between the parties of the new project scope. Cycles of changes to this impact statement occurred between suppliers and buyers, as they sought to minimise or maximise change based on their own objectives as shown in **Figure 7-4**.

**Figure 7-4 - Cycles of contract amendment**



Source: Author

The time reserved for this process was only two weeks, although this was extended to six weeks due to repeated amendments. Furthermore, as the main focus turned

towards a negotiation of scope the actual objective of this phase of validating the requirements received less attention and instead became a debate on interpretation.

*‘For me kinda started at that point you could interpret that requirement in a number of ways ... So it became interpretive, argument and there is no absolute, so you end up in a series of iterative arguments.’ [Services Director]*

As a consequence final requirement scope and scale definition were delayed and due to intense time pressure many aspects of the uncertain requirements were left unresolved until design when large gaps in understanding emerged. In summary the focus of this validation process was not on validation but was confirmatory, restating the contract, and became a process of fitting the changes within the contracted time and cost budget.

### 7.4.3 Relationship and climate

There was emerging resentment that HRMDept used the validation process to extend the scope and in effect to bring into the HRMSys project the old incumbent system MAPS. It was also stated by Agency that *‘no regression’* was allowed. What this meant was any existing functions within the incumbent were not lost in the new system, and it also implied a very large and unknown extension of scope. The weakening of social bonds between HRMDept and PersonSoft, and the emergence of new actors with limited history with the company, and the stepping back of a key sponsor, also led to a shift in relation towards a formal buyer/supplier relation with a consequent shift towards instrumentality and contractual focus. Finally, a gradual shift in dependency was observed within the supplier group away from SI towards PersonSoft as *‘Both partners SI and TestCo had no experience at all with the delivered application.’* SI and TestCo had no substantive experience or knowledge in the application or business domain and became wholly dependent on PersonSoft for all deliverables.

*‘...I think once we started to take the lead for good or bad it started to work. And that’s when the relationship with TestCo started working a lot better. I think it was because (name) said this is not working we took the reins and ran with it and I think SI were quite happy for us to do that. As a figurehead they were in charge but on the ground they were not.’ [Business Consultant PersonSoft]*

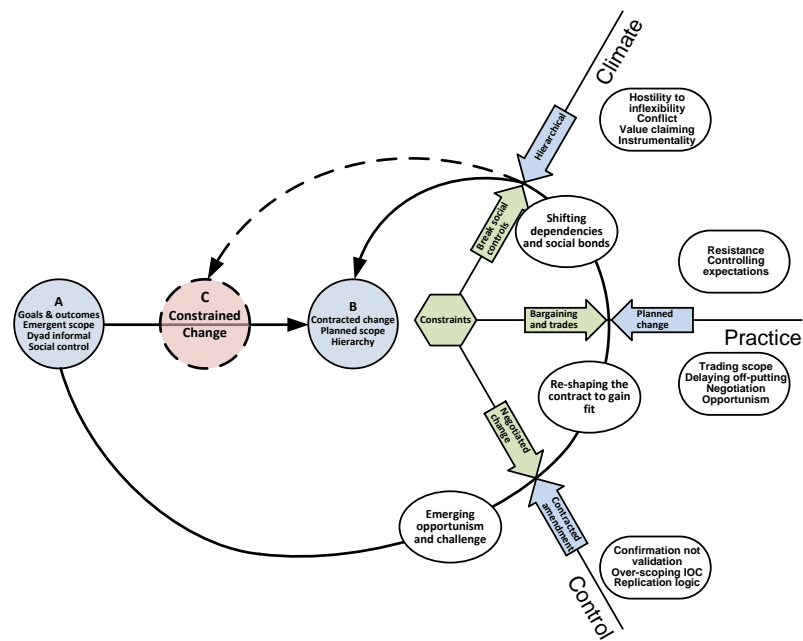
**Summary: Lack of stability undermined fixed contract**

A strict regulatory regime assumes a degree of stability and complex contracts can be defined covering all contingencies and risk to protect the buyer and control supplier opportunism. A fixed price contract shifts most risk towards the supplier and demands that the scope is well understood. Furthermore, in principle, change requests within a fixed contract environment have many drawbacks and should not be allowed by suppliers (van Cauwenberghe Nayima, n.d.). The corollary of these factors however is a risk of lack of adaptability or response to significant change. As a consequence the application of strict control was constrained in two senses; firstly, the significant delay in starting and the large changes in the DefOrg business model had made many requirements obsolete, and secondly, completely new business needs had emerged.

Large changes in the gap between contract offer and the start, and the emergence of new requirements, had made the assumptions underpinning the original contract unsustainable. And the original plan was now unachievable. Cycles of negotiation emerged as suppliers sought to bridge the gap between what had to be done and the contractual constraints. The negotiating process shaping and modifying the plan and in turn became constrained by it. The paradox in this outsourcing project was these large changes did not trigger a fundamental re-assessment, and the project started as if very little had happened, when a more appropriate approach would have been to begin again.

The change to formally managing requirements and scope is illustrated in **Figure 7-5** by the transition from position (A) to (B), where the focal organisations' collaborative development process was eroded and replaced by a controlled elaboration of requirements that creates a list of what will be contractually delivered. The influence of the constraining elements, for example the need to negotiate the change, is to moderate its effect and this is shown as altering the overall transformation pathway, such that the degree of change is emergent and constrained and is shown as point (C).

Figure 7-5 – Process model Transformation II




Source: Author

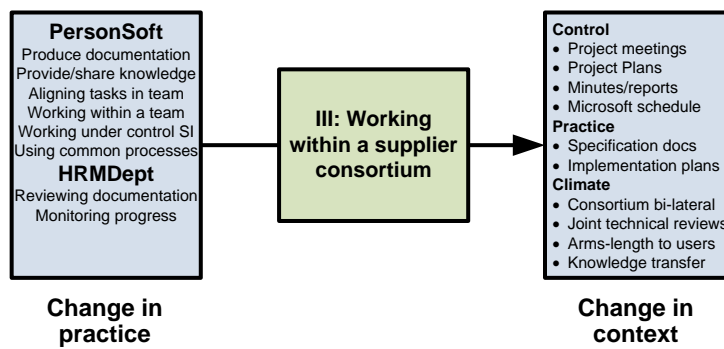
Table 7-2 - Requirement and scope change

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and Control</b>	Change controlled by a formal impact assessment then a contract amendment (PS, HRM).	Negotiated process buyers maximising inclusion at neutral costs.	Opportunism emerging suppliers/buyers as struggles over resources and feasibility emerge.	Focus on suppliers strongly on scope control not innovation.
	A large change in business requirements occurred in the two years between contract award and start (Suppliers).	Negotiated process buyers maximising inclusion minimising implied change. (Suppliers exact opposite).	Opportunism emerging suppliers and buyers.	Focus on suppliers strongly on scope control buyers on flexibility and inclusion of functions.
	Inclusion of the incumbent application as a baseline and core of the new system (PS).	Expansion of scope with essentially unknown and extensive requirements. Assumption of stability of incumbent application by SI.	No 'regression' loss of existing functions as aim of buyers. Incumbent functions were assumed delivered and complete already.	Implicit assumption that own developed software (HRM) must be included. Incumbent 'full of bugs' caused major problems later.
	Content of delivery and technical requirements specified in the statement of work (PS).	Suppliers push back as some functional and non-functional needs impossible in the current technology.	Negotiating the delaying and off-putting problem functions to later.	Over scoping FOC.
	Contracted schedule and plan (PS). Confirmation of contracted requirements process.	Confirmation not validation as aim of Agency completed within limited time period.	Validation as constraining scale of requirements – time pressure truncated actions.	Meaning of requirements only emerged during design when users could see something.
<b>Procedural and Practice</b>	Impact statement created - listing new and obsolete requirements.	Negotiation and review cycles as buyers/suppliers shaped outcome to match objectives.	Maintenance of budget realignment of requirement serials.	No future impact statements were accepted – no budget available.
	Comparing delivered incumbent serials with specification to gain capacity for changes.	HRMDept listed functions in baseline and for which 'they have already paid'. PS states still need to configure.	Resistance to demands to cede existing functions in incumbent and release implied resource usage.	Not resolved left until design – not solved during the project.
	New requirement mapping to existing within the contract and statement of work.	HRMDept and IV&V claiming new functions substantively covered by interpreting existing requirement list.	Resistance and negotiation on interpretation of 'vague' requirements to be inclusive. Emphasis PS on differences.	FOC requirements and approach subject to much more critical review by suppliers.
	Scope maintenance by PS scope extension by HRM.	Management of expectations to control HRMDept perceived opportunism.	Controlling expectations meant negotiating reduction to within feasible ability of	Continuous throughout the project – HRM leveraging power to gain advantage and

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
			project and application.	value.
	Schedule maintenance and adaptation (Suppliers).	Continuous adaptation of the schedule to meet with actual outcomes.	Timeline as schedule of expected deliveries distinct from managing project.	Lack of foresight on emerging problems contracted dates not delivery schedule.
	Requirements traceability matrix (RTM) as prime carrier of delivery status between suppliers and buyers.	Prime tool used between suppliers as checklist for controlling the scope.	Forced focus on linking application specifics and support to delivered functions.	Continuous 'interpretation' of whether delivered or not.
<b>Relationship and Climate</b>	Distance between HRMDept and PersonSoft emerging.	Distance across supply chain broke tacit social control process between PS and HRMDept.	Some conflict as HRM sought to take advantage of contracted situation to push extension of scope.	Passive control over HRMDept by key sponsor allowed others to come forward with no history with PS.
	Hierarchical chain emphasised that PS and TestCo 'behind' SI even in project meetings.	PS and TestCo referred to in third party by Agency and sub-ordinated.	Emphasis on SI a prime and ultimately responsible for delivery of contract.	Lack of any project delivery or application knowledge shifted control to PS over time.
	HRMDept adopting a buyer mentality maximising contracted opportunity to increase gains.	Recourse to contracted demands detailed interpretation SOW against PS.	Lack of acceptance previous lack of rigour and excuses from PS.	Some reduction in flexibility between old partners.
	Hostility between suppliers and Agency emerging due to inflexibility.	Strict and formal (over detailed) review processes create a hostile and strained environment.	Repeated cycles of repair of documentation due to strict line by line interpretation of compliance to contract.	Hostility towards IVV and Agency.

### 7.5 Transformation (III): Working within a supplier consortium

PersonSoft lacked the size and capability to enter a formal bid process at DefOrg for the acquisition of the HRMSys application. HRMSys was a centrally managed system of record and its implementation involved the embedding of the application within DefOrg's complex infrastructure as well as interfacing the application with other core systems. System integrator (SI), seizing an opportunity to deepen their business with DefOrg formed a consortium with PersonSoft based on the latter's track record with HRMDept. A three supplier consortium was formed of PersonSoft, SI and TestCo to compete for the contract which they subsequently won. There were three principal tasks within transformation (III) **Figure 7-6**; firstly, learning to work together as a group, secondly, understanding, creating and sharing knowledge, and finally, adopting the rigorous standards, rules and procedures being demanded to coordinate activities. Shown as **Table 7-2** is the analysis for this section that also includes an indication of the emergence of power and conflict observed (shown as: ) during the project and also a change process model is shown as **Figure 7-8**.

**Figure 7-6 - Transformation III working in a consortium**

### 7.5.1 Structural and control

The contract emphasised the primacy of SI in controlling subcontractors and ensuring effective delivery and the avoidance of gaps in service provision. The task split attempted to emphasise the inherent capabilities the parties brought to the consortium, however all delivery functions depended critically on good interaction, and handovers of information and expertise, between the parties. The activities of testing, training and integration in particular depended critically on acquiring deep knowledge of how the application worked and the business context within which it was to be implemented.

*‘It was totally unfair (on them) because obviously TestCo had always had people on the ground working at DefOrg but none of the guys who were assigned to HRMSys had ever worked in that industry before so they didn’t really understand how they worked.’ [Project Manager PersonSoft]*

This factor placed extra demands for resources on PersonSoft who were the smallest member in the consortium in relative size but who had the largest stake in the project.

Partners within a consortium need to be able to exhibit their capabilities in a clear and unambiguous way, and formation of an alliance from this perspective needs to ensure complementary capabilities are available from the start. However, selection of the sub-contractor TestCo was primarily on cost. TestCo was a near-shored outsourced subsidiary of a major IT system house that was headquartered in Romania. SI in selecting this partner did so mainly on the cost of the testers and trainers being around one third that of central Europe which would reduce the overall bid price substantially.

To maximise this benefit all peripheral tasks to application development,

delivered by PersonSoft, were assigned to TestCo in the bid documents. These tasks were: system integration, training development, training management and all aspects of testing and release. This overall task assignment represented around 60% of the project's effort. This was a strategic error committed at the bid stage of the project. Although TestCo had competent analysts and IT professionals, they had no personnel experienced in the product to be delivered, the technology of the product, or the business context into which it was to be delivered, and no one from TestCo (or SI) had ever worked with PersonSoft before.

*'(the account director SI) contracted TestCo Romania as being a cheap source of capability so his bid was low because he was using mainly our expertise to fulfil their part and I think that that backfired significantly.'* [Sales Director]

TestCo would be entirely dependent on their partners to support them in the project and furthermore would need in-place processes such as on-boarding (initial induction to the project) to become effective during the start-up of HRMSys. No planning for this was done, and as a consequence TestCo were largely ineffective for the first six months, placing a burden on the project that was never entirely resolved.

### 7.5.2 Procedural and practice

*'Both partners SI and TestCo had no experience at all with the delivered application,'* or any experience working with PersonSoft prior to the HRMSys contract. This meant initial trust and a working environment had to be created; *'at the beginning of the project we had to learn how to work with the various players particularly our good friends TestCo.'* During the early stages TestCo, responsible for testing and physical implementation, had to acquire from PersonSoft detailed knowledge on how the application worked and delivered its functions:

*'The other main problem during the early stages of the project was ...learning how to work together in a much more formal environment... and in terms of access between people who knew how the application worked and those who used it.'* [Business Analyst SI]

Formal testing involved the scripting (step by step instructions) of the detailed steps to be executed in order to test all the interactions of the application. Without a good working knowledge of the application, only available from PersonSoft, this was

impossible. In a similar way designing a training programme without complete understanding of how HRMSys interacted with users was difficult especially at the beginning, when *‘there was a lot of misunderstanding of (the) solution architecture.’* High levels of shared knowledge were essential for success and would have allowed PersonSoft’s partners, TestCo, to exploit and demonstrate their own competence in testing. However, this did not happen and this resulted in large knowledge deficits within the team. Overall there was limited explicit knowledge transfer, and how content can be interpreted, throughout the early stages of the project, and an absence of working application documentation. This meant initial partner learning was slow to develop (Blumenberg et al., 2009). This resulted from a long history where PersonSoft at HRMDept had not needed to provide any substantive application documentation; *‘...we didn’t write anything down and I am not going to say it was all on-the-fly but we did have fairly slim documentation.’ [Business analyst]*

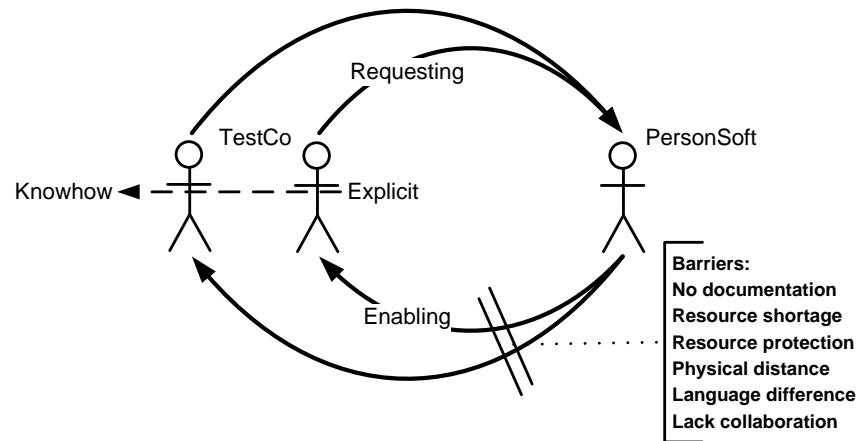
The early stages of the project involved repeated requests from TestCo for *‘enabling’* (transfer processes) and knowledge transfer but PersonSoft were unable, perhaps due to lack of available resources, to provide this support. In the latter stages of the project, where more tacit knowhow that is *‘best articulated face-to-face’* was needed, the inability to organise any face to face interaction and the reliance on WebEx video conferencing to overcome distance meant essential social interaction was absent (Santhanam, Seligman and Kang, 2007) . This observation suggests that explicit and tacit knowledge management processes need to be planned and are essential for successful outcomes. However, these did not take place and their absence may have stunted shared knowledge creation and may partially account for the limited outsourcing success observed (Blumenberg et al., 2009).

*‘We could have had a more rigorous and better process if dedicating a fixed time period when testers and PersonSoft (could) meet each other and exchange their views.’ [Test Director TestCo]*

A cyclic pattern of request and denial emerged and was repeated throughout IOC accentuated by the problems of group integration and physical distance (Romania, Belgium and UK). This led to dysfunctional group processes appearing and latent resentment as requests for help were not appropriately handled. The cyclic nature of this practice of request and denial is illustrated in **Figure 7-7**, and perhaps hints at a

negative social exchange context where failure to respond creates latent resentment and a lack of propensity to cooperate.

**Figure 7-7 - Cycles of requesting for enabling**



Source: Author

There were several blocking factors to collaboration but especially the physically dispersed nature of the consortium. There was a lack of an integrated working location and product consolidation for the organisation's individual elements took place independently at the location of the organisations.

*'Romania is still a concern in terms of what they are doing and the quality. When they are here they work well, but then they disappear and there is a disconnect – (I have) no faith in whether they can genuinely find problems and add value to the testing process.'* [Development Director PersonSoft]

Remote team working practices in such situations require specific embedded processes embedded to ensure coherent handovers and increase social cohesion and group identity. Physical remoteness inhibits face-to-face interaction and this prevents social control emerging, relationships developing, and made tacit knowledge and trust acquisition difficult.

### 7.5.3 Relationship and climate

Lack of overall visibility, problems with testing, poor knowledge and hand-over tended to make TestCo remote from the centre of the project. Attributions of blame by partners for failings due to *'inability to acquire knowledge'*, or *'lack of understanding'* all added to a situation where partners were ineffective and fragmented when a

coordinated response to buyer opportunism was required.

*‘Almost every intervention from DefOrg management side reset somehow the so fragile connection between TestCo and PersonSoft; I mean everyone tried to defend by itself that we forgot to react as a team.’ [Test Director TestCo]*

Collaboration was further complicated due to out-group processes emerging as was hinted in this comment by the Services Director PersonSoft:

*‘I think there was a fractious relationship anyway between SI and residual TestCo and the people in Romania. It wasn’t at all plain sailing and towards the end ... I felt that SI was being quite openly critical of TestCo and the quality of people, consistency of people, capability of people.’*

There were key failings in integration of knowledge and the product creation process. The team dynamics were poor, no coherent process of knowledge transfer was visible, and what transfer there was appeared superficial and not adequate to cover aspects required for effective performance. This supports the view of Dyer and Singh (1998), that in alliances specific knowledge acquisition and transfer processes have to be in place to make the relationship effective and in the case of the HRMSys consortium these were absent. The strategic error committed was during alliance formation with inappropriate partner selection. If there had been time, and knowledge acquisition and sharing processes were in place, it may have worked. However, within a restricted time-bound fixed-price project there is no slack available for a slow build-up of competence.

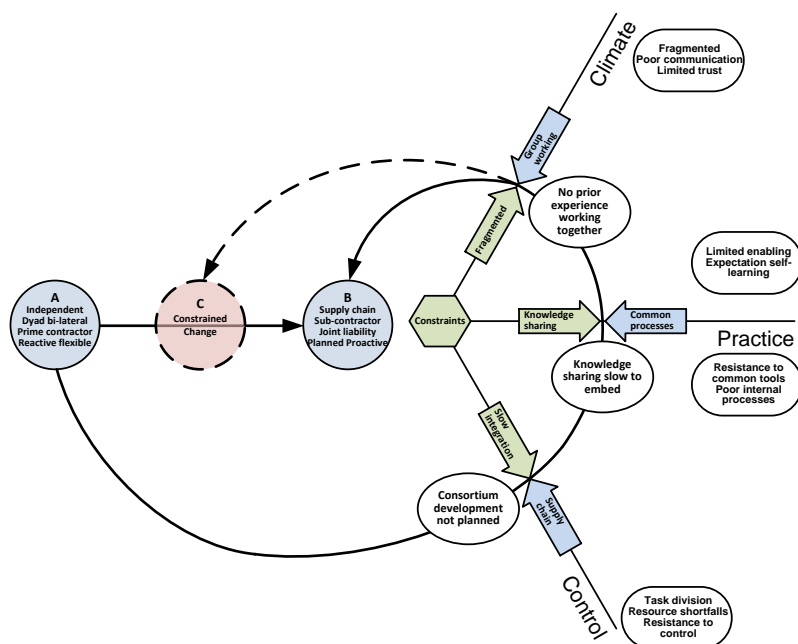
### **Summary: Team working and knowledge sharing were fragmented**

Working as an integrated supplier team within the HRMSys project was a critical task for the suppliers and also a major change for PersonSoft. Appropriate partner selection is critical and particularly problematic in short term alliances, where there is limited time for working relations to develop and as a result there is a tendency towards a ‘calculus based trust’ (Bignoux, 2006). Partner selection for HRMSys was flawed in two respects; partners had limited complementarity that increased the burden of coordination, and partners, were also physically distant making interaction difficult. Underpinning this issue was the high dependency on PersonSoft for specific knowledge that could only be acquired by close day to day interaction, accentuated by the fact

that even written down knowledge was not available. Repeated requests for support went unanswered due to shortage of resources, lack of availability, poor coordination and no inclination by PersonSoft to support a potential competitor. Overall good working relations were slow to develop and the shortfall in coherent working practices led to cycles of conflict occurring throughout the development and testing phase.

The change to a consortium structure is illustrated in **Figure 7-8** by the transition from position (A) to (B), where the focal organisation's bi-lateral mode of working is replaced by an extended supply chain. The influence of the constraining elements is shown on the overall transformation pathway such that the degree of change is emergent and constrained and is shown as position (C). Also shown in **Table 7-3** is the analysis for this section.

**Figure 7-8 - Transformation to consortium of suppliers**



Source: Author


**Table 7-3 - Working in a supplier consortium**

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and control</b>	Supply chain of interactive and interdependent suppliers and buyers replaced dyad.	Some partners chosen on price not on capabilities lack of broad knowledge or competence in domain.	Extra burden of support from PS not accounted for in resources.	Gaps emerged in deliverables overlaps in responsibilities – occasional panics in deliveries.
	Joint contractual responsibility of deliverables created between suppliers.	Possible inappropriate role splits in team – some suppliers constrained in their tasks.	Extra burden of support from PS – gaps in handovers.	Recrafting the supplier team for FOC without some personnel from TestCo.

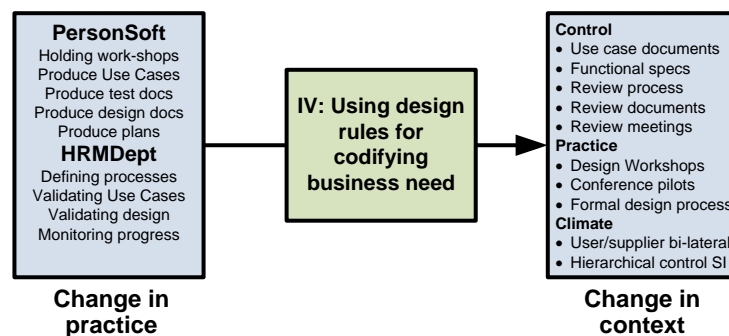
Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
	Working interactively with supplier partners to achieve the outputs.	Resourcing assumptions were based on historical delivery patterns (PS).	No allowance in bid for partner support during implementation.	Partners left largely unprepared for role – learnt in media res.
	The need to provide structured information between the supplier parties.	The incumbent and software within PS was not documented to required standard.	Documentation had to be created within project timeline.	Some resistance and unsuccessful attempts to push this task to TestCo.
	Multiple meetings required covering all aspects of delivery and project control imposed by the contract.	Capacity shortfalls at PS restricted availability Physical remoteness of TestCo.	Most technical meetings required PS input in some way and led to a loss in capacity.	Resistance to the number and frequency of meetings and the use of resources from PS.
<b>Procedural and process</b>	Arm's length to the end users and subject matter experts.	Control and calling of meetings via formal process – gatekeeping.	More time for problem resolution and information exchange – long communication chain.	Gaps emerging in understanding of the business requirements.
	The need to transfer knowledge of the technology to supplier partners (PS).	Lack of explicit knowledge transfer processes. Limited capacity internally at PS. Expectation of self-learning by TestCo.	Repeated requests for 'enabling' or knowledge sharing sessions avoided.	Cancellation of meetings restriction in time allowed. Fragmented knowledge transfer.
	Processes to support partner product creation.	Use of remote teleconferencing and web seminars but restricted in internal capability.	Reliance on implicit knowledge of recipient was not possible – slow progress.	Focus on surface level behaviour of the application not on the deep knowhow needed.
	Acceptance of common tools across the supplier team to coordinate tasks and channel deliveries (PS).	Use of SharePoint, Mantis (bug tracking) and Polarian (requirement trace) adopted by supplier consortium.	Some promotion of internal tools by PS was dropped in favour of common tools.	Resistance to common tools that exposed internal weaknesses. Common tools forced by Agency and SI.
	Mandatory use of common development and testing practices (PS).	Development processes individual and peer reviewed no testing protocols other than functional tests at PS.	Unacceptable quality of software delivered to supplier partners – low capability QA at PS.	QA manager at PS fired restructuring to align QA with development. Some adoption of processes internally at PS.
<b>Relationship and climate</b>	Limited understanding or knowledge of partners of environment or of the technology to be delivered.	Some suspicion and reluctance to share (and lack of support) restricted trust and partner learning.	Wasted time and effort along with 'false starts'.	TestCo learnt the application enough for testing 'by doing'. Often 'over testing' the application.
	Partners on delivery teams had never worked together before and had no prior history.	Lack of experience and capacity to support partner actions at TestCo and PS.	Fragmented team for first six months limited development of trust.	TestCo left isolated and left to 'fight war alone'.
	Lack of integration of team and poor communication.	Lack of understanding of project roles and tasks.	Poor dialogue and wasted capacity. Working in isolation no social relation.	Lack of common and integrated team seen as major weakness.
	PS technically subordinate to TestCo at start based on integration task scope.	TestCo to lead development with no understanding of application or technology context.	Continuous fielding of questions to PS. Fragmented communication to buyers/SI.	TestCo technical lead 'hung out to dry' until control shifted towards PS.
	Partners were physically remote from each other made face to face interaction difficult.	Limited face to face opportunities.	Limited trust between partners.	Ineffectiveness of WebEx remote conferencing to carry tacit knowledge exposed.

## 7.6 Transformation (IV): Using design rules for codifying business need

The design rules followed closely the philosophy of DefOrg who as an organisation was responsible for the setting of architectural standards. However, most of these standards were alien to the supplier consortium at the start of the project, and although they were specified within the bid documentation, little notice of this constraint was made at the time. It was assumed these were standard boilerplate in the contract documentation and a flexible interpretation would occur in the actual

implementation. As a result the consortium's response at bid time was to indicate acceptance of all these requirements without amendment. This was taken by Agency in a formal sense to indicate both understanding of the defined scope and acceptance of these specific functional and non-functional requirements as part of HRMSys. Who as a result subsequently monitored and assured that the project delivered exactly to these standards. There were three principal tasks within transformation (IV) **Figure 7-9**; firstly, learning to work together as a group, secondly, understanding, creating and sharing knowledge, and finally, adopting the rigorous standards, rules and procedures being demanded to coordinate activities. Shown as Table 7-4 is the analysis for this section that also includes an indication of the emergence of power and conflict observed during the project (shown as:  ). A process model is also shown as **Figure 7-12**.

**Figure 7-9 - Transformation IV using design rules**



### 7.6.1 Structural and control

Most aspects of the design were set down within the contract documentation inter alias: the design tooling, methodology and IT standards that should be applied, as well as the implementation approach, which was broadly a waterfall strategy. The extensive documentation added significant time, capacity, uncertainty and cost to the project. Budget was the key constraint as it was so difficult to change within a fixed price constraint; *'...design to cost is key, budgeted cost is a key limiter, if it goes to committee it could take a very long time to come back.'* [Director HRMDept].

A fundamental contradiction was observed within the statement of work defining the total scope of the activity. The design rules and method pointed to a new application development whereas the contract specified the configuring of ready-made COTS

solution. This meant that much of the specified methodology pointed to new development whereas the suppliers were claiming a delivery of a COTS package. Despite this apparent inconsistency in the contract, Agency adopted an approach to apply all the design rules to HRMSys right across the application.

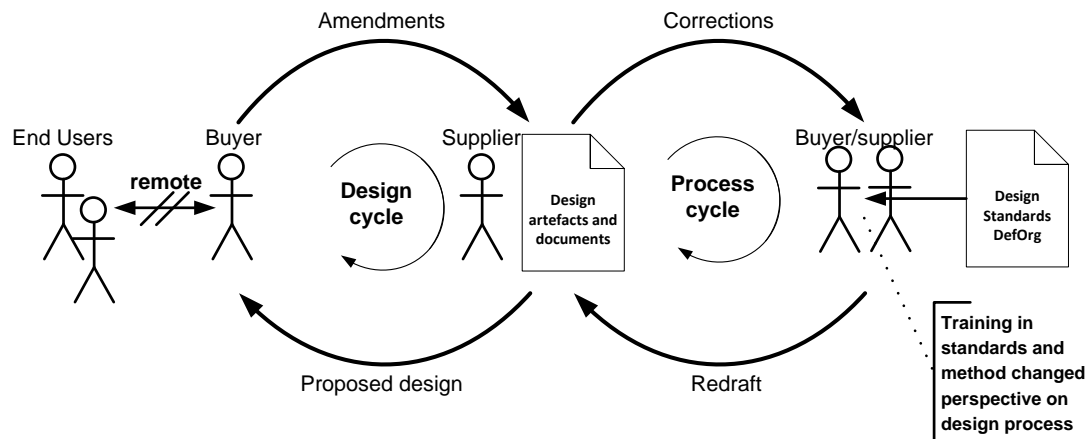
None of the use case or design documents were used in a substantive way to inform the configuration and development of the application, and in effect ended up as a documentation of what there was available within the core application. The documentation in the end was largely reverse engineered to match the delivered configuration, and the *'effort spent on Use Cases didn't benefit the project in relation to the effort expended.'* Overall the design documentation was too late to play a substantive part in development and was seen as an exercise in box ticking and completion of the contracted deliverables.

*'I think the whole contracting, procurement, waterfall, define everything upfront and define the timescales from them to work within then contract it and then nail your suppliers to the wall was not the way we had been working (before).'*

*[Services Director PersonSoft]*

### 7.6.2 Procedural and practice

Two main aspects of the design process were observed; firstly, the inability to access coherent business understanding, and secondly, capability shortfalls in applying the formal standards of DefOrg. In particular, the lack of access to subject matter expertise (SME) was accentuated by the new requirements introduced at project start-up. The incumbent MAPS encapsulated the current business processes at HRMDept and crystallised and incorporated the development processes at PersonSoft. Its operation was familiar, well understood and institutionalised. The new functions were for a set of functions and processes well outside the then sphere of control of HRMDept.

**Figure 7-10 - Cycles of design**

Source: Author

This meant a divide emerged between those requesting and designing the application from those subject matter experts owning and eventually using the system. This poor access to business knowledge resulted in a design that was fragmented and incomplete (and during actual field implementation was rejected).

*‘...And to some extent they (HRMDept) were creating requirements based on ‘a finger in the air’ and not in any real sense based on practical understanding of how the business process worked.’ [Business Analyst PersonSoft]*

In addition, the imposed design regime caused problems as neither PersonSoft nor HRMDept had any experience in its use. These two problems interacted and caused two faults to emerge: a gap between the business processes and what was being articulated by HRMDept, and basic faults in the technical execution of the standards resulting in poor documentation quality.

Problems with the lateness of the design were well recognised especially the impact on configuration and the development proceeding at risk.

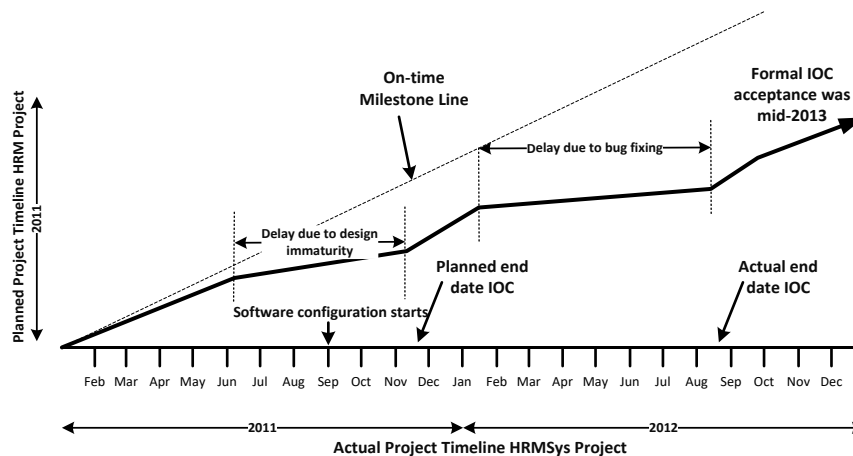
*‘...[There is] concern regarding the lateness of the uses case and the risk regarding PersonSoft developing without a signed off functional specification etc. more evident is the concern that if we are developing and the use cases are not delivered there is massive risk as to which stream is driving which, use case to development or vice versa?’ [European Services Manager PersonSoft]*

The delays and accumulated errors were reported each week and at each project checkpoint meeting. It was known that the project was in trouble and would be delayed but the response was to force emphasis on compliance, the threatening of

liquidated damages, rather than finding solutions to core issues such as chronic resource shortfalls. No resources, with the exception of bug fixing, were available consistently throughout the project and only when severe problems occurred towards the end was extra capacity made available. The main issue was not the lack of recognition of the cause of problems but the lack of an appropriate response.

Design was developed in parallel with configuration and testing and only completed formally just before the UAT. Delays in design, lack of requirement clarity, a faulty core system and poor application of basic development approaches led to cycles of testing and rework that absorbed the best part of a year to resolve. The impact on the timeline is shown as **Figure 7-11**.

**Figure 7-11 – Project time HRMSys development phase**



Source: Author

### 7.6.3 Relationship and climate

A focus on contractual compliance to unachievable timescales and an apparent filtering or ignorance of the signals pointing to emerging problems characterised the IOC stage. There was an emergence of actors within HRMDept with no prior history or attachment to PersonSoft and the old ways of working. Initial design meetings became conflictual and restricted the degrees of freedom to modify design parameters. There was an instrumental focus and a promotion of ideas for the design based on the incumbent application that represented replication logic of current processes and practices. Furthermore, there emerged, for a while, obstruction and hostility between PersonSoft and HRMDept as a result of these factors. There was gatekeeping and control of the agenda, and this, with a lack of access to subject matter experts to

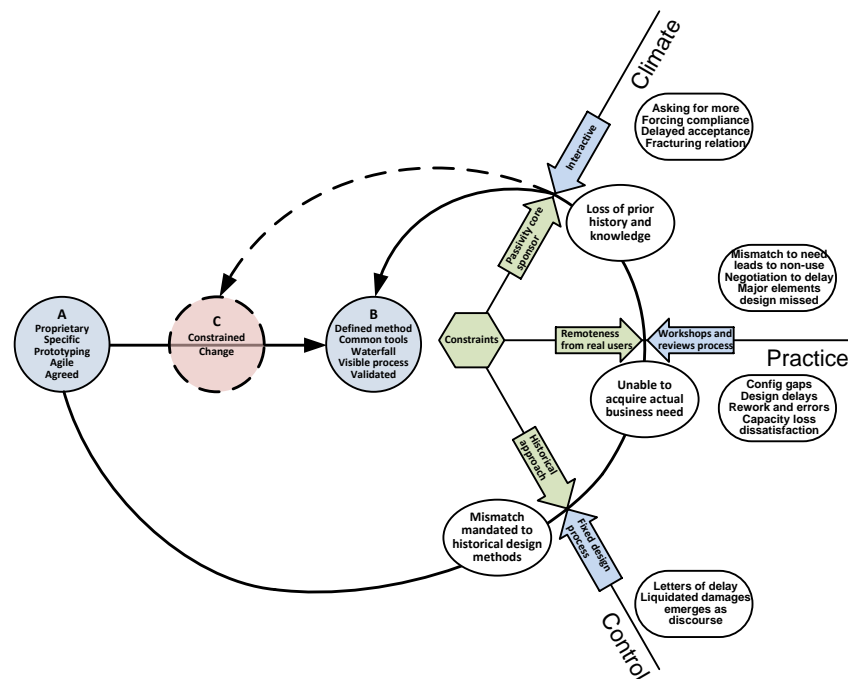
inform the design and the inability to get past this obstruction, caused friction.

**Summary: Poor design processes and limited access to business knowledge**

The design process overall was flawed and ineffective due to a serious lack of real business knowledge and capability within HRMDept and an inability to get past this to acquire real expertise. As a consequence some design rules and application behaviours were poorly grounded and based on suppositions of how the business processes worked and not on any substantive experience. Failings in the design process were responded to by compliance, threats and discipline and not solution seeking in a collaborative manner. All aspects of the implementation and design was characterised by these cyclic patterns of negotiation and adaptation as actors struggled to match uncertainty to their capabilities within a fixed contracted timescale.

The change to common methods and visible processes from proprietary methods is illustrated in **Figure 7-12** by the transition from position (A) to (B), where the focal organisation's bi-lateral proprietary mode of working is replaced by an extended supply chain operating within standardised processes. The influence of the constraining elements is shown on the overall transformation pathway such that the degree of change is emergent and constrained and is shown as position (C). Shown as **Table 7-4** is the analysis for this section that also includes an indication of the emergence of power and conflict observed during the project.

Figure 7-12 - Transformation to structured design method



Source: Author


Table 7-4 - Applying a formal design approach

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and control</b>	A contracted design methodology expressing in detail how design to be modelled and represented (PS).	Supplier team had very limited experience with the use of the design methodology mandated especially Use Cases.	PS and HRMDept had to learn the required techniques to create the design specification. Errors and capacity lost.	Adoption of the design approach for FOC and internally at PS.
	The design philosophy was a waterfall and staged approach specified for project evolution and design (PS).	Staged approaches suitable for fixed original scope but agile for the new undeveloped business requirements.	New requirements took much longer to specify to the required standard.	Agile approach adopted for FOC and changed in contract.
	Design globally specified configuration of a COTS existing package. Assumed a fixed need.	The software produced by PS was essentially bespoke using a proprietary tool set.	Mismatch between mandated process and actual software development at PS.	Use Cases and most design documents were not used during IOC.
	Mandated tool sets to create the design specified in the statement of work (PS, SI).	No experience with the mandated modelling tool set within project (buyers and suppliers).	Software tool to create systematic design documents had to be learnt – errors and capacity lost.	Software tool adopted by PS internally for some developments.
	Design to be detailed, validated and formally signed off at a contracted milestone (PS, TestCo).	Different process for PS and HRMDept historically design prototyping and adaptation.	Design was emergent over time for new requirements and too late for the formal milestone.	Letters of delay and threats of liquidated damages.
	Design frozen after the critical design review (CDR) then configuration can start (PS).	Design adaptation continued up until UAT as business rules that were ‘forgotten’ were included in the design specification.	Design process overrun the milestone and was actually closed two months later – was never really frozen.	Configuration started before design complete and gaps emerged between design and delivered software.
<b>Procedural and process</b>	Workshops held to define the business requirements and process steps.	Remoteness of workshop participants to actual business limited effectiveness of this process.	Major elements of design missed or only became clearer later in the process close to final acceptance.	UAT failure users insisting on inclusion missed rules – withholding of consent.
	Joint technical review meetings and design walkthroughs planned as milestones within each stage.	Time and number limited within each major stage of the project planned as a milestone not to effort.	Running to a milestone rather than to gaining a good understanding. Process cut-short due to timeline pressure.	Some unfinished business – latent dissatisfaction and incomplete design.

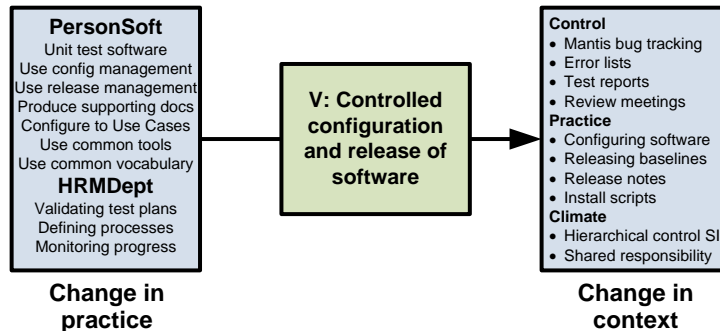
Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
	Concept demonstrations of delivered functionality between PS and end users/HRMDept.	When system demonstrated exposed the limited contact with real functional users.	Communications initiative launched by HRMDept 'to sell' the approaching system.	Complete mismatch to in theatre operations meant some functions were never used.
	Formal quality process to review, confirm and accept design (PS).	Cycles of correction and review of design documents continuous changes in business specification as ideas formed.	Design matured slowly and misinterpretation causing multiple review cycles – loss of capacity.	Negotiation to 'put off' some problematic issues to the new version 7 web based architecture.
	Software behaviour and functional output described in a functional specification and Use Cases.	Use cases or formal design documentation did not exist at PS or HRMDept at start of project.	Capacity loss from repetitive repairs as process, technology and method had to be learnt.	Design documents were not used in application configuration.
<b>Relationship and climate</b>	Interactive between HRMDept and PS for the use case design during the workshops.	Very restricted access to end functional user's lack of access to subject matter experts.	Mismatch between real world processes and those defined within project.	Whole areas of loss with no flexibility to correct.
	Conflictual and negotiated at times within the joint technical reviews.	Contract imperatives impinging on the design meetings.	Agency and HRMDept almost trying to 'design' the application to match contract.	Limited flexibility allowed – upping the ante asking for more.
	Conflictual at times between PS and HRMDept. Occasionally hostile and obstructive.	Passivity of core sponsor at HRMDept allowed and promoted users with no prior history with PS.	Grandstanding and self-promotion.	Some fracture in the prior HRMDept and PS relationship – carried forward to FOC.

### 7.7 Transformation V: Controlled configuration and release of software

Configuration of the software within HRMSys was the transformation task that most retained historical practices. Coding and internal testing methods at PersonSoft remained largely intact and unchanged. Progress and quality problems were broadly invisible to the consortium (or the buyers), as no oversight was allowed, and only became visible during final testing. The client server software was based on architectural concepts unchanged for around 20 years prior to the start of this project and the underlying software was of poor quality. Configuration was based on the adaption of this software toolset to particular business contexts. The main impact on entering the project was placing this configuration approach within a controlled envelope that emphasised managing and controlling the output. Accordingly, emphasis was placed on documenting the configured items, tracking changes, proofs of repairs and evidence of testing having been applied. Openness and visibility were emphasised to risk reduce the development in what was in effect an opaque software and development practice. The change to a controlled configuration management environment acted to strengthen the software development processes and formalised and controlled the release to testing. An extract of Transformation (V) is shown as **Figure 7-13**, and shown as **Table 7-4** is the analysis for this section including an

indication of the emergence of power and conflict observed (shown as:  ) during the project. Also shown is a change process model **Figure 7-14**.

**Figure 7-13 - Transformation task V controlled configuration**



### 7.7.1 Structural and control

Configuration and development of the application was undertaken within the consortium by PersonSoft, and although there were contractual demands for visibility in database schemas or software standards, the actual configuration processes lay outside the scope of the contract. The software creation process in HRMSys is the practice that most resembled PersonSoft's previous ways of working and was largely unaltered within the new project structure, causing problems as a technical consultant illustrated:

*'...a little bit of that we were so used to working on-the-fly working very quickly at a very rapid pace but when it came to doing design phases and testing phases and FAT, SAT we were like lost. We would renegotiate requirements quite easily whereas with this project that was like pulling teeth.'*

In the UK organisation of PersonSoft there were two main groups: the healthcare division, who had developed a packaged solution for nurse rostering, and secondly, defence and maritime, who produced and implemented tailor-made software for their defence clients' specific needs. HRMSys was coded and configured within this defence division who also produced the incumbent application MAPS and several other applications within DefOrg. The software was not really a '*shrink wrapped*' packaged solution but more a set of capabilities and tools within which to create functional solutions. As a corollary of this approach the tool-set had developed incrementally over time outside of a formal packaged framework as a developer noted:

*‘The product is okay, it works but it’s full of bugs, holes and anomalies and things that have grown (like) Topsy over time. Whilst it’s got a wide range of functional capabilities there are some real anomalies in there... and it’s been like that like forever.’ [Developer PersonSoft]*

The agile development process partially practised at PersonSoft supported an application that could be radically tailored by their consultants and end users, and was predicated on adapting the software, almost real-time, to the needs of their clients (Malone et al., 1992). The move to a formalised process, characteristic of packaged delivery, removed the tight link between the articulation of the business need and its rapid realisation in a software function. Software was now created against a set of completed requirements then released, tested and accepted in a water-fall style of development (see Laplante and Neill, 2004). This process depended heavily on the completeness of the requirement and any lack of certainty could lead to large gaps emerging when the software was first seen by the users. Even if development processes were well managed, which they were not, the latency between the user expressing a need and seeing how this was translated into the application could result in dissatisfaction. This problem was especially acute when requirements were embryonic, as was the case for the new requirements introduced at the very start of the project.

### **7.7.2 Procedural and practice**

The overall logic of PersonSoft’s development process was to maintain close contact with the client business needs, to develop flexibly, and respond quickly to specific demands. Coding and internal testing did not emphasise cross organisational standards, or processes, and the software that was used for the core of HRMSys was based on architectural concepts unchanged across the PersonSoft defence client base for some years. Service management and correction of deficiencies were used as a ‘cash cow’ and as an engagement manager pointed out, *‘There was no SLA no direct follow-up of how long is this issue been out, how long is it going to take to address and I think we were vulnerable ...service support was kinda not there.’* This concept is consistent with an iterative development approach where faults could be identified and corrected quickly.

The software consisted of three conceptual layers: a core internally managed by development, a configuration layer managed by technical consultants on client projects, and a user configuration layer (UC), which could be adapted by end-users. The behaviour of the application could be modified significantly by any of these elements, however no standard software rules or standards were available and in effect this was an *'error creating process.'* [Technical Architect PersonSoft] Furthermore, the product was monolithic in terms of the software architecture and was created as integrated high level blocks. The breaking down into individual components or classes was very limited. In practice this meant that a configuration change to one element of the software could impact a function quite distant from where the change occurred. Finally, very embryonic configuration management practices added to this problem and made it difficult to trace changes or allow specific testing on just the component altered.

Adding to this complication was the internal testing of configured software at PersonSoft which mainly consisted of running through typical scenarios of use and *'seeing if it worked'* prior to exposing it to the users. Furthermore, internal quality assurance testing had limited impact, *'and PQA didn't have the best reputation but I think we could have asked how did all those bugs get through in the first place?'* There was an overall strategy to sacrifice detailed specification and control for flexibility, that matched a bespoke ad-hoc development practice, and as a consequence no two implementations of the software were exactly the same.

What this adds up to is a historical process of development that was in part improvised responding to contingencies in shifting needs and business context. These processes had high resilience. Lack of standardised routines across PersonSoft's developers, over many years and generations of developers, had led to a toolset that was inherently faulty, bug-ridden and inconsistent. These embedded long term problems were exposed when the output of this software process was subject to rigorous testing and review. This caused re-emergence of old-bugs, and forced multiple releases, within a business context at DefOrg that was no longer fault tolerant.

### 7.7.3 Relationship and climate

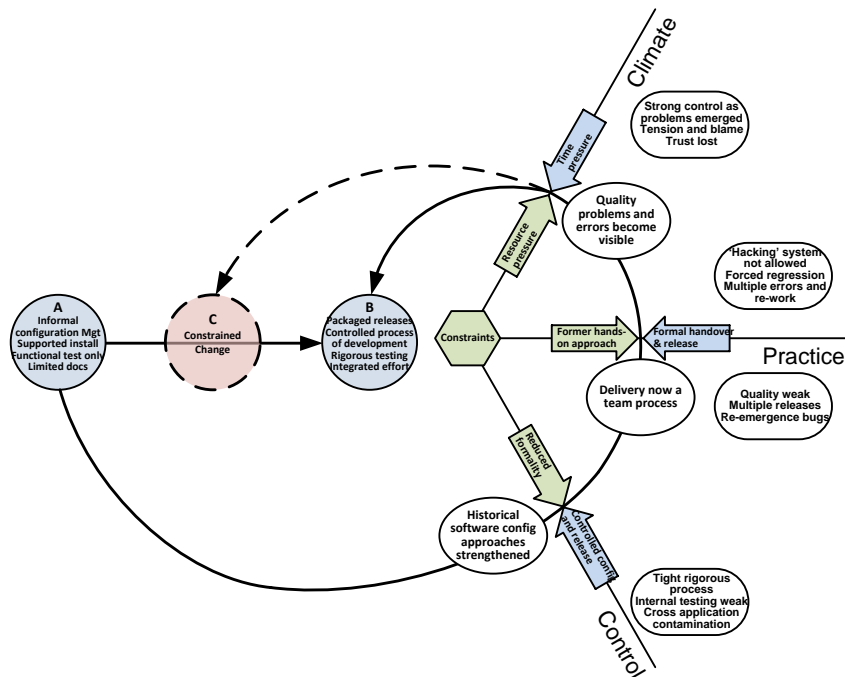
During HRMSys implementation, time pressure within a constrained project caused multiple errors and whole new baseline releases. This cascaded into cycles of testing, re-emergence of previously solved bugs and warnings of serious quality problems. This overall situation created tension and conflict, mainly between PersonSoft and TestCo and later with SI, as delays mounted and blame and conflict cycles emerged.

#### **Summary: Historically weak processes delivered poor software**

The configuration and software release processes at PersonSoft were resilient and long-standing and the practices were oriented towards bespoke development. This approach could flexibly adapt to the context of their clients' businesses. Standards, documentation, testing and configuration received less emphasis compared to rapid response. HRMDept had tolerated this approach as this more accurately reflected their improvised use of the software. However, entering the new contractual environment eroded the utility of these historical practices, replacing an informal improvisation with compliance to contractual norms. The historical practice was thus deprecated and replaced by practices and processes in line with professional software house norms. However, the historical routines had delivered embedded bugs, inefficiencies and shortfalls, which were quickly exposed in testing, and caused conflict right across the project. The subsequent rejection of deliveries drove cycles of correction and amendment to the software, and as a corollary materially altered the processes at PersonSoft and acted to erode old work routines.

The change from an informally regulated approach to one more structurally managed is shown as the transition from (A) to (B), in the Figure 7-14 below. The outcome is shown as before by the path of the transformation curve to point (C) that illustrates the constrained change as control processes, practice changes and context mediated the degree of change. Shown as **Table 7.5**, is the analysis for this section that also includes an indication of the emergence of power and conflict observed.

Figure 7-14 - Transformation to controlled configuration and release




Source: Author

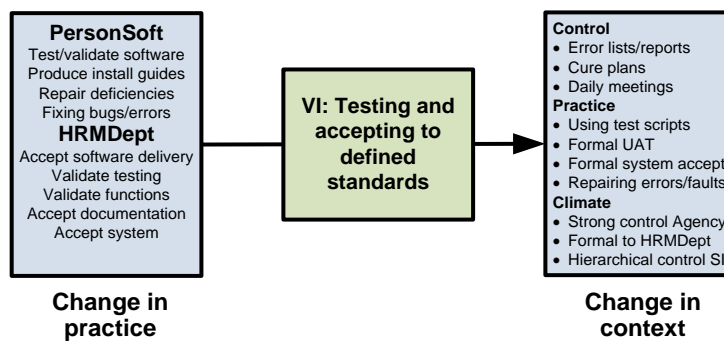
Table 7-5 - Controlled configuration and release of software

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and control</b>	Packaging releases into a baselined complete solution capable of independent installation (PS).	Similar release process did exist but not in the detail required by the contract.	Tight, more rigorous and robust processes were adopted. No 'hacking' into the system to complete install allowed.	Part of standard procedures within this project and FOC.
	System Implementation Plan (SIP) and System Design Specification (SDS) that describes and controls the spec of the total application including its installation.	No documentation of this type existed at PS or HRMDept at start of project.	Capacity loss as these were created within the project – were subject to QA review process and repetitive corrections and re-release adding to capacity loss.	Part of standard procedures although major rework needed for FOC new technology.
	A visible configuration management practice defined in a plan and implemented to control deliveries (PS).	Configuration management plans and processes in a formal sense absent at PS. Application was 'monolithic' not modular.	Faults in application difficult to isolate – cross contamination of application to 'distant' functions.	Re-emerging faults during regression testing. Root cause poor application architecture.
	Software must be unit tested prior to release to TestCo for formal testing accompanied with test outcomes (PS).	Poor QA and unit testing approaches within PS. No scripted or automated process – functional test only.	Many 'silly bugs' getting through and being trapped by TestCo.	Very limited role of QA in release process – changed when QA department restructured.
<b>Procedural and process</b>	Creation of document and release sets for each baselined release. Defined in contract system implementation and system design plans.	Experience of creating this depth of documentation limited – had not been requested before by any of PS clients.	Baselining for each release including patches including documentation Some capacity loss as this process was learned and executed.	Some adoption within PS for other projects and for FOC.
	Definition and elaboration of waived software components and incumbent functions (PS).	Claiming a waiver to obviate testing depended on proving the function had been formally tested before.	Reluctance of Agency confirmed as significant testing failures emerged – 'no longer accepting the story'.	All functions were regression tested then fixed following UAT failure – waivers did not apply.
	Reconfiguring software, including embedded	Quantity of bugs that emerged forced PS to add	Re-emergence of earlier 'solved' bugs – cross	Multiple over ten releases of software to repair bugs and

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
	components to repair bugs and overcome obstacles (PS).	resources.	contamination.	deficiencies.
	A formal release process to TestCo and to SI then 'hands-off' in principle for PS.	Practice had been to 'support' install to get past problems.	Manual intervention and 'support' not allowed and procedures had to be independently run.	Support dependency on PS reduced and moved to Agency and TestCo.
	Internal testing processes and procedures applied and documented.	Practice had been to functionally test by walking through scenarios in the application.	Test scripts and outputs needed as proof of test compliance.	Some moves to address this during QA reconfiguration at PS.
	Visibility of daily production build made available to the buyer.	Daily production build not possible technically or desired by PS and TestCo.	Waived and did not occur development did not follow this process.	Resilience of current development approaches intact.
<b>Relationship and climate</b>	Deriding and denigrating input from TestCo in relation to software errors and readiness for testing.	Warnings of serious quality problems 'rubbished' by PS and attributed to testing and lack of application understanding at TestCo.	Application entered testing routines full of errors that were subsequently identified.	Loss of authority on application from PS – conflict loss of trust in capability of PS to deliver.
	Time pressure on configuration and releases and background threats for liquidated damages.	Releasing new software always against time constraints and seemingly rushed.	Multiple errors and rework – delays and coordination difficulties.	Stronger control and dominance exerted over PS as problems emerged.
	Pressure on resources especially at PS due to time and workload constraints.	PS were chronically under resourced.	Delays failures to meet agreements some signs of stress including absence.	FOC was resourced correctly and team restructured at PS.
	Rejection of training documents, training schemes and administration docs and lack of PS support increased internal conflict.	Expansion of scope to include incumbent gaps caused conflict within team and between suppliers/buyers.	Some game playing and hostility towards TestCo from HRMDept.	Increasing propensity to exert control and force own will.
	Tense and blame oriented with aspects of presentation management and attribution of blame to others.	Some aspects of resentment of TestCo and SI as assessors of PS output quality.	Flurries of email exchange – SI enforced discipline on PS. Complaints that TestCo did not understand the application.	Tension and blame through IOC peaked as problems emerge and slowness to resolve became clear.

## 7.8 Transformation VI: Testing and accepting to defined standards

Extended testing routines carried out independently from PersonSoft and a series of defined 'gates' formed the principal transformation in testing and accepting the product. In former practice testing was executed, but consisted mainly of a functional walk-through and on-site testing, and rarely followed the industry practice of formal procedural tests. Furthermore, unit testing, developers confirming their own software coding, was not practiced and no documented peer review was observed. An extract of transformation (VI) is shown as **Figure 7-15** and shown as Table 7-4 is the analysis for this section that also including an indication of the emergence of power and conflict observed (shown as:  ). A change process model is shown as **Figure 7-17**.

**Figure 7-15 - Transformation VI testing and accepting**

### 7.8.1 Structural and control

The main structural influence for Transformation (VI) was the clear functional separation of configuration and preparation of the software from its receipt and testing. Furthermore, the testing regime relied on a set of predefined rules, derived from test plans, which comprehensively confirmed delivered functionalities matched the specification. Testing scripts, step-by-step accounts of the test process, were derived directly from agreed design specifications. Finally, errors and deficiencies discovered during testing, and their resolution, were controlled by a standard methodology using an agreed common tool set specified in the contract. All of these aspects represented a fundamental departure from previous practice.

A constraint to this process was the assumption that the testing and design rules would be largely complete. This was not the case and the design was still an area of dispute and was fluid. As well as the design not being settled the physical install processes was not entirely stable. The application was complex and normally took a lot of manual intervention to get installed. This tacit know-how, how to get the application working, was acquired over many installation instances and could not entirely be codified and written down. Therefore it could not be installed completely independently of PersonSoft. As a consequence of uncertainty in the design, and gaps in testing routines, problems occurred during testing resulting in deficiencies and errors that necessitated further rework. In addition, some errors proved intractable, no solution could be found, and were negotiated out of scope by agreement. The consequence of the poor testing cycle was to add several months to the plan and the increasing tension and low-level conflict that resulted were symptomatic of a failing process.

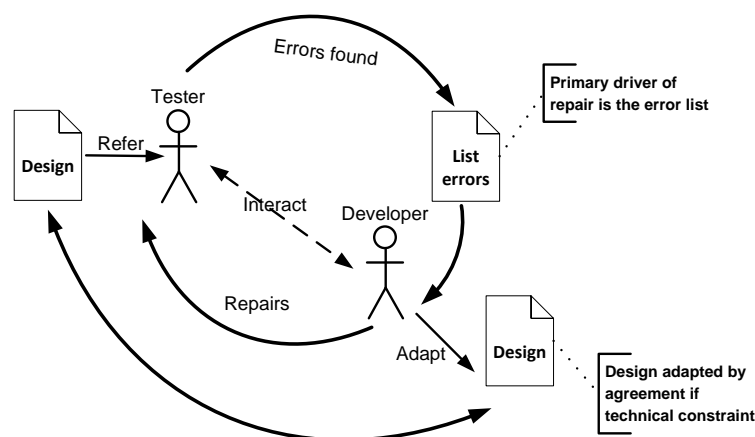
### 7.8.2 Procedural and practice

Characteristic of the physical software delivery were the repeated cycles of rework and test. Poor quality software and gaps in design caused rework of the application. During configuration where changes to the application take place to the software and documentation there were repeated failures: at factory acceptance test (FAT), system acceptance test (SAT) and user acceptance test (UAT). PersonSoft had a formal release process with its clients but the HRMSys application development followed a much more strictly controlled approach that caused issues, as was commented by a technical consultant at TestCo,

*‘When it became around to do the install for the factory acceptance test is seen to be much more formal and a surprise even to (name). All seemed very formal and also very very new (to PersonSoft).’*

Each failure triggered a cycle of testing and in a new formal baseline. A baseline release is a complete software and documentation package delivered to the buyer, and caused high demands on resources and time. During testing, until the final version was installed on the live system, there were twelve major patches or releases and many documentation errors that had to be corrected. This exacting process control of the supplier delivery resulted in PersonSoft practicing a ‘fix to the list’ strategy where software corrections closely followed the list of deficiencies, and limited regression testing was done to check for errors caused by the fix process itself **Figure 7-16**.

**Figure 7-16 - Cycles of repair and test**



Source: Author

Large gaps between requirement and the delivered components of the service emerged due to three main deficits; inadequate testing practices at PersonSoft and TestCo, late emergence of the final design, and poor quality basic software. Final testing was iterative. Faults or gaps in design resulted in rework or adaptation of the design and corrections were focused just on the list of deficiencies and bugs explicitly exposed during a test. Retesting just checked the resolution of the explicit problems or the design was modified if a technical barrier had been reached. Following the test a new deficiency list was generated. This cycle (**Figure 7-16**) was repeated until the list was solved, the criticality of the deficiency reduced, or an agreed compromise accepted as a feasible option (a design relaxation). Further improvised practices were observed in response to the emerging problems, firstly, directly contacting security testers to understand their methodology and adapting practices to meet these aims, secondly, influencing HRMDept and Agency to remove entire functional areas, applying hot fixes without the extended approval processes, and finally, running sequential test routines in parallel. These types of practices enabled shortcuts to be taken to reduce the delays experienced and were used extensively during the later stages of the IOC phase.

### 7.8.3 Relationship and climate

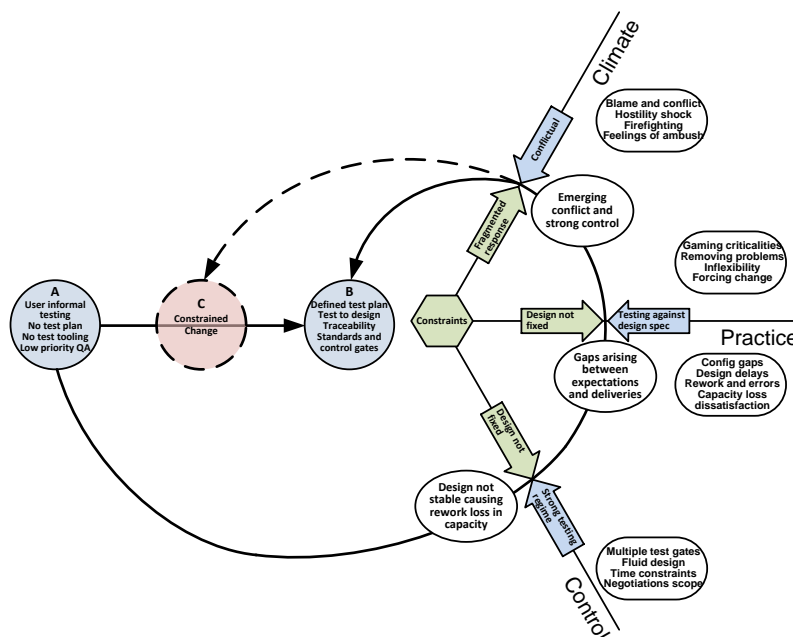
Throughout the test cycle the overall climate was occasionally conflictual and sometimes hostile. Multiple errors, limited time and resources engendered hyper vigilant behaviour and firefighting to get through the testing. This culminated in a confrontation at the headquarters of the system integrator when HRMDept rejected the entire application, and insisted all historical problems as well as those generated in the new project needed to be fixed before the system was accepted. This represented at the surface level the nature of the fracture in the relationship between PersonSoft and HRMDept, as trust was lost during the latter stages of the project. A business analyst was questioned in an interview as to the causes of this conflict:

*‘I think it was the broken promises ...when I was over there to do all the testing little comments in the background you know ‘PersonSoft’ make all these promises and don’t deliver and (name) said this would work and it didn’t work like that, or*

*(name) would say this would work and it didn't work like that and it was just constant all the time.'*

In summary, the testing and acceptance process was at the end of a series of development activities and exposed a lack in internal quality. The formal testing approach was a well-documented and well-run process. The problem was it exposed the full extent of deep underlying problems in the selected application. These issues can be traced back to decisions taken much earlier in the project. Significant rigour was not required in an exploratory design process however in an enterprise development this was essential. Within the project the legacy of historical practices, incomplete design capture, and a change from bespoke to a COTS model, within an over scoped resource light project, came together to limit success. A confluence of several mishaps occurred during the implementation and to some extent the failures in test at the end can be traced back to the selection of inappropriate software at the beginning.

**Figure 7-17 - Transformation to testing to defined standards**



Source: Author

The change from this situation to a more formal testing regime as specified in the contract, where test plans and independent verification is the norm, is illustrated in **Figure 7-17**. The move from an informal, user-centric acceptance testing, to a planned activity is shown conceptually as a transition from point (A) to point (B). The transition is illustrated by the curved arrow and the influence of the change imperative, as constraints act to moderate the outcome and limits the transformation as shown by

point (C).

**Table 7-6 - Testing and accepting to defined standards**

Change effect	Primary Change Impact	Output Constraints	Proximal Effects	Distal Effects
<b>Structural and control</b>	Testing and acceptance controlled and contracted in milestone planning with fixed dates and gaps for rework.	Insufficient time allowance for contingency or rework – only one repair cycle foreseen in the plan.	Test delays and overruns to the planning occurred – test routines unclear.	Continuous low-level conflict and emerging problems.
	Testing scripts required derived from and traceable to design use cases and unit testing scripts.	Design was still fluid at test start and gaps in test routines emerged.	Test failures due to ‘missing’ functions or rules or misunderstanding process.	Continuous low-level tension between team around poor process and gaps in design documents.
	Comprehensive test plan a contracted line item and down to individual requirement (TestCo, PS).	Test waivers were applied claiming no need to test as delivered in incumbent baseline.	Waived items were never-the-less tested and many failed.	Test waiver claims rejected and PS forced to repair all bugs across the application.
	A traceable bug and deficiency resolution process within the supply of the software and document.	Fogbugz as tool to trace bugs was replaced by Mantis as an open visible system exposing PS repair process to review.	Opening and closing of bugs as they were ‘solved’ and re-emerged in testing as integrated process was developed.	Categorisation of some deficiencies as change requests rejected forcing repair.
	Multiple testing gateways each of which must be passed Internal, FAT, SAT, Security, UAT.	Poor preparation by TestCo and PS resulted in tests aborted and recalled. Multiple failures across all test categories.	Cure plans demanded and firefighting to get through testing.	Evocation of liquidated damages for delays and test failures.
<b>Procedural and process</b>	The tool set Mantis adopted as common tool for tracking bugs and deficiencies across supplier buyer teams (PS, TC, and SI).	Some conflict with FogBugz control but this was handled internally by PS to channel issues to development.	Mantis became an accepted tool and central to config process and managing bugs.	Bug control came under close scrutiny.
	Use of criticality standards as standards for acceptance within the testing process (HRM, Agency).	Objective criteria for passing a test in terms of criticality (vital, critical, medium and low) were applied.	Gaming of criticality measure to force repair/resolution of preferred options.	Agency forced through criticality measure changes by withholding consent.
	Validating software deliveries against the defined design specification and UC’s (HRM).	Gaps between expected behaviours and specification. Incomplete use cases blocked testing.	Rework and conflict over ‘inflexible’ interpretation of TestCo.	Upgrading of criticalities in security and UAT was used to force compliance.
	Validating and observing testing outcomes at FAT, SAT and UAT (HRM, Agency).	Multiple test stages each of which had to be re-entered if failure at any point.	Emergence of focused bug fixing to get past the specific failing test.	Removal by negotiation of problematic functions.
	Accepting documents including training manuals and training courses (HRM).	Training documentation ‘agreed’ for functions developed in project – agreement broken by HRM.	HRMDept extended requirement for training and admin docs to cover gaps from the incumbent baseline.	Training documentation needed to be recreated in new technology at FOC – capacity loss.
<b>Relationship and climate</b>	Conflict, anger and loss of trust during repetitive software test failures (Suppliers, Buyers).	Failures in install procedures, manual interventions and tweaks needed to progress testing.	Cure plans demanded and strong control enacted as weaknesses in PS processes were apparent.	Stronger control and dominance exerted over PS as problems emerged.
	Tense and blame oriented with aspects of presentation management and attributing blame to others.	TestCo blamed for lack of knowledge and preparation to explain problems.	Firefighting and heroic repairs to problems of own making.	Stronger control and dominance exerted over PS as problems emerged.
	Hostile and PS in shock as HRMDept rejected application at UAT (PS).	HRMDept regression tested the incumbent used as baseline and exposed all historical problems.	Conflict and feelings of ‘ambush’ as PS forced to fix all historical problems in the HRMSys project.	Upgrading of criticalities in security and UAT was used to force PS’ compliance.
	Rejection of training documents and expansion of scope to include incumbent in regression caused conflict within team and between suppliers/buyers.	Training materials rejected as not sufficient – but were based on TNA. Unrealistic extension of scope of required application documentation at that time.	Resistance (and hostility) of HRMDept training dept. to imposition new routines and processes.	Controlled by appeals to HRMDept management by informal influence.

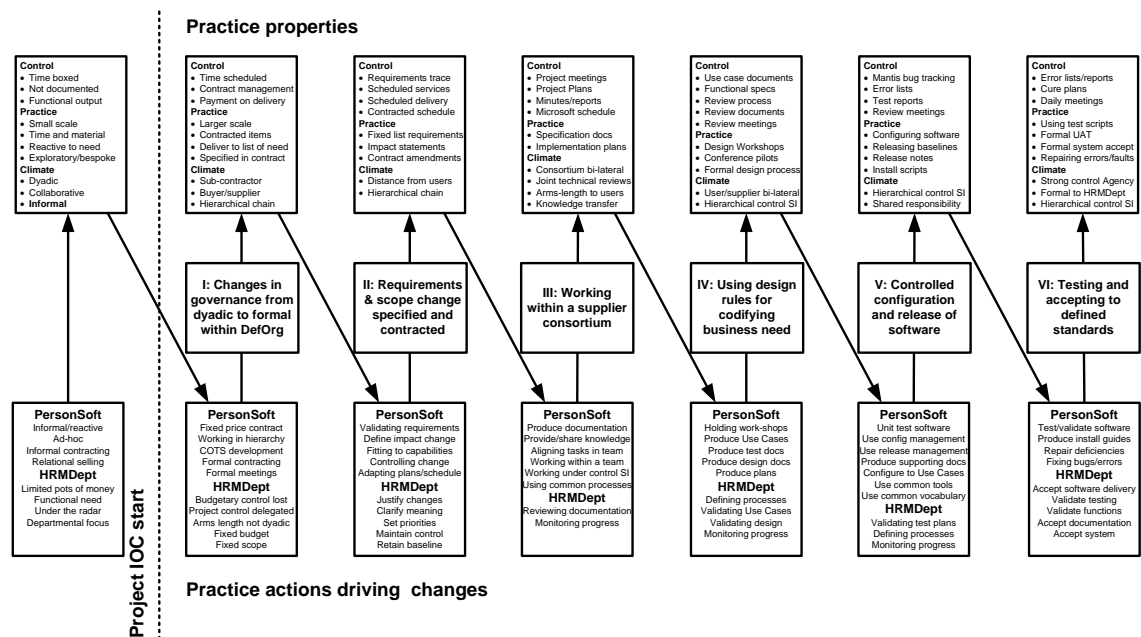
### 7.9 Practices were cyclic and negotiated

The practices of work were characterised as cyclic and negotiated, as suppliers responded to the contractual demands within a resource constrained environment by seeking to control and minimise the scale of the task. The management of ‘*expectations*’ of the buyer implied reducing expectations and between suppliers and buyers a meta-narrative was emerging where suppliers focused on scope control whereas buyers sought to capture more value. Cooperation emerged between suppliers driven by the basic demand to produce a service within a consortium. However, collaboration and integrated learning developed slowly and partially, and the supplier team was essentially fragmented. Knowledge sharing was blocked by a combination of factors; firstly, a basic lack of explicit codified information, secondly, by limited resources and physical remoteness of supplier partners, and finally, by a lack of willingness of partners to expose their own intellectual capital.

Progress within the project was slow and delays and emerging problems with quality and capability were addressed by letters of complaint or the threat of the application of liquidated damages, all of which had very little substantive impact on the actual outcome. Strong governance, especially focused on compliance, acted to create a hostile and instrumentally focused context, oriented towards just meeting a contracted schedule at any cost, and not on problem solving or meeting functional demands. This factor alone acted as the principal barrier to progress. The emergence of a conflictual environment, driven by the contractual context, poor performance and implementation problems, demonstrates the need to consider more closely the nature of conflict and politics within a project context, how these arose and how this influenced progress within the HRMSys outsourcing.

This change in governance and structuring of the work represented a significant and radical change for both HRMDept and PersonSoft. The change, from the project start to completion, represents the total scope impacting the two organisations and is shown in **Figure 7-18** split over six observed change transformations that occurred over the IOC implementation.

Figure 7-18 - Practice based model of change



Source: Author based on Orlikowski 1996

The above transformations represented a radical departure from the previous practice, where both organisations, PersonSoft and HRMDept, managed the business processes and supporting technology independently from DefOrg and possessed a high degree of autonomy.

## 7.10 Chapter summary: Change is constrained and emergent

The main case findings were:

- The change in outsourcing was observed to be constrained by the adaptation needed to contingencies and demands placed by real word constraints.
- Power, resistance and conflict emerged as a result of failing objectives and the focus of actors on own objectives at the expense of any overarching goals.
- A strong contractual context and poor management of scope change blocked innovation and change and failed to adapt in time to cope with the emerging problems.
- Project control exhibited a 'stretch and squeeze', then 'slim' response to shifting and failing project parameters. Project control adapted to and reflected the actual delivery and was not used as a tool to manage outcomes.
- Consortium management and effective group working practices, including knowledge sharing, were absent.

- Cycles of negotiation emerged and adaptation as a new balance in the project sought. Opportunism emerged in response to challenges to objectives and the use of informal back channels to exploit previous relation was used to influence outcomes.

**Preview next chapter**

**The Discussion and Conclusion** will consolidate all the findings and answer the research questions. It will go on to link the findings from this specific case to the wider implementation practice of outsourcing. It will demonstrate that outsourcing is a constrained change and the final outcome, in terms of delivery, is very dependent on the actual work of creating the outsourcing service during the implementation. The implementation of outsourcing is highly dependent on supplier and buyer capabilities and the nature of the negotiated and conflictual context within which they are working.

## Chapter 8 – Discussion complex change in outsourcing

### 8.1 Chapter overview

Chapter 8  
Discussion complex  
change in outsourcing

Theoretical and conceptual aspects linked to RQ's  
limitations and recommendations

This chapter discusses the findings from the research both in terms of summarising the findings to the research questions, and developing the links to the literature discussed during **Chapter 2**.

**This chapter discusses the case study research questions:**

- **In what ways do antecedents and a prior history impact and constrain the implementation processes of outsourcing?**
- **In what ways does strong control and governance impact the development practices and how they evolve during the implementation?**
- **How do power and conflict arise during the implementation of outsourcing? And how do power and conflict impact work practices?**
- **In what ways is the nature of situated change emergent and constrained in an outsourcing project?**

**And will cover the research outcomes:**

- **What can the case findings tell us about outsourcing theory?**
- **How might these findings be used to improve the practice of outsourcing and deliver better outcomes?**

#### **Introduction to broad area of research**

This thesis considers a seemingly straightforward question as to why some outsourcing relationships succeed and others, in apparently similar contexts, fail. As it was put by a senior product line FMCG director to the author, *'... we have a few successes and lots of semi-successes and some outright failures and I don't know why.'* Outsourcing as an interfirm practice has been a subject of intense academic research, and well over thirty reference theories from similar disciplines have been co-opted and used to explain what is going on, from the decision to outsource to how outcomes are measured (Dibbern et al., 2004, Lacity et al., 2010). Despite this intense level of research there

have been pleas for a more endogenous approach, especially triggered by emerging dissatisfaction with the explanatory power of constructs such as transaction cost economics and the RBV, and the over-rationalistic and normative perspective dominant in the literature (Lacity et al., 2011b). This research approached the problem of a lack of an internal explanation for outsourcing by adopting an institutional and practice-based lens focused on the micro practices of everyday work. The research examined how internal factors are maintained and change the institution, adopting the perspective that micro practices transform organisations (Powell and Colyvas, 2008). The research is laid out in five broad sections covering:

1. **The impact of prior history** – This section explores how the long-standing relationship between the two focal organisations developed and changed as wider scale processes forced formalisation and centralisation. The findings showed the strong influence and resilience of previous practices and how previous history imprinted the ways of working throughout the project.
2. **The impact of control on practice** – Six case organisations collaborated together to create a software application and support service over a period of three years. The findings demonstrate that continuous cycles of negotiation were characteristic of the implementation as constraints were explored, project contingencies addressed, and actors adapted to changing circumstances. It also demonstrated how work practices built over many years are strongly resilient and resistant to change.
3. **How power and conflict arises** – Collaborative partners, across the buyers and vendors, continually sought to shape and control the project trajectory to be in line with their own objectives. The findings showed how power and conflict are embedded attributes of practice-based change and emerge naturally in the course of collaborative project work.
4. **The constrained nature of outsourcing** – This section discusses how an interfirm relation between the project actors became a process of adaption to new norms and practices demanded in the change. The findings extend the notion of change to include improvised change as a purposive activity.
5. **Summary and implications** – Outsourcing change resembles an improvised practice where there is a gradual adaption to new norms and a slow erosion of

old practices as the service is created. Change in an outsourcing is constrained by real world capability gaps and sufficient time must be allowed for the creation and embedding of effective service practices.

## **8.2 The impact of prior history**

The period from the building of the original application to the start of the acquisition of HRMSys was a time of relatively slow and gradual refinement of the system by HRMDept and PersonSoft, characteristic of incremental change. During this long period of time mutual adaptation allowed the build-up of practices and norms that became firmly established and highly resistant to change (Zucker, 1987). This long-term stability was interrupted by three environmental changes; by the wider scale restructuring within DefOrg, the decision to centralise many IT services including HRM IT, and finally, by the start-up of HRMSys. These three triggers arose within a wider institutional context of DefOrg brought about by the ending of the Cold War and the collapse of the Soviet Block. This forced a fundamental reformulation of the DefOrg military strategy away from front line and flanks frontal war towards intermediate, out of area, and rapid reaction, and this implied a physical re-alignment of assets, business processes and support and a major change in institutional practices (Wallander, 2000). This wider context impacted HRMDept and became the eventual business driver for HRMSys and subsequently the abandonment and the de-institutionalisation of previous practices as they were eroded and replaced during the course of the implementation (Oliver, 1992). In the following sub-sections a breakdown of the antecedent influences as experienced during HRMSys linked to literature is discussed.

### **8.2.1 Projecting control into the future**

Institutions at any point in time are an accumulation of past experience and this history has a profound influence and ‘shapes the present and constrains the future’ (Berger and Luckmann, 1967, Kimberly and Bouchikhi, 1995, Wiebe et al., 2010). Furthermore, how an organisation responds to change can be shaped by internal capabilities built up over a long period of time that ‘cannot be changed overnight’ (Kimberly and Bouchikhi, 1995: 17). In the early development of the incumbent software (MAPS) there was a recursive process of exploration, innovation, and

adaptation as actors explored and used the application capabilities (Orlikowski, 1992). Within this context there were two integrated processes. Firstly, HRMDept modelled their processes and practices within the application. Secondly, PersonSoft adapted the application, extending the capabilities of the existing technology to meet new functional demands. There was a recursive process of mutual fit, gradual adaptation and experiential learning. Both focal organisations created shared ways of working as their practices evolved over time and converged (DiMaggio 1983).

As a result of this, firstly, the existing work processes were encoded in the application, and secondly, the way they were functionally represented was defined. This implied that the IT system represented the state of practice of the HRM department (Lyytinen et al., 2009). This meant, that when centralisation of the HRM processes was mandated, the incumbent application represented and structured the rules and resources that underpinned practice at HRMDept (Orlikowski, 2000). Furthermore, the requirements specification, within the bid documentation for HRMSys, was entirely based on the incumbent system (MAPS). This acted to constrain any proposed solutions from other suppliers to fall within the envelope of the existing application. This effectively replicated the incumbent into the future, ensured stability in work processes and practices for HRMDept, and biased selection in favour of PersonSoft. This observation shows that a long term history can facilitate inherent organisational inertia and a tendency to shape the present and future in line with the past (Kimberly and Bouchikhi, 1995), and create an inertia that can only be broken by ‘second-order’ radical organisational change (Bartunek, 1984).

### **8.2.2 Maintaining organisational influence**

Funding for the old MAPS product was ad hoc in the sense that development was financed by diverting money from existing budgets. Funding was thus limited and led to an approach focused on getting as much functionality as possible for the minimum cost. PersonSoft responded to this by adopting a complementary approach to delivery and became adept at tailoring solutions to emerging, sometimes vague, business requirements. A process emerged where outcomes were prioritised and funding organised on a time and material basis characteristic of a collaborative environment (Poppo et al., 2008a, Weber and Mayer, 2011). This implied that prior to the HRMSys

project governance was collaborative, with low process control, limited standardisation and an orientation towards social control mechanisms (Parmigiani and Rivera-Santos, 2011). As a corollary the processes and practices for formal project management within HRMDept and PersonSoft at the project start were embryonic and more lip service than rigorous application. During the IOC phase this was a key constraint, as the consortium lead contractor applied formal techniques, and these control processes had to be accepted and learned by all suppliers.

Furthermore, actors within HRMDept had become adept at leveraging the use of the technology to other areas, particularly when these extended their overall resource base and influence within the organisation. The possession of the incumbent application as the only source of coherent HRM data in DefOrg made key actors dependent, and gave HRMDept influence and the ability to drive policy, an ability which they jealously guarded. A second aspect was a more emergent process where development moved beyond the technical and functional constraints of the existing configuration to support improvised practices facilitated by the technology itself (Orlikowski, 1996). The application was radically adaptable, end-users as well as developers could quickly create exploratory functions, used prototypically, to explore new functional areas (Malone et al., 1992). Exploiting these capabilities HRMDept were able to develop new approaches and extend influence within the broader community even to areas outside of the core remit of HRM processes. The application therefore became further co-opted as a tool of political and organisational influence. As well as this extension of organisational influence this also enabled the maintenance of control over PersonSoft, forcing them to make relational investments (Weick and Quinn, 1999), whilst ensuring long-term continuity of authority over HRM and the supporting technology processes within DefOrg (Orlikowski, 1992).

### **8.2.3 Influencing how business is interpreted**

The approach offered by the consortium as the IT solution was not a packaged COTS application as defined in the bid process. PersonSoft, except for minor add-ons covering specific browser based technologies, offered the incumbent technical solution for the new HRMSys application. This was in effect a tailor-made solution masquerading as a packaged solution. The application, with its embedded processes

and practices, formed the core of the new development and created a dependency on the project in terms of the processes inherited from the previous ways of working. In addition, HRMDept mandated that all existing functions in the incumbent (MAPS) application, including any in-house developed configuration, were included in the HRMSys project.

The old processes, business rules, application behaviour, processes of business definition, administration processes and user embedded software thus became included as part of the new system. This confluence of work processes and application development techniques and the embedded mental models acted to frame the new development as an extension of the old and strongly linked the new development to the original practices.

A further problem during the transition to the formal contracted structure was a mismatch between the logic of previous practices that emphasised informality, collaboration in development and expertise, compared with that required for formal project control more in line with a management control logic (O'Reilly and Reed, 2011, Offenbeek et al., 2013). This mismatch was seen throughout the project trajectory in terms of an historical lack of documentation, and a bias towards continuous rework and ad-hoc firefighting to solve problems, which clashed with the formal routines of project control during the implementation of HRMSys. Consequently work practices were slow to erode and proved very resilient throughout IOC especially as other projects, running at the same time, acted to maintain and continually reinforce the status quo between HRMDept and PersonSoft (Oliver, 1992).

#### **8.2.4 Summary – RQ 1: The impact of prior history**

This research shows the fundamental and long reaching influence of the extended history between HRMDept and PersonSoft and how antecedents and initial conditions imprinted the trajectory of the HRMSys project (Doz, 1996, Inkpen and Currall, 2004) . This history influenced the project in three ways; firstly, defining how the new application was to be created and interpreted, secondly, in re-producing existing practices and processes, and thirdly, in the maintenance of prior knowledge and relationships.

Furthermore, the reproduction of extant norms and ways of working enforced

continuation of existing dependencies and authority over organisational processes and procedures. These dependencies constrained activities, blocked alternative interpretations, maintained poor practice and redundant processes, and accordingly acted to create sub-optimal solutions. Finally, the long-standing embedded practices were very slow to erode and dissipate and did not entirely disappear over the three years of the IOC phase. The old practices created right at the beginning of the relationship between HRMDept and PersonSoft proved to be very resilient, even re-emerging later for the Full Operating Capability (FOC) phase. This demonstrates the long reaching influence of early learning and adaptation processes as highlighted by Kimberly and Bouchikhi (1995).

### **8.3 The impact of control on practice**

Once the decision on scope and implementation has been made implementation can occur where buyers and suppliers collaborate and ‘co-evolve’ to create the outsourced service (Inkpen and Currall, 2004). This consists of collating and organising resources, planning and structuring the intervention and the physical creation of the service. Strong controls and tight contracts focused on ‘safeguarding’ or ‘prevention’ (Parmigiani and Rivera-Santos, 2011, Poppo and Zhou, 2013) increases the control over suppliers but reduce the opportunity for cooperation in outsourcing engagements (Li, 2011). In this section the evolution of the everyday practices of work will be considered from two main aspects; firstly, how purposive actors challenged strong controls creating a negotiated order, and secondly, how process and practices are adopted, institutionalised, and/or discarded by everyday action.

#### **8.3.1 Creating a negotiated order**

The service specification in the bid documents was defined based on the existing incumbent application created by PersonSoft. It was assumed, by the other members of the consortium, that prior capabilities, supplier business competence and working application software to support the approach were all available at project start. Furthermore, the list of requirements was assumed to be exhaustive and to cover all the demands within the fixed price offer. This fixed price and scope assumption was invalidated by the inclusion of new and undefined requirements and the formalisation

of the incumbent as a baseline, which adversely affected planning and control (Dvir and Lechler, 2004).

The additional new requirements were imprecisely formulated, and to clarify them access to business owners was needed to determine the business rationale and objectives. However this initiative was inhibited firstly by an absence of authoritative owners of business processes who were able to articulate the business need, and secondly by the lack of the ability of designers to use the mandated design methodology. For the latter point, there were no consultants across the project who had any real experience with the contracted design approach. This was a mandated practice standard imposed on the project but it proved impossible to deliver the required quality. Overall these two factors opened up a major knowledge deficit within the project.

Furthermore, although the existing business processes, as captured in the incumbent, were fairly well understood and developed over many years between HRMDept and PersonSoft, the new unfamiliar requirements covered an undefined area of the business. This meant the consortium instead of a fixed delivery had to confront a major change in scope - a known source of project failure (Meredith et al., 2014, Millhollan, 2008). Fundamental gaps emerged during the initial stages of IOC. Firstly, a feasibility gap, with too much to achieve within the timescales; secondly, a definitional gap and an inability to understand the overall business objective, and finally, a capability gap in creating software using the mandated method. Practices emerged that attempted to close these deficits. This was seen in cyclic processes of negotiation with proposal and counterproposal as actors bargained, shaped boundaries, and exerted influence to support their own position (Ulf and Johansson, 1997). The main challenge was focused on resources, and specifically how to match capabilities to demand, and observations showed how quickly internal conflict can arise from disputes over an equitable division of resources within a constrained project (Kumar and van Dissel, 1996).

Two main features were observed in the move from an ad-hoc artisan approach creating bespoke software to delivering a COTS standard product:

- An attempt to reproduce old ways of working, and relationships, that would help reduce the impact of the formality and rigour of the contract. The project

approach that favoured standardisation and compliance, rather than informality, constrained the entire project to the speed of adaptation of PersonSoft.

- Mechanisms such as design rules, audits and acceptance testing, characteristic of a formal project management approach, were at variance with historical practice, and forced the software supplier to undergo a fundamental re-evaluation of its processes as it struggled with the demands of the delivery.

PersonSoft lacked essential skills and capabilities for a formal project and was fundamentally under-resourced for this delivery. Furthermore, the assumption that a replication of the old ways of working between HRMDept and PersonSoft would be established led to an underestimation of the task to be done. Particularly the need to support supplier partners and to create supporting documentation that a formal system needs became an issue. The research showed the integration of the team was blocked due to ineffective knowledge-sharing practices and the exchange of codified and tacit knowledge essential for development of effective partner performance (Becerra et al., 2008, Blumenberg et al., 2009). In general institutionalised practices of knowledge creation and transfer were absent and core members were excluded from the learning context (Hong and Fiona, 2009). This also prevented the explicit demonstration of complementary partner competences, especially TestCo, and led to reduced performance of the consortium (Tiwana and Bush, 2007). It is this mismatch between the historical ways of working, the underlying logic and demands of a formal system development, and the slow process of adaptation that explain the relative failure of software delivery.

The change demanded could not take place within the contracted timescales despite exhortations and threats of liquidated damages. The research also demonstrated that an absence of a clearly defined knowledge acquisition process within an inter-firm context can open up major deficits in trust between organisations and groups (Blumenberg et al., 2009). In this case these gaps were observed between developers/users, developers/consultants, buyers/suppliers and across the consortium that endured throughout IOC.

### 8.3.2 The erosion of practices

De-institutionalisation is the process of the erosion of existing institutional practices, occurring due to three main forces: political processes, where organisations respond to shifting power dynamics, functional pressures, where the salience of current practices are questioned in favour of the new, and social pressure, where existing social norms and existing practices are questioned (Oliver, 1992). The evolution of purposive work is a form of transition and within a changing institutional context is always adaptive, as practices are discarded and deinstitutionalised and their relative salience varies. Older, less appropriate or redundant practices, or those practices shown to be ineffective, are discarded more quickly whilst others that are more resilient or useful are merged (Jarzabkowski et al., 2007). From this perspective practices can be a superposition of old and new. Practices, the actual activities, exchanges, and processes of work undertaken purposefully by actors working towards a common goal are not static, vary with resource shifts, and are compromises. To examine the findings in the light of de-institutionalisation theory, following a brief discussion of de-institutionalisation practices shown in Table 8-1, is a mapping of the empirical observations related to the Oliver (1992) conceptual model of de-institutionalisation.

#### Political Drivers

The contract structure, statement of requirements, and the mechanisms to create the software artefact were defined. There were pressures to adopt new design procedures in line with the contract. Furthermore, stricter formal testing weakened the salience of PersonSoft's own testing that was found in practice to be inadequate. This weakening of utility led to restructuring, a loss of personnel, and the abandonment of these ways of working and emphasised the movement of control away from PersonSoft to SI and TestCo.

#### Functional Drivers

Functional pressures were experienced in the reduction of the informal ad hoc processes no longer valued by the other actors. Incompatibility of current practices and processes was exposed during the change to a formal system of record within a controlled environment. Efficiency, delivery to time, and documentation were all representative of a change in technology and economic objectives for the project.

Furthermore, the bespoke development process as practiced in previous ways of working was unknown to the consortium partners. There was a reduction in salience of the ambiguous development process in favour of industry approaches that opened up development to review and scrutiny. Unclear processes, and hidden practices, are difficult to assess and rely on. Confidence and goodwill can only be gained from successful past experience. When this is exposed as unsustainable, especially where there is no linkage to past history, distrust arises when failures occur. This reduces the confidence in the work and acts to deinstitutionalise the previous practice.

### **Social Drivers**

There was turnover of key project personnel and there was an advancement of actors on the buyer side that had no stake in the past ways of working. This was observed to the extent that there was a hostile questioning of the value of previous ways of operating and the production of deliveries. This new cohort of managers '*unhampered by existing debts, loyalties and history*' adopted a more formal orientation to the old incumbent supplier (Dawson, 1996: 175). This observation that an inward 'migration' of new professional managers disrupted the old consensus, acting to de-institutionalise past practice, extends the notion that new entrants carry their old institution with them, and this can act as a disruptive force (Kraatz and Moore, 2002). Although this disruption was partially offset by parallel projects between HRMDept and PersonSoft maintaining a link to the past, this phenomenon caused erosion of social bonds and the loss of shared meaning between HRMDept and PersonSoft. This institutional factor acted to exacerbate an already problematic knowledge-sharing approach breaking the link between old partners and preventing the establishment of new norms of collaboration.

### **Loss of salience old practices**

Deinstitutionalisation of old norms and practices was driven by changes in functional necessity by the imposition of new technical norms and standards required and had a political and economic impact (Oliver, 1992). The creation of the new application took place within a governance structure that emphasised separation and control. This factor, exaggerated by the erosion of the old social consensus due to repeated failures in delivery, led to a gradual breaking up of old social links and consensus. This latter

feature was also emphasised by the phasing out of a political consensus as new actors came to the fore, new organisations assumed leadership, and old leadership left the organisation and took with them their institutional knowledge (Gilmore and Sillince, 2014).

**Table 8-1 - Empirical observations of de-institutionalisation**

Drivers	Organisational Level of Analysis	Contextual/Structural Level of Analysis
<b>Political</b> Shifting power distribution brought about by ending of dyad	Reduced applicability old ways of working Poor performance and quality exposed during testing Weaknesses in design capabilities Exposure of existing weak processes Stricter project control replaces ad-hoc governance Shifting control towards SI/Agency Subordination of PS/HRMDept	Formality of HRMSys as system of record Stricter formal testing and entry requirements Strong emphasis cost control DefOrg Shifting salience and approach DefOrg in Europe Legitimacy and strength of formal project and client control Centralisation of HRM processes
<b>Functional</b> Salience of old practices challenged by technical rigour	Reduced salience ad-hoc reactive support Functional testing mismatched to technical need Instrumental focus on deliveries lack of 'flexibility' Maintenance of prior practice in parallel projects Reduction in citizenship behaviour shift to instrumentality	High technical specification HRMSys Stricter standards of development Focus on defined and precise requirements Structurally precise technical architecture and infrastructure Move to enterprise scale applications and support
<b>Social</b> Breaking of old social bonds	Core sponsor removing from day-to-day control Arrival new actors with no prior history Arrival new actors with different business models Turnover within supplier teams Geographical dispersion suppliers Loosely connected practices across teams Move towards shared delivery and knowledge creation	Drive towards standardisation different ways of working Consortium group based activities Expansion of HRMDept in scale and scope Formalisation buyer and supplier relations Take over SI by larger IT supplier

### 8.3.3 Summary – RQ2: The impact of control on practice

Practices evolve over time as a constrained and negotiated order and are the outcome of buyers and suppliers negotiating and compromising before agreeing a direction (see Jarzabkowski, 2005). Working methods and approaches seem to be fixed at the beginning by prior history (or experience) where this exists, or by dominant actors where there is none, and adapted over time to the specific context. In a practical way the mechanisms of work are matched to the actual delivery needs and the enacted substantive processes may differ from those set down in any formal ostensive procedure or contractual imperative. This observation confirms that 'structural elements may only be loosely coupled ... to activities (and) rules are often violated, decisions often unimplemented' and the link between the everyday activities of work and the controlling structure may be very limited (Meyer and Rowan, 1977: 343). Practices may not evolve optimally, and may often be sub-optimal, as they are a result of a compromise based on the actor's objectives and will be framed (in some cases) by

opportunistic or political considerations and are always interest motivated (Navarro, 2006). Finally, working practices may not be effectively internalised due to resource or capability constraints – actors may not be able to apply them due to skill and capability shortfalls.

This case demonstrated that the evolution of purposive work is a form of transition and within a changing institutional context is always adaptive. Practices are adopted, discarded and deinstitutionalised as their relative merit varies. Older, less appropriate or redundant practices, or those practices shown to be ineffective, are discarded more quickly, whilst others that are more resilient or useful are merged (Jarzabkowski et al., 2007). From this perspective practices can be a superposition of old and new. Practices, the actual activities, exchanges and processes of work, are undertaken by purposeful actors working towards a goal, are not static, but vary with resource shifts and are compromises.

#### **8.4 How power and conflict arises**

The interfirm consortium created to deliver the HRMSys application consisted of six interacting groups, each with their own internal objective and supporting its own organisational and individual group objectives (Morgan, 1997, Whittington, 1993, Wilson, 1997). These organisations were operating within the overall framework of an overarching goal as laid down in the contract - the delivery of the HRMSys application. However they needed at the same time to achieve other objectives; such as cost reduction, service delivery and service profit margin. Changes in institutional context, relationships and hierarchies, objectives and outcome have been shown to engender conflict if the objectives of constituent organisations are compromised or contested (Campbell, 2010, Campbell, 2004, Lindegaard, 2013). Furthermore, a project environment displays systemic conflict throughout all its stages, a situation known to be associated with poor outcomes (Verma, 1998). In this section, drawing on Lawrence (2008), the discussion will focus initially on the systemic control and power aspects of the institutional field and then on the perspective of actor actions. This shows how the transition from an existing stable relationship to the new structure disturbed participant objectives, and demonstrates how power and conflict became endemic and arose naturally in the course of the practice of purposeful work.

### 8.4.1 The application of systemic power

Institutional power is the power of the organisational field and is expressed by rules, procedures and control mechanisms that control and frame actor actions (Lawrence, 2008). The IT services technical architecture at DefOrg was complex and all IT projects had to comply with defined architectural standards, process directives and governance rules. Centralisation of the processes, and the management of the application, implied the incorporation of the application into the managed infrastructure. DefOrg (Agency IS Services) would be the authority maintaining and delivering the service and the HRMSys application had to be consistent with the rules of the complex IT landscape they operated. The second aspect of institutional power was control over the implementation process itself that transitioned the application onto the IT landscape that had to follow defined development and testing routines. DefOrg laid down the rules in the form of reference documents that structured a framework within which all implementation should take place. These were referenced in the contract as mandatory objectives of the project (Scott, 2014).

This application of control materially impacted the suppliers, and added to problems with the sustainability of the project, due to the heavy burden that standards and compliance placed on capacity. The rules were enforced by the use of threats, rejection of deliveries, and non-acceptance of plans which were all examples of supplier discipline (Heiskanen et al., 2008). DefOrg, much like other strong and bureaucratic public sector organisations, tended to be risk averse, adopted a strong control posture (van der Meer-Kooistra and Vosselman, 2000), that was aimed at reducing environmental uncertainty and risk (Kim et al., 2013, Pfeffer and Salancik, 1978). Contractual governance, the visible aspect of the organisational field, controlled the process of transition and managed the project to deliver effective performance (Weill and Ross, 2004). The use of technical standards, rules, procedures and testing regimes were crystallised instruments of power and were resources drawn on to enforce compliance and discipline (Orlikowski, 2000). Enforcement of contractual demands continued even for elements with limited utility and the needs of contractual compliance became prioritised above actual functional delivery. Strong use of coercion to comply with all contractual elements negatively affected collaboration and even generated distrust (Nyaga et al., 2013). Resistance emerged by questioning legitimacy,

negotiating exceptions, bargaining for leniency, and by basically ignoring the demand. These emerging observations support an idea that resistance can emerge structurally as a consequence of disturbing established norms, cultures, and power distributions, and not just from processes such as implementation, and accordingly can be difficult to overcome even by process measures such as involvement (Markus and Pfeffer, 1983). Furthermore, project structuring restated accepted societal norms in terms of buyer/supplier, contractor/subcontractor and even military/civilian relations. For example, this was seen in the unquestioned legitimacy, privilege and authority given to the client.

#### **8.4.2 Linking resistance and conflict**

The adoption of a preventative, complex contracting approach meant the practices of work at HRMSys were strongly regulated and instrumentally framed with an emphasis on monitoring and vigilance (Barney and Hansen, 1994, Malhotra and Murnighan, 2002). This was even observed in how meetings were structured to restate the project hierarchies in terms of the norms of behaviour, the planning practices, the allowed topics and who was allowed to speak (Fleming and Spicer, 2006). The subordinated position of PersonSoft was reified and the flow of delivery and information between the parties actively managed. This observation emphasised two concrete aspects of how decision making was controlled, firstly, how decisions are taken in situations where there are conflicts of interest, and secondly, over the control of legitimate dispute, what topics could be discussed or even legitimately raised (Hardy, 1996b, Horton, 2003, Lukes, 1974).

Bargaining behaviours developed in four main areas: managing capability gaps, containing scope, circumventing control, and negotiating a modification of the plans and standards (Barrett, 2004: 253). Capability gaps had emerged from the differences between deliveries in the contract, requirements, and those feasible within the current software application. Careful articulation of precise meanings of deliverables, persuasion to accept this reduced capability, or the removal of problematic functions to later in the activity were examples of negotiated compromises. These activities represented the application of influence to change the behaviour of buyers (Lacity and Hirschheim, 1993, Pfeffer, 1981). This observation confirmed bargaining power as a

forceful factor in framing the choices made during implementation (Heiskanen et al., 2008). In this case suppliers acted opportunistically to maximise any impact of the change, with buyers endeavouring to minimise the effect on time and budget and claiming an offset against already delivered functions in the incumbent. These are examples of a struggle over resource distribution within a project context (Williamson, 1985a).

Resistance was expressed by negotiating relief from demands, appeals to prior relations, challenges to authority and relevance, and subverting formal hierarchies. Resistance and cycles of negotiation and bargaining became endemic as gaps in expectations and deliveries emerged. Furthermore, resistance in this context was seen as a response acting to mediate and shape the impact of change or control to acceptable levels and as such was an integrated part of the action, evaluation and the negotiation process. This supports notions that resistance is not just 'restrictive' but active and purposive and can operate as a form of 'negative' feedback that potentially controls and avoids wide variability in project decisions (Perren and Megginson, 1996, Piderit, 2000).

This observed behaviour demonstrates that power and conflict within an inter-firm relation are dynamic processes contingent on the scale and scope of the gap in performance and the relative power between the parties (Cox et al., 2004). Furthermore, it demonstrates that in real world implementations changes in scope, performance deficits, uncertainty and unplanned contingencies are daily facts of life. These continuous changes and problems can swamp planning practices founded on the 'iron three' of quality, cost and time and can make them ineffective (Cicmil and Hodgson, 2006, Pinto, 2010).

### **8.4.3 Summary – RQ3: How power and conflict arises**

The analysis demonstrated that institutional and systemic power are realised by standards, guides, contracts and rules of engagement and are constraints that control how project objectives are interpreted and enacted. Systemic power was materialised by compliance, compelling activities to be in line with the rules, by rejection of deliveries outside of norms, or enforced by withholding resources. Compliance also had negative effects and was used sub-optimally supporting redundant processes that

are no longer aligned with overall goals. Power has a dual aspect of control and dominance but can also provide the energy to break down stability and institutional inertia (Campbell, 2010). In periods of crisis power and dominance can be useful to take charge and force change.

Gaps and deficiencies in output are almost inevitable in a project context delivering complex technological artefacts. A significant gap can generate a cascade of corrective actions that can trigger cycles of power and conflict. Problems result in bursts of activity and conflict that gradually decline as a new stable state is reached. Bargaining and trading appears endemic in a contracted service as partners moderate project aims to align more closely with their own objectives. Bargaining was also observed as a tool of resistance to divert attention from deficits and to control the impact of change. There was a latent balance of power observed between the organisations shifting during the project as the possession of scarce resources became more salient or key delivery dates approached. The role of resistance was shown to be legitimate, exposing problems in processes, and used to mitigate the effects of power, and acting as a mechanism of organisational feedback and control. From this perspective power and resistance observed in this case study acted together to control the velocity of change.

## **8.5 The constrained nature of outsourcing**

Complex technology impacts all parts of the organisation (Pishdad and Haider, 2013). Information Technology Outsourcing (ITO) involves the creation of a service, including the supporting processes and technology, within the bounds of another organisation. It affects the organisation and the vendor creating the service in a fundamental way. Outsourcing within the multiple supplier context created to deliver HRMSys challenged the existing cultures and norms and involved a fundamental reconfiguration of organisational process, practices and scripts within HRMDept and PersonSoft.

### **8.5.1 Practice-based change**

The research identified six implementation transformations undertaken during the project as control moved from an informal collaborative context to operate within a contracted and project managed delivery. The overall transformation touched on all

aspects of the institution, the routines, scripts, processes, and control procedures and was to be completed within the contracted timescale of the IOC implementation of two years. This forced adoption of practices, rather than selective retention of the existing modes of work, led to the emergence of resistance and a questioning of the legitimacy and worth of the new system. Furthermore, forced change within a strict time frame impeded the development of social control processes, and the organisations responded by adopting an instrumental focus on deliverables and scope. The research supported Bignoux's (2006) argument that short-term alliances are prone to conflict, focus on specific reciprocity, develop a calculus-based trust and are characteristically difficult to manage. In addition, a focus on timelines, and contracted deliverables can preclude collaboration and innovation (Parmigiani and Rivera-Santos, 2011, Weber and Mayer, 2011). This was seen in HRMSys through excessive time pressure and restricted time for knowledge sharing and a form of selective attention on short-term issues at the expense of longer term emerging problems.

Innovation in practices was observed within the project context not just by the emergence of unscripted ideas but also in problem-solving where choices are made that can compare alternatives with expected outcomes (March, 1981). When an obstacle was encountered, such as the failure of an embedded component, actors co-opted stakeholders, adapted the application and manipulated rules to improvise their way around the blockage. Improvising in this sense does not mean ad-libbed, but mobilising available resources, tacit skills, capabilities and meta-routines in the search for a solution. This observation extends the notion of improvised practice where new processes emerge from a process of 'ongoing adaptation and adjustment' (Weick and Quinn, 1999: 362) .

Successful transition and adoption depended on how the new routines were internalised and became part of the permanent practice and routines of the organisation (Feldman, 2004). The outcomes of the change transformations were constrained by two principal factors; firstly, the time needed for the change, and secondly, the degree of acceptance - and therefore whether the change was resisted and modified. Change has velocity and momentum (Wiebe et al., 2010). Structure, practice and climate are recursively implicated in the evolution of change and each transformation can be constrained or its scale limited and reduced. The relationships

between goals, as defined in contracts, and actual outcomes may be variable as in practice there are always constraints on achievement emerging from the change process itself (Feldman, 2004). Change may always be constrained and this may imply different outcomes in outsourcing derive from contextual and practice influences.

Each transformation task, and embedded work routine, was interpreted in practical use. Between buyers and suppliers a recursive pattern of exchanges and patterns of amendment and review emerged. By this means both parties adapted to each other while simultaneously interpreting the overall goal from the standpoint of their objectives. The case shows that the transformation was partial; many old practices survived intact throughout IOC, which supports the idea that for a radical change to be complete it must be completely internalised and the old ways of working eroded and deinstitutionalised. Unless this is so, the change may be unstable and may subsequently be readily eroded, and perhaps even regress, should the context change (Gilmore and Sillince, 2014).

### **8.5.2 Improvised practice**

A practice-based model of change focused on the internal dynamics of an organisation posits that change emerges from the everyday work of purposive actors working towards achieving goals (Berends et al., 2003). This differs from an incremental perspective that assumes small innovations occur continuously in organisations and if these innovations are selected and embedded as part of current practice a change has occurred. In this mode successful new ways of working are selected and unsuccessful ones are discarded. Whilst the total change from end to end covering the six transformation tasks can be regarded as radical, and in total supports a punctuated equilibrium model, the actual transformative activities, the work that achieves the change, occurs between actors carrying out every day work. Actors mutually adapted to each other's practices, acquired the required methods, and worked within the governance oriented towards project objectives. This means that although the transformation practices of work took place under the constraints of context they were always directed towards meeting the overarching goals. From this perspective the practices observed during HRMSys were an extension of incremental change.

The observations during the research do not lend support to a wholly

technological determinist position as might be implied by the application of strict contracting rules and control. Technology, controls, contracts and defined methods of working constrain activity, but only in a limited way, as actors interact recursively with the technology and processes. Managed change, controlled and directed (solely) by management, and underpinned by a normative re-educative approach, also found little support within the HRMSys project. Only very late, in the last few months, was even any simple communication or training attempted. In general the observations revealed a negotiated and disputed context. As a consequence the research supports the notion that the change was forced by centralisation, accentuated by a formal contracting approach, which was nevertheless challenged and modified in practice by the buyers and suppliers. This type of constrained and forced change, with observable agency, can be positioned as a superposition of punctuated equilibrium and practice-based innovation (Weick and Quinn, 1999). The innovation emerged as problems arose in the routine practices of work as suppliers and buyers strived to solve problems within the constraints of the project. Critical junctures and incidents can disturb the status quo and initiate change but change is a consequence of enacted practice, new scripts and norms are learned by doing, and accordingly HRMSys can be seen at the site of practice innovation.

Strong governance put in place to constrain and regulate supplier behaviour to reduce risk, minimise opportunism and ensure success are founded on a rational deterministic perspective. This notion of technological determinism, implicit in current outsourcing practice, ignores the effects of actor agency and the resistance actors can mobilise to modify an implementation to suit sectional interests. From this perspective outsourcing is an enacted process with parties able to escape and resist contractual straightjackets. This can lead to patterns of power and conflict during implementation that unfolds as the different parties interact and negotiate. From this standpoint, outsourcing outcomes are controlled by processes of negotiation, are emergent over time, and the eventual achievement is not entirely determined in the contract.

### **8.5.3 Summary – RQ4: The constrained nature of outsourcing**

Change processes in outsourcing are constrained fundamentally by the timescale of the contract that is typically between two and five years. This means institutional

change must occur within a limited and fixed timescale and therefore may be incomplete and partial. A restricted timescale, and a strong contractual context, does not allow for the development of social control processes or collaboration, and this is known to adversely affect change management. Accordingly the focus within an outsourcing project tends to be instrumental and on contractual imperatives and as a consequence can be blind to emerging social factors (Bignoux, 2006).

Organisations in an interfirm relationship delivering a common service take time to learn the new routines, context, and rules, especially for complex IT services. New practices must be enacted and internalised then applied and during this process are adapted by actors. The adaptation process is overlapping and recursive and overall the change is emergent, but with intent, the actual outcome a compromise between the interacting parties. Change as Tolbert and Zucker (1996) argued occurs in the practical processes of work and is loosely coupled to structure. Actors innovate, change processes, and adapt technology during the course of everyday work to achieve ‘various and dynamic ends’ (Orlikowski, 2000: 423).

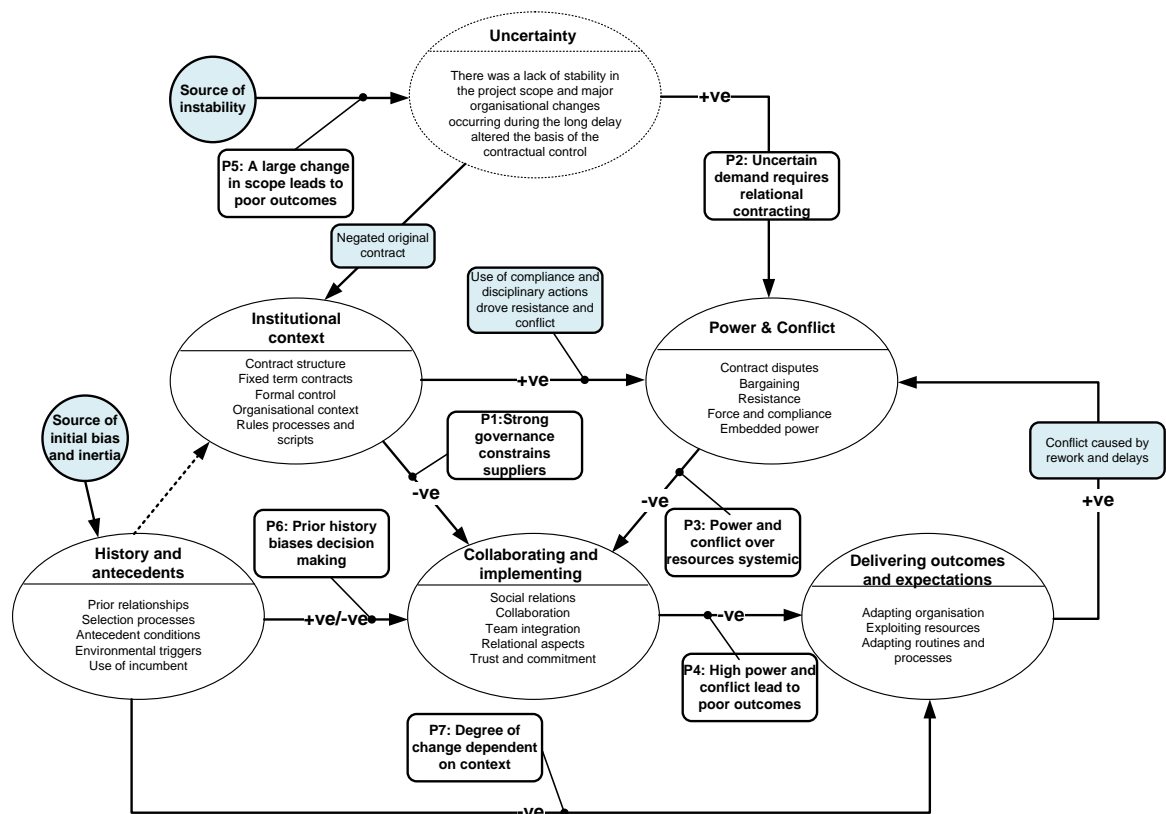
Strong contracts aim to frame implementation to reduce risk and are underpinned by a technological determinism that holds that agency power and resistance are unimportant or at least negligible. The results from the research showed a high degree of agency was visible from all actors within the HRMSys project. They worked together, negotiated, and recursively shaped the context to align with their own sectional needs. An order emerged as multiple actors enacted and interpreted goals, shaped practices, and agreed what must be done. The overall outcome of this process was a negotiated balance between them. Power and conflict emerged naturally from this process of everyday work and was shown to be both generative and restrictive. It was generative in the sense of providing energy to overcome inertia and surmount obstacles, and restrictive in enforcing compliance to no longer required deliverables or redundant processes.

## 8.6 Explaining different outsource outcomes

The research findings are shown in **Figure 8-1**, mapped to the conceptual framework developed earlier in **Section 2.4**. The consortium created to deliver the software consisted of six interacting partners, each with their own internal objectives and

supporting its own organisational and individual group needs (Marshall et al., 2015, Morgan, 1997). Although the parties within an outsourcing implementation have the common objective of delivering the agreed service within the scheduled timescale they have different aims within the commercial contract. Both sides are concerned with how value is acquired from the delivery and this creates a latent tension at the heart of the project.

**Figure 8-1 - Mapping case findings to conceptual framework**



Source: Author

Ignoring the capability shortfalls evident from PersonSoft's performance, the major 'fault' within this implementation was not accounting for the very large change in scope that had occurred during a hiatus of almost three years from contract award to actual start. This is represented in **Figure 8-1** by the inclusion of a construct representing the uncertainty in demand that resulted from this major change in scope - a known problem and inhibitor of success (Beaumont and Sohal, 2004). This had two major effects, firstly, the basis for a fixed price contract in the business case was undermined, and secondly, a negotiation process was triggered as buyers sought to

rebalanced the contract commercially (Barrett, 1995). Major change especially within a rigid contracting regime is very difficult to achieve and engenders conflict as was shown in this case study (Campbell, 2010, Lindegaard, 2013). Buyers may be able to force compliance by using commercial pressure but this, the research shows, never resolves the underlying problem, and drives resistance underground to appear later as opportunism when emerging problems require flexibility from suppliers. Preventative contractual regimes as shown by the case findings reduce cooperation (Parmigiani and Rivera-Santos, 2011, Poppo and Zhou, 2013). Central to the findings is the core role played by non-rational actions and power in mediating the progress of the implementation (Heiskanen et al., 2008). Strong contractual contexts, common in the public sector, constrain inter-dependence and collaboration especially when demand is varying (Cox, 2004). Furthermore, poor outcomes and failure in delivery reduces trust and can lead to dissatisfaction and conflict (Grönroos, 2011). This aspect of the research findings suggest an emergence of a positive feedback loop caused by sub-optimal work practices, consequent application of tighter contracts leading to a further instrumental focus, and resulting lower collaboration. Such a spiralling downward of collaboration and outcomes needs further research but supports findings in an alliance learning context (Doz, 1996, Inkpen and Currall, 2004).

### 8.6.1 Research propositions

The notion underpinning this research is that outsourcing is a management innovation implementing new processes, practices and routines that impacts all parts of the business (Chaudhury and Mukherjee, 2007). This research has explored this issue via researching in depth a large scale implementation of an outsourced application development using a practice-based lens and has suggested the following research propositions:

**Proposition P1:** Strong contractual governance places constraints on supplier manoeuvrability in responding to business uncertainty.

**Proposition P2:** Uncertain and variable demand in an outsourcing requires interdependence and collaboration between buyers and suppliers and as a result relational contracting.

Strong contracts are needed during initial stages to control uncertainty. However the

research showed that the governance in this project blocked adaptability and focused suppliers on instrumentally meeting contracted objectives and controlling losses. The contractual approach used was mismatched to the nature of the task, prevented collaboration, and adversely effected success (Sanderson, 2009).

**Proposition P3:** Power and conflict are systemic when demand is variable and emerges as buyers and suppliers conflict over resources and negotiate and claim value.

**Proposition P4:** Outsourcing and project contexts where power and conflict are systemic have poor outcomes.

Outsourcing is a site of conflict as parties have fundamentally different objectives. Power emerges naturally from practices of work as they interact and shape the implementation to line up with their own demands. However situations of high power have poor outcomes. The research also showed that power has aspects of duality, being both constraining and energising, and thus controls the ‘velocity of change’.

**Proposition P5:** Large changes in scope or the business requirements leads to poor outcomes and negatively impacts success.

The inconsistencies and contingencies in the real world broke the project assumptions but the problem was the actors could not adapt within the project constraints as collaboration was inhibited by politics and governance.

**Proposition P6:** Prior history and experience biases decision-making and can make managers seek future solutions in the past.

Prior commitments and enforced dependencies on an outsourcing can strongly influence success and set in motion a direction that is difficult to change. Legacy relationships can lead to poor innovation practices and can lead to buyers and suppliers wallowing in their own ignorance (Goerzen, 2007, Poppo et al., 2008a).

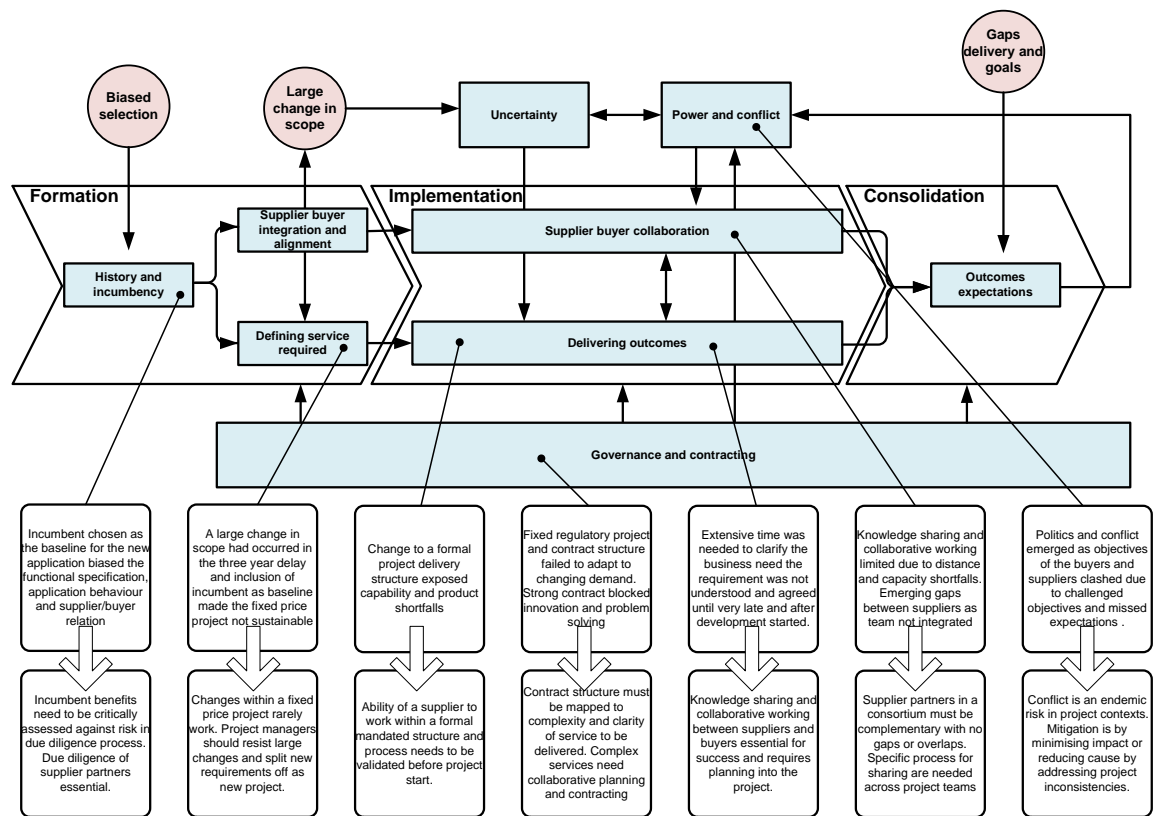
**Proposition P7:** The degree of change possible, and how close the implementation reaches end contracted goals, is heavily dependent on context.

The actual degree of change in outsourcing is largely constrained by what is possible within the available resources and capabilities. The difference between the outcomes achieved in this project and the contractual goals may have been a consequence of micro factors of implementation, adding up to major gaps and as a result change was emergent and not wholly predicable.

### 8.6.2 Practical challenges in implementing outsourcing

The research threw up several practical challenges in managing outsourcing. The most significant of these was in the influence of internal processes and power. There are no simple scaling matrices that can be derived to inform implementation planning of outsourcing, just basic checkpoints to mediate the archetypical problems that occurred within this case. These factors are illustrated in **Figure 8-2** and in summary are:

- Power and conflict emerge from the practical consequences of failing to meet objectives and from threats to commercial viability. Differences in objectives must be tackled at the source of the uncertainty or actively managed as a project risk.
- Collaboration is not automatic and must be planned for using specific processes that must be commercially included within the project plan. Close working relations between buyers and suppliers for service creation is needed as an outsourcing service is always jointly created.
- Consortium based alliances must be subject to a thorough due diligence based on the partner capabilities for the current contract (not just the past performance). It needs to be evaluated whether the management of critical sub-suppliers, such as PersonSoft, should be solely controlled by prime-contractors without proper structured oversight for buyers.

**Figure 8-2 - The outsourcing lifecycle and practitioner issues**

Source: Author

### 8.6.3 Summary

The fundamental reason why outsourcing change is so difficult is that just as in complex IT systems the embedded processes are the 'ossified institutionalised' view of the practices, relationships and routines that are the substance of the institution (Lyytinen et al., 2009). When outsourcing part of the organisation to a third party it is separated then subsumed into the other organisation that then provides the service. These two organisations are now collectively responsible for service and must adapt internal routines/control to coherently structure and manage delivery. However, institutionalised processes have high inertia and are resilient, difficult to break down and erode, especially within the time constraints of a contract. From this standpoint, outsourcing is a complex change, and the new entity formed only gradually becomes a coherent institution capable of delivering the outsourcing goals.

## Chapter 9 – Conclusion

### 9.1 Introduction

**Chapter 9  
Conclusion**

Outsourcing is a complex change, and takes time to become a coherent institution and capable of delivering the outsourcing goals

The HRMSys outsourcing delivered only an upgrade of the existing application along with a limited set of new requirements. Interfacing, integration within the DefOrg architecture, self-service functionality, and most of the workflow requirements were obsoleted or put off until the next stage. IOC implementation was scheduled for ten months but actually took nineteen months and cost overruns were more than 100% for all parties and added up to a million pound loss for PersonSoft. A situation that is unfortunately typical for the IT industry (ICPMTF, 2011, Jones, 2006, The Standish Group, 1995, Yeo, 2002). The research explored the micro-practices of implementation and aimed to explain why, despite the availability of high quality consultants and managers, supported by strong technical processes and complex contracts, outsourcing outcomes can be so variable. At the level of the *'iron three'* project objectives of cost, quality and time, this outsourcing failed (Cicmil and Hodgson, 2006). The research showed that the transition occurring during this outsourcing was influenced by three main factors; the imprinting of current practice by prior history, the negotiated nature of contractual work and the natural emergence of power and conflict from everyday work that controlled momentum (Wiebe et al., 2010). The research also demonstrated the relative impotence of formal control and dominance in periods of stress and showed how solutions can arise from improvised practice outside of technology or formal constraints (Orlikowski, 1996). The research also suggested that the deviations between planned and actual outcomes come from contingencies, and contextual changes, that could not have been fully anticipated and as a consequence the end outcome was emergent (Mintzberg and Waters, 1985).

## 9.2 Research questions

The discussion (**Chapter 9**) covered the linking of the research questions to the findings and literature; to summarise:

**RQ1: In what ways do antecedents and a prior history impact and constrain the implementation processes of outsourcing?**

Prior history imprinted the implementation; it shaped how the new application was to be created and interpreted, it projected existing practices and processes into the future, and maintained and reinforced prior knowledge.

**RQ2: In what ways does strong control and governance impact the development practices and how they evolve during the implementation?**

Practices evolved over time as a negotiated order and may have been sub-optimal as they were constrained by contractual demands and the conflicting objectives of the buyers and suppliers. Practices are the outcome of negotiating within a contested field and are adopted, changed, and discarded, based on their relative salience to the task at hand.

**RQ3: How do power and conflict arise during the implementation of outsourcing?**

The source of power and conflict is in the everyday action of actors engaged in purposeful work and is an embedded attribute of practice based-change. It arises as collaborative partners attempt to shape and control the project to deliver their own individual and organisational objectives.

**RQ3.1: How do power and conflict impact work practices?**

Power and conflict can impact decision making by constraining and slowing down responses to contingencies whilst internal inconsistencies are resolved. It also has a dual aspect; enabling in providing energy for change to overcome obstacles, and restraining when seen as power enforcing compliance to redundant processes.

**RQ4: In what ways is the nature of situated change emergent and constrained in an outsourcing project?**

Change is delivered by purposive work as actors strive to complete project deliverables. Actors innovate and improvise to overcome obstacles and change within

HRMSys resembled a superposition of punctuated and practice-based change.

### 9.3 Academic contributions

The main academic contributions are:

#### Conceptual/Theoretical

- Adding to the neo-institutional and power/conflict literature by demonstrating that conflict and the use of power is endemic in a contracted work situation and arises from conflicting goals and objectives made visible in the process of work amongst competing coalitions as they perform in real work situations.
- Showing how strong contractual rules in an outsourcing force an instrumental focus on vendors, reduces their flexibility, and supports the notion that preventative contracts inhibit innovation and adaption to uncertainty.
- The research extended and empirically defined the components of institutional politics showing how power takes on different aspects as it cascades through the implementation processes.
- Demonstrating how purposive actors interact in a recursive way with established technical standards and rules supporting the idea that technology, standards and rules are enacted in use. The observations extended this by showing enactment was carried by the process of negotiation and compromise.
- Adding to the literature of change showing the constrained context of outsourcing. This is a process of change delimited by a contractual fixed term, and positions outsourcing as a forced change within a fixed time scale. This observation also supported the alliance literature on short term engagements with a fixed goal that showed the development of relational contracting and collaboration is severely constrained in the short time of contracts.
- Showing the impact of the forced nature of change in outsourcing and how difficult it is to change well-established practices within organisations. The latency and inertia of institutionalised practices can result in re-emergence, or regression, if change and ‘sedimentation’ are incomplete.
- The research extended and empirically defined the antecedent triggers for de-institutionalisation. Changes in context and contingencies can initiate de-

institutionalisation of old practices but can constrain the introduction and institutionalisation of new routines and processes.

### **Methodological**

- Demonstrating the integration of documentary evidence and participant interviews along with actual email and forum traffic to construct an entire narrative timeline for the IOC phase within which to place respondents' data. The email and documentary traffic was thematically analysed alongside the emails to provide a source of rich primary data.
- In terms of data collected, it was a longitudinal participative process that examined the actual processes of work in medias res. There are very few actual process longitudinal studies that trace the action as it happened.

The research extended our understanding of institutional processes within the inter-organisational context. There was weak support for organisational development and technological determinist perspectives on change, possibly resulting from the conflicted nature of the specific context. The research provided some evidence for punctuated equilibrium at a broader scale of analysis and showed how improvised change can emerge from the real practices of work. The research also demonstrated that outsourcing can be regarded in some aspects as a negotiated order where forceful actors within different organisations strive to shape outcomes more in line with their own organisational and personal objectives.

### **9.4 Implications for practice**

- Contractual approaches with short time periods permit only an instrumental focus. Vendors must focus on commercial viability of the contract in such circumstances and their flexibility will be very limited. Collaboration and flexibility only occur when there is time and when experience in the outsourcing has been achieved.
- Contractual power is actually limited and can be swamped when major changes occur in scope or business context. Strong contracts work best for simple or well defined outsourcing projects. Contracts should be more contingently

constructed to account for known (and fixed) requirements separating out those requirements where there is more uncertainty and flexibility is needed.

- Most practitioner and academic prescriptions are on the decision and scope; there needs to be a focus on the client side on the structuring and implementation issues of outsourcing – how the outsource service fits within the organisational structure of both organisations.
- Complex outsourcing is a collaborative process and needs careful planning. Outsourcers cannot pass over to suppliers the provision of the service in its entirety except for very simple straightforward services such as facilities management.

Furthermore, there is a need to understand exactly what is meant by success and failure as in many changes, such as outsourcing, the outcome is sometimes partial and emergent over time. The outsourcing literature shows that most outsourcing contracts will not deliver the assumed benefits in full and this may in part be due to the long time it actually takes to fully implement and embed an outsourcing service.

## 9.5 Limitations

This research explored the intergroup dynamics of six case organisations working together to deliver a large scale HRM system in the idiosyncratic location of a defence organisation in Europe. HRMSys is an extreme case and DefOrg a complex public sector organisation subject to turbulence and tight political control and scrutiny. The goal of the research was analytic generalisability (Yin, 2003), with the assumption that DefOrg showed similar institutional dynamics to other major public sector organisations, such as the NHS in the UK, undergoing large-scale implementations of IT (see Currie, 2012). The particular transformations and transitions identified were grounded in the specifics of the context and cannot be generalised outside the specific context of HRMSys. However, the longitudinal change processes, and aspects of situated practice and power dynamics, are in principle transferable to other contexts (Eisenhardt, 1989b, Orlikowski, 1996).

Although some short interviews and group data were collected during the implementation, all interviews and documentation data record events from an historical retrospective perspective, and will be subject to presentation and recall bias

(Barley, 1986). To overcome this, access to a shared repository of project emails/documents was granted, and all email data for the implementation was downloaded, cleaned and coded across time, respondents, and organisations. From this data the entire event narrative of the HRMSys project IOC phase was reconstructed, from contract signing, to acceptance of the final deliverable. This materially added to the data gathered in situ, including participant observations, and enabled respondent recall to be directly compared and contrasted to the real-time narrative. Furthermore, the main analytical steps, using a grounded theory approach, were executed following system acceptance and project closure to remove bias and 'the threats to action research' (Kock, 2004). Realising the researchers' own recall and interpretation could be influenced by the researcher's theoretical interpretation and biases an additional round of semi-structured interviews were conducted during 2015, with key project participants, to discuss and validate the main themes and critical points the analysis uncovered (Kock, 2004).

## 9.6 Future research

To confirm the observed elements of practice-based change, an extension of the research into similar implementation contexts where groups of actors are purposively working together to reach a set goal is proposed. In particular, in project management contexts, there are high degrees of failure and 'chaos' still reported despite an ever-burgeoning use of more extensive and complex planning techniques (Jones, 2006, Yeo, 2002). This has even led some researchers to criticise this practice for using inappropriate and poorly grounded techniques that have limited scientific justification (Dietz, 2011). The notion emerging from this research is that a limiting factor in achieving outsourcing success, and by extension project management, is to be found in the implementation practices, and not in the rigour of the technical processes. Poor techniques can contribute to failures but issues in inter-organisational work are likely to be more contingent, socially or practice bound, and amenable to process-based research (Boudreau and Robey, 2005, Jaspersen et al., 2002).

A constraint in this research was the theoretical lens chosen, institutional theory, structuration and power, and the application of these within the short timescale of the initial operating capability phase at HRMSys. Because this was a

participant practice-based observation the much longer term institutionalisation factors, such as embedding, were not observed or recorded. Returning to the research subject for the FOC stage, and extending the observations, to assess particularly the degree of sedimentation of new structures and processes, would lend more weight to observations on the impact of history and the nature of change. Punctuated equilibrium in institutional theory is predicated on the notion of change impacting all aspects of the organisational routines and becoming normalised practice (Greenwood and Hinings, 1996, Wiebe et al., 2010). If this is not the case, sedimentation may be incomplete, and erosion and regression to the former institutional practices may be observed, and this would yield a better understanding of the actual change process itself.

## 9.7 Conclusion

The value of an institutional power and a situated practice perspective is that it moves the research agenda away from an overly rationalist and determinist view of how outsourcing actually works. Change operates at several levels but within a constrained outsourcing context operates as a process of incremental change with occasional radical action when severe problems occur. Within this context purposeful actors *‘intelligently attentive to their environments’* meet problems and contingencies and a lack of knowledge as best they can (March, 1981: 564). Within a multi-supplier and client context, with many competing interests, the outcome of outsourcing is often decided by negotiation and bargaining and is as a result a negotiated order.

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## Appendix A – Example NON-DISCLOSURE AGREEMENT (NDA)

**PARTIES:**

Researcher: Royston Edward Morgan ('Researcher')

Address:

Company: ('Company')

Address:

DATE: ('Effective Date')

In consideration of the mutual covenants set out in this Agreement and for other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged by each of the Parties), the Parties agree as follows:

**DEFINITION OF CONFIDENTIAL INFORMATION**

Confidential Information means any information disclosed by one party (the 'Discloser') to the other (the 'Recipient') relating directly or indirectly to Outsourcing Practice at Company which is identified by the Discloser, either orally or in writing, as confidential, either at the time of disclosure or, if disclosed orally, confirmed in writing within thirty (30) days following the original disclosure.

**EXCEPTIONS TO CONFIDENTIAL INFORMATION**

This Agreement does not apply to information that:

- i. was available to the public at the time of disclosure, or subsequently became available to the public without fault of Recipient;
- ii. was known to Recipient at the time of disclosure or was independently developed by Recipient, provided there is adequate documentation to confirm such prior knowledge or independent development;
- iii. was received by Recipient from a third party and Recipient was not aware that the third party had a duty of confidentiality to Discloser in respect of the information;
- iv. is used or disclosed by Recipient with Discloser's prior written approval; or
- v. is required to be disclosed by law, provided that Recipient gives Discloser sufficient prior written notice of any such disclosure to allow Discloser to contest the disclosure. Any action taken by Discloser to contest the

disclosure must not compromise the obligations of Recipient under the order to disclose or cause Recipient to be subject to any fine, penalty or prosecution.

#### **USE OF CONFIDENTIAL INFORMATION**

Recipient may only use the Confidential Information for the purposes of; advice to Company on outsource best practice, for Academic Research into Outsourcing, and the publication of such research into peer reviewed academic journals (any publication must be suitably anonymised and under no circumstances can Company's name be used without clearance). Recipient must not use the Confidential Information for any other purpose without the prior written approval of Discloser.

#### **NON-DISCLOSURE**

Recipient must keep the Confidential Information in confidence. Recipient may only disclose the Confidential Information to other academics or research supervisors who have a need-to-know the Confidential Information for the Permitted Purpose, provided that they are advised of the confidential nature of the Confidential Information and are under an obligation to maintain its confidentiality. Recipient must not otherwise disclose Confidential Information to any person or third party without the prior written approval of Discloser, except when such disclosure is compelled pursuant to legal, judicial, or administrative proceeding, or otherwise required by law.

#### **STANDARD OF CARE**

Recipient must use at least the same standard of care in protecting the confidentiality of the Confidential Information as it uses in protecting its own information of a similar nature and, in any event, no less than a reasonable standard of care. Recipient must notify Discloser promptly upon discovery that any Confidential Information has been accessed or otherwise acquired by or disclosed to an unauthorized person.

#### **RETURN OF CONFIDENTIAL INFORMATION**

If requested in writing by Discloser, Recipient must return to Discloser and/or destroy all Confidential Information and any copies of Confidential Information in its possession or control. Recipient may retain one archival copy of such Confidential Information for the sole purpose of establishing the extent of the disclosure of such Confidential Information, provided that such information is not used by Recipient for any other purpose and is subject to the confidentiality requirements set out in this

Agreement.

#### **NO LICENCE OR OTHER RIGHTS**

All Confidential Information remains the property of Discloser and no licence or any other rights to the Confidential Information is granted to Recipient under this Agreement. This Agreement does not obligate the Discloser to make any disclosure of Confidential Information to the Recipient or require the parties to enter into any business relationship or further agreement.

#### **LIMITED WARRANTY & LIABILITY**

Discloser warrants that it has the right to disclose the Confidential Information to Recipient. Discloser makes no other warranties in respect of the Confidential Information and provides all information 'AS IS' without any express or implied warranty of any kind, including any warranty as to merchantability, fitness for a particular purpose, accuracy, completeness or violation of third party intellectual property rights. Neither party will be liable for any special, incidental nor consequential damages of any kind whatsoever resulting from the disclosure, use or receipt of the Confidential Information.

#### **TERM**

This Agreement and Recipient's obligation to keep Confidential Information confidential expires five (5) years from the date that the confidential information is received unless otherwise extended by mutual agreement.

#### **GENERAL PROVISIONS**

- i. Remedies - Recipient agrees that damages may not be an adequate remedy for any breach or threatened breach of the Recipient's obligations under this Agreement. Accordingly, in addition to any and all other available remedies, Discloser will be entitled to seek a temporary or permanent injunction or any other form of equitable relief to enforce the obligations contained in this Agreement.
- ii. 'No waiver' – Failure of a party to enforce its rights on one occasion will not result in a waiver of those rights on any other occasion.
- iii. Assignment - Neither party may assign any of its rights or obligations under this Agreement without the prior written consent of the other party.

- iv. Regulatory compliance – Each party must comply with all applicable laws, regulations and rules in its jurisdiction, including but not limited to those relating to the export of information and data.
- v. Entire Agreement – This Agreement represents the entire agreement between the parties with regard to the Confidential Information and supersedes any previous understandings, commitments or agreements, whether written or oral. No amendment or modification of this Agreement will be effective unless made in writing and signed by authorized representatives of both parties.
- vi. Severability – If any provision of this Agreement is wholly or partially unenforceable for any reason, all other provisions will continue in full force and effect.
- vii. Binding Effect - This Agreement is binding upon and will ensure to the benefits of the parties and their respective successors and permitted assigns.
- viii. Governing Law - This Agreement will be governed and construed in accordance with the laws of England and Wales.

The parties have duly executed this agreement by their duly authorized representatives as of the Effective Date.

## Appendix B - Full Research Consent Form <sup>12</sup>

Thank you for agreeing to participate in this research project. The purpose of the interview is to explore client supplier relations and to **gain an understanding of your view**, there are no correct answers and your own experience is being sought. Please feel free to say if you do not know the answer to certain questions, particularly in factual areas often the details are unknown or forgotten. Telephone interviews are likely to take around an hour, face to face often approximately one to two hours.

### Project Context

The research focuses on how clients and suppliers engage together to deliver a successful outsource. The attention is on the actual work processes and practices of outsourcing, aims to identify best and problematic practice, and from this derive practical guidelines for clients and vendors. Academically the research addresses power and conflict in inter-organisational relations.

Please note the following conditions:

- All information from this study will be treated as strictly **confidential**, and will be **anonymous**. All records will be marked with numbers rather than names and any recorded dialogue will be deleted after transcription.
- All information concerning interviews will be kept in a safe place, with access limited to the researcher and used solely for the purposes defined by the project.
- Any reports for your organisation (*or any research funder*) will offer recommendations but will not disclose names, individual details or comments that could lead to the identification of respondents.
- Any academic or practitioner publications arising from this study will use a pseudonym for your company and for participants. All wording will be carefully checked to ensure that none of the parties can be recognised directly or indirectly.
- Because it is difficult to keep up with note taking of free-flowing speech the interview will be recorded. If you do not wish to be recorded please say so.

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<sup>12</sup> Usually sent out prior to interview or group discussion and read out at start of the discussion.

- If you agree to be recorded if you wish to speak 'off the record' at any time I will stop the recording. For telephone interviews just say 'this is off the record' or something clearly expressing your desire to stop recording and I will switch off the recorder.
- You have the right to withdraw from the interview at any time or refuse to answer any question without prejudice to yourself.
- If any aspect of the research or the questioning is unclear, or if you require any further information, please ask. Should you change your mind about participating in the research, you can contact the researcher at any stage, and your data will be removed from the project and all files deleted and destroyed.

I have read and understood the ethical considerations outlined above.

Signed..... Dated.....

Thank you very much for your participation.

If you have any questions related to the project please contact:

Royston E. Morgan

Dragons Farm,

Heron's Lea,

New Domewood,

Copthorne,

West Sussex

RH10 3HE

Mob: +44(0) 7764154340

Email: [r.e.c.morgan@sussex.ac.uk](mailto:r.e.c.morgan@sussex.ac.uk)

## Appendix C - Ethical Review: Certificate of Approval

Figure C-1 Ethical Review approval certificate



University of Sussex

Certificate of Approval	
<b>Reference Number:</b>	ER/REM25/1
<b>Title Of Project:</b>	Patterns of Cooperation and Conflict in IT Outsourcing
<b>Principal Investigator (PI):</b>	Royston Morgan
<b>Student:</b>	Royston Morgan
<b>Collaborators:</b>	Dr Des Doran (Supervisor)
<b>Duration Of Approval:</b>	n/a
<b>Expected Start Date:</b>	10-Jul-2014
<b>Date Of Approval:</b>	03-Jul-2014
<b>Approval Expiry Date:</b>	10-Jul-2015
<b>Approved By:</b>	Jayne Paulin
<b>Name of Authorised Signatory:</b>	Stephen Shute
<b>Date:</b>	08-Jul-2014

\*NB. If the actual project start date is delayed beyond 12 months of the expected start date, this Certificate of Approval will lapse and the project will need to be reviewed again to take account of changed circumstances such as legislation, sponsor requirements and University procedures.

**Please note and follow the requirements for approved submissions:**

Amendments to protocol

- \* Any changes or amendments to approved protocols must be submitted to the C-REC for authorisation prior to implementation.

Feedback regarding the status and conduct of approved projects

- \* Any incidents with ethical implications that occur during the implementation of the project must be reported immediately to the Chair of the C-REC.

Feedback regarding any adverse and unexpected events

- \* Any adverse (undesirable and unintended) and unexpected events that occur during the implementation of the project must be reported to the Chair of the Social Sciences C-REC. In the event of a serious adverse event, research must be stopped immediately and the Chair alerted within 24 hours of the occurrence.

## Appendix D - Full interview protocol

### Interview protocol – Complex change in outsourcing

**Note:** This script was only needed at the very beginning of the project when the researcher was gaining initial orientation to the activity.

### Scripting the Interview

Approach is to gain a rich description of the formal and informal processes that occurred during the outsourcing start-up and implementation. Respondents will be asked mainly to describe their experience of the contractual, negotiation, start-up and transition into the service. Questions probe what occurred and in what way the parties responded to that part of the process (their style of negotiation for example). The aim is to define both the importance of the outcome (the contract created say) as well as how the relationship of exchanges framed the outcome.

### The vendor selection for this contract

- Can you describe how the outsource vendor was selected?
- What were the important things you considered when selecting a vendor?
- Can you outline how business choices like outsourcing are made in your organisation?
  - Did you create a formal business case for example?
  - Did you carry out a due diligence formally?

How are contracts managed in your organisation?

- Is there a formal process?
- Who is involved in that process?
- Are you a formal organisation and rely on processes and procedure?

### The initial conditions and the relationship at the beginning of the project

Can you describe the negotiation and contracting process?

- How formal or informal were the discussions?
- The contract and agreement is it too tight or too lax?
  - Is a service level agreement in place?
- How would you say the relationship developed between the parties during the contracting phase?

- How were communications between the organisations at that time?
- Did you get all you asked for or needed during the contracting?
- Looking back do you think you missed anything during the negotiations?

### **Development of the working processes**

Thinking back to the start-up can you describe the start-up and implementation?

- How was the change management addressed?
- Were there any issues with resistance seen?
- How were problems and issues in the service managed?
  - What went well during the start-up?
- How were communications managed during the change over?
  - Did your supplier need or ask for your help?
- How would you describe the working relationship?
  - Were there any times where this could have been improved?

### **Flexibility and change**

- How was the service level managed during the delivery?
  - How were the service levels perceived during the delivery?
    - Did you have to discuss any shortfalls?
- Were problems and issues addressed promptly?
  - Were there any issues that were not addressed promptly?
- Did you need changes to the service during operation?
  - Was the supplier willing to accommodate changes to the service?
  - How flexible was your supplier in accommodating changes to the service?
  - Can you describe the process of changing service elements?
- Thinking about the service delivery were your expectations met?
  - How do/did you evaluate the performance of the service?
  - How do/did you evaluate the communications and relationship?

## Appendix E – Post IOC HRMSys interview plan

### Introduction and purpose

For all of the interviews conducted (inclusive email or by phone) the project will be repositioned and the purpose of the interview, and how it fits with previous interviews and meetings, will be outlined. All of the respondents for this part of the research are known or had previously been involved in the project – no introductions or introductory questions around role etc. will be necessary. The interview guide below was used to frame the discussion but was not used openly. The researcher remembered the order of the research questions and used probes as the need arose.

### Hygiene and Ethics

Notwithstanding earlier consent the ethical rules were briefly repeated especially around right to withdraw or stop the interview. For all post-IOC interviews permission was given to record the discussion. The recorder to be used was placed in front of the respondents (including group interviews) and the mechanism to pause the recorder was demonstrated. For Skype meetings, the respondent had to request a pause which the researcher applied.

### Question Protocol – approximate order (RQ's 2,3,4)

The focus is on events behaviours, what occurred and actions therefore avoid evaluation of blame placing.

- Thinking back on the implementation of HRMSys from your perspective:
- What do you consider the positive or beneficial outcomes/events that occurred as a result of the implementation?
- What do you consider the negative events that possibly led to a poor outcome during the implementation of HRMSys?
- What led to or caused this outcome (for each event)?
- When did, this event occur?
- Can you describe what happened and how this impacted your perspective on the project?
- What could have been done to avoid/promote this type of behaviour in the

future?

**Relations between the individuals/groups**

- What actions or behaviours in your view helped progress (or caused the event)?
- What actions or behaviours in your view hindered progress (or caused the event)?
- What aspects of working together were effective in delivering outcomes?
- What aspects of working together were blocking progress?
- How effective were your partners in delivering the outcomes?

**Supplement for the Group interviews (RQ's 1):**

For the three group interviews held with senior staff from HRMDept and PersonSoft the general questions were prefaced by a focused discussion on the antecedents of the HRMSys project especially the prior history between the organisations and the selection process for the outsourced activity.

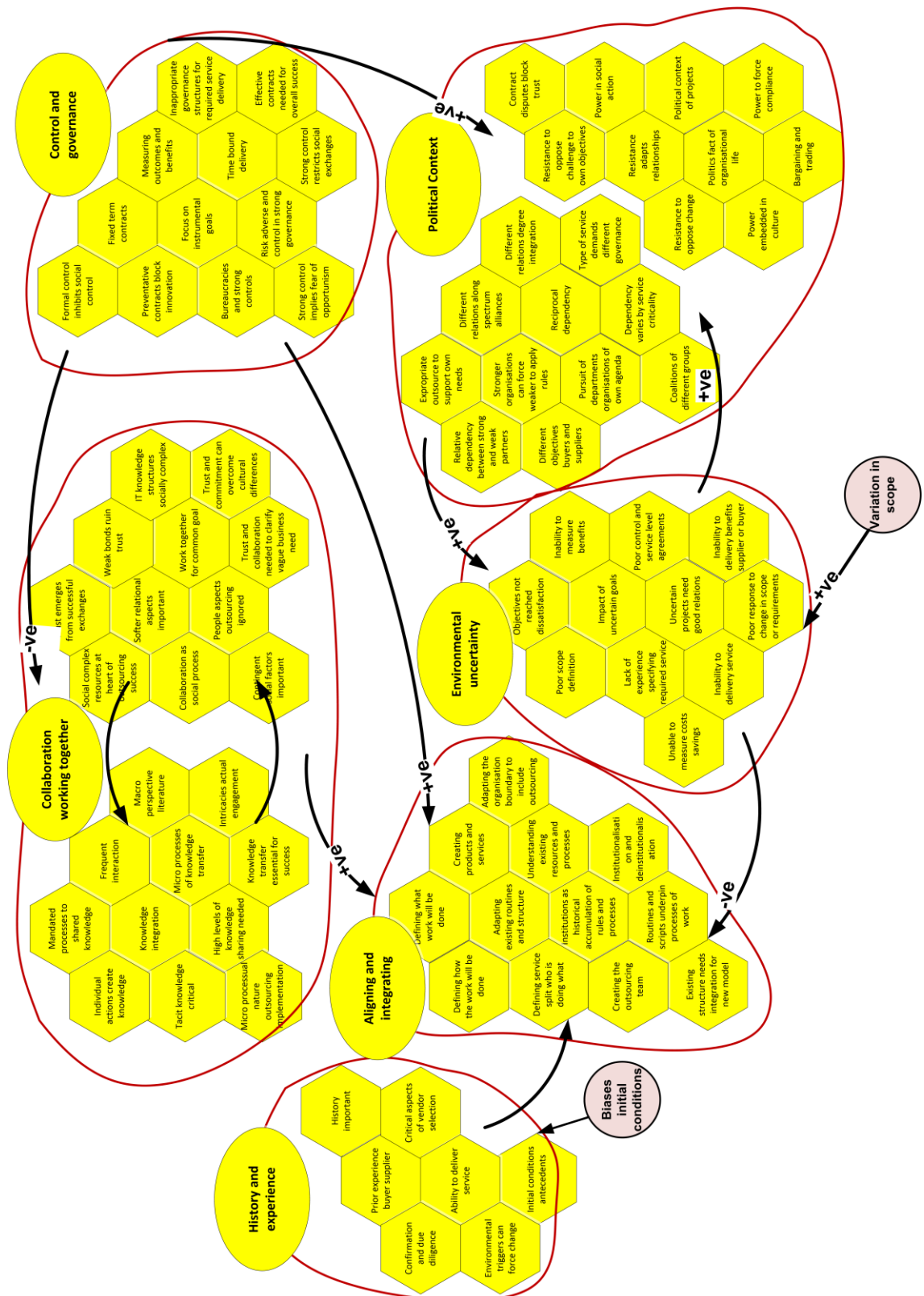
**For two email interviews, a shorter protocol was used**

- How from your perspective did the working relationship develop with the other members of the project especially PersonSoft?
- Were there any particular problems or difficulties you encountered in performing your task?
- Were there any critical points where things went well or went badly?

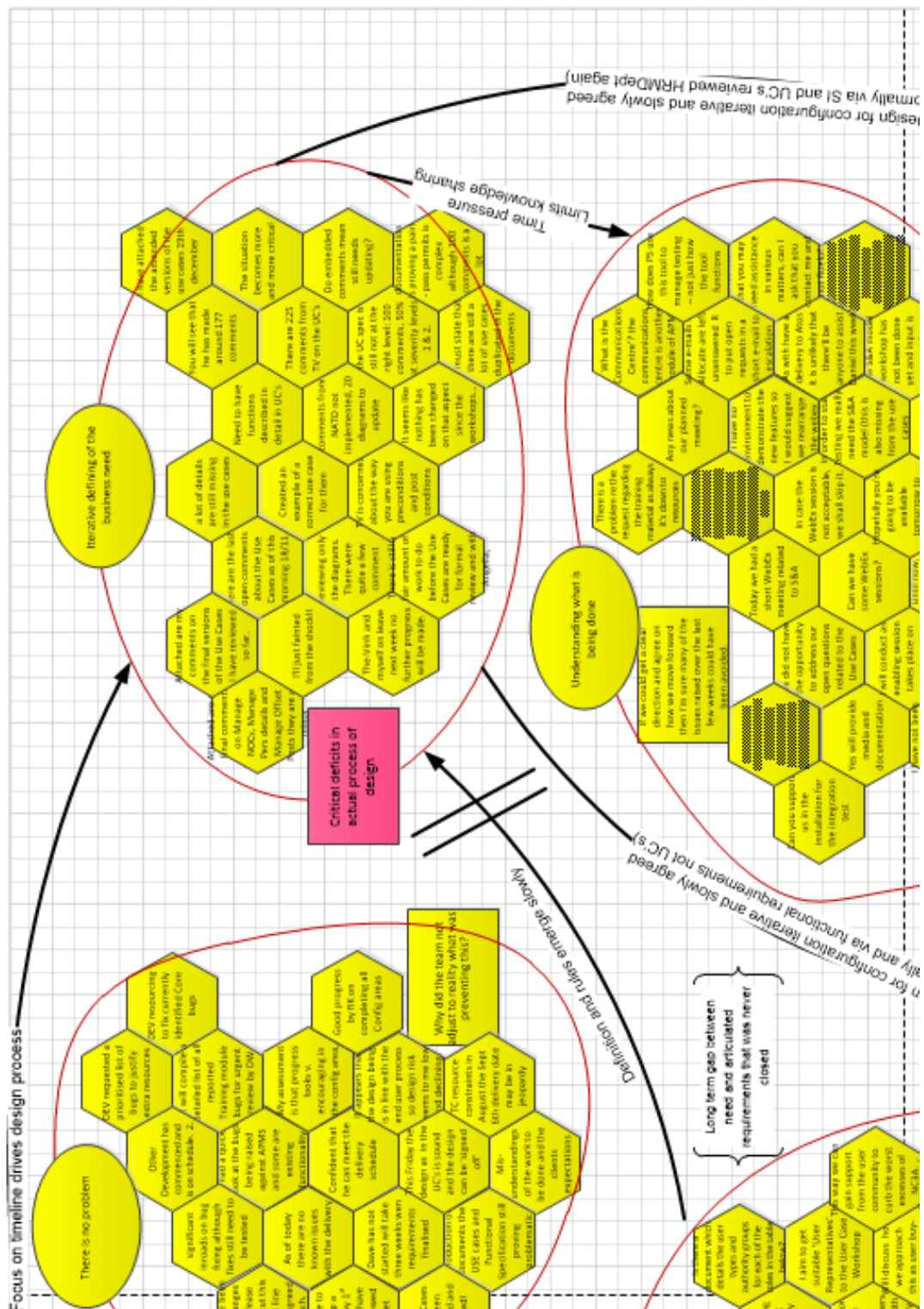
**Closure – broadly covering the following points**

Thank you for your input. I will over the next week transcribe the interview and then load this into the analysis tool I am using for the project. Loaded transcripts will be coded and anonymised. When this process is complete the original recordings are then deleted. If possible will you be able to check my understanding of any points or clarify issues if I email the summary of the transcript?

## Appendix F – Concept framework analysis

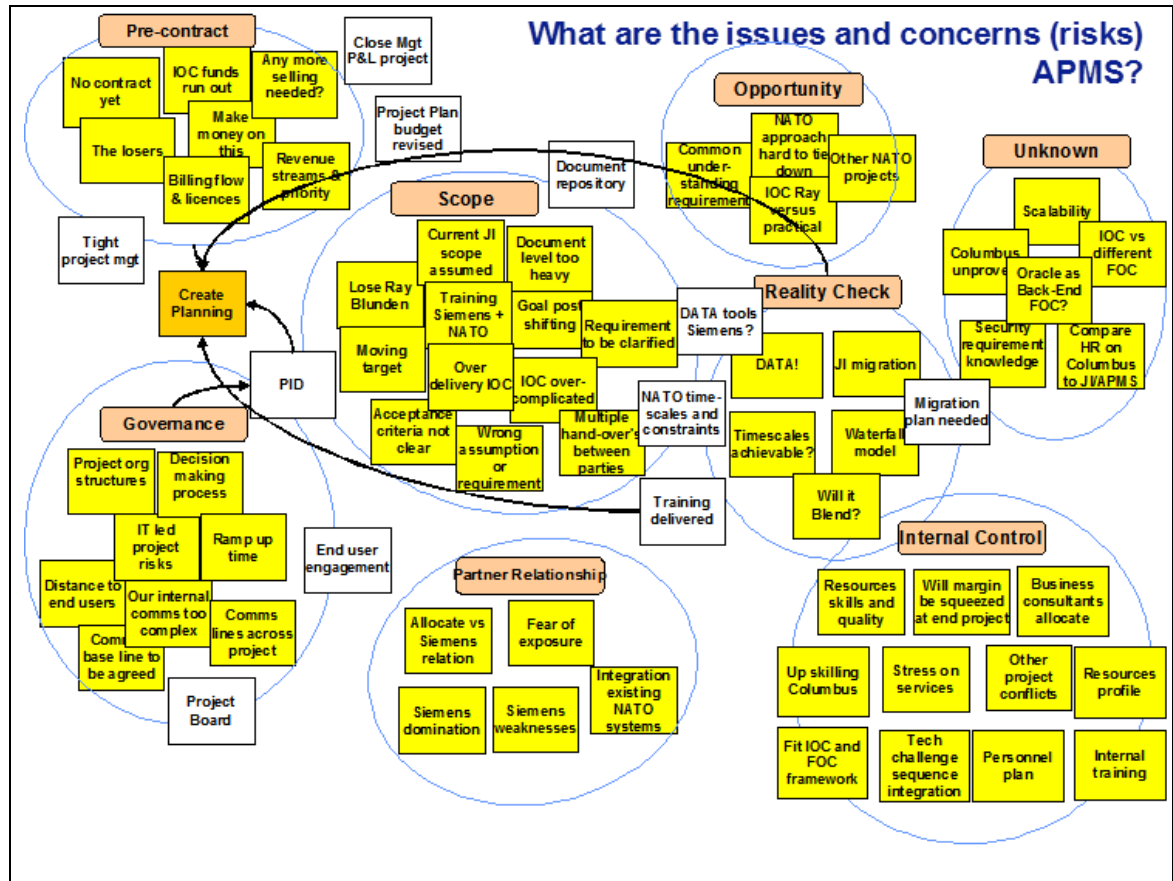


## Appendix G - Extract from Cluster Analysis



## Appendix H – Workshop Output PersonSoft

This extracted cluster picture was developed in a workshop on the start-up of the HRMSys project two years prior to the actual start in February 2011.



## Appendix I – Practice evolution over time

	Antecedents ARMS (from bid to start)	Requirements validation	Designing configuration	Test and acceptance	Post IOC and execution	Common themes	
Adapting plans and goals	Within the bid the assumption was for a COTS package whereas the history had been bespoke – bid response was compliant to a COTS approach.	Requirements validation assumed core COTS functions were already available. Buyer asked for existing functions costing to be freed up for new requirements.	Continuous adaptation to the plan and schedule as repeated delays occurred to validation and design process.	Continuous adaptation to the plans as repeated delays occurred due to test failure at FAT, SAT and UAT causing rework.	Sustainability of the waterfall approach questioned – agile for FOC positioned. Inability of supplier to maintain schedule consistency questioned.	Lack of stability in the planning. Plans were extended without questioning underlying causes of delays.	Adapting plans and goals
Controlling a change in requirement	Sustainability of the plan questioned at project start. Assumptions that submitting a compliant bid would 'get the door open' then suppliers work internally to engineer more time and money.	Limited time allowed for validation – emphasis on 'confirmation' of bid. New requirements introduced focus on maintaining timeline compliance not how to achieve.	Emerging complexity of design rules and development of business need emerged slowly. Efforts made to control how deep into detail was needed.	Buyer insisting on new requirements suddenly vital and still in development. Buyers stretching scope to include incumbent functions – suppliers resisting by calling for a change note.	Closure of IOC allowed only when additional requirements included at no cost. Requirements for FOC process for longer validated stated.	Fixed price and scope project with limited time for clarification especially for new business need. Poor requirements definition fuelled dispute over scope.	Controlling a change in requirement
Reconnaissance and making sense of the task	No allowance was made for different modes of working including partner models. Estimates were based on historical patterns of work. TestCo chosen on cost not capability.	Requests for detail on application behaviours and control documents. Limited documentation and information emerges as a problem for partner learning.	Gap between configuration process and testing procedures emerge. Lack of understanding of application driven by limited knowledge transfer.	Gaps in experience and knowledge of install outside of PersonSoft. Continuing poor knowledge transfer – inability of TestCo to provide support supplemented directly by PersonSoft.	Burden for lack understanding placed on TestCo for inability to acquire the needed expertise in the time available.	Limited access and availability of routine knowledge placed extra burden on PersonSoft to provide support that was not given due to time and resource constraints.	Reconnaissance and making sense of the task
Aligning processes and practices	Need to close gaps between partners understood as risk. Heavy documentation load flagged as a problem as was governance process - needed careful management. IOC perceived	Alignment of quality assurance processes between PersonSoft and TestCo. Arrangements for knowledge handover processes. Control of release of documents via	Process gaps emerging between developments and testing 'many unanswered questions.' Processes set down for managing UC inclusion within project. Issue closure in mantis realigned.	Demands for excessive training documentation unrealistic – placed at end of IOC phase. COTS waivers disputed and re-aligned. Use of bug tracking in Mantis strengthened.	A fractious relationship emerges between TestCo, SI and PersonSoft. Complaints that 'they seem to be rewarded' for the number of bugs found.	Alignment of processes between TestCo and PersonSoft difficult – difficulties in abandoning own processes and accepting project level demands.	Aligning processes and practices
Building working knowledge	No allowance made for an extended supply chain and the role PersonSoft had in supporting partners. Every point in that chain came back to PersonSoft as subject matter experts.	Gaining understanding of process aspects of new requirements – attention starts on addressing non-functional elements.	Moving away from explicit knowledge to understand how the application performs. TestCo moves slowly towards deep understanding system during implementation.	Detailed knowledge on security processes at an application level built during problem solving. Acceptance of problem solving needed for user developed functional areas.	Inter partner learning recognised as key – review processes and formal sign-off proposed as separate events.	Limited allowance for partner learning but learnt by doing to gain understanding – effective learning of PersonSoft during implementation testing of formal processes.	Building working knowledge
Capturing the business need	Requirements were 'very woolly' and a mixture of functions based on current application - capabilities without any idea of the underlying business process	Following an unsuccessful formal approach to defining business need and writing use cases a workshop approach was agreed.	Continuous refinement of the design documents driven by method errors and continuing evolving of the business ideas.	Continuing adaptation to the design Use Cases. Inclusion of support calls from incumbent and regression testing by users added to acceptance problems.	Broader user community access agreed for FOC and need to engage early with users on analysis. Move to COTS and away from bespoke recognised.	Design was unstable until quite late in the project. Level of detailed business knowledge was low within user project participants.	Capturing the business need

Continued...

	Antecedents ARMS (from bid to start)	Requirements validation	Designing configuration	Test and acceptance	Post IOC and execution	Common themes	
<b>Codifying and writing down business need</b>	Design method and documentation of the application was specified in the contract and was at variance with all earlier experience.	No experience in design approach demanded by the contract. No experience with approach on user/ supplier side. Hundreds of deficiencies identified in review.	Continuous errors in use case method and approach. Quality of functional documentation at PersonSoft low and in error – rework needed.	Limited time in formal plan for rework – gap between finalised design and configuration could not be closed. Design was being finalised by negotiation.	Nature of interpretation gap between requirements and design and what was actually delivered exposed.	No experience of formal methods emerged on supplier and buyer side – previous documentation insufficient and consisted often of screen shots.	<b>Codifying and writing down business need</b>
<b>Configuration and creation of software</b>	Configuration of software historically had been based on limited broad ideas interpreted by PersonSoft then refined jointly.	Configuration items for functional/ non-functional requirements were listed and contracted in the SOW attached to the contract – and was a constant reference.	Negative feedback from users on testing procedures and errors. Failures of install scripts and processes. Recovery plans demanded by SI.	Significant bugs and deficiencies emerged within core COTS software previously implemented in incumbent. Loss of confidence at HRMDDept.	Core MAPS seen as poor quality and root of configuration and testing issues. Repeated deliveries and repairs forced after supposed go-live of IOC.	Some blindness to emerging software quality issues. Some expectation that repairs could be done during a go-live 'on the fly'.	<b>Configuration and creation of software</b>
<b>Testing and accepting</b>	Testing processes had been embryonic at PersonSoft and consisted of functional testing without formal processes and was inadequate for HRMSys.	Creation of testing plans and transparent procedures for based on design use cases were specified in the contract. Discussion on whether COTS functions should be tested.	Agreement on a common tool for requirement tracking and bug reporting and resolution. First introduction of waivers to reduce scope of testing.	Continuous errors forced re-testing & identified many errors. Repairing just to problems emerges as practice at PersonSoft. UC emerges as test blocking.	Testing as problem – doubts over capabilities of TestCo. Attribution of blame.	Poor and inadequate testing at PersonSoft for years clashed with new context. Realignment of QA at PS forced by failures. Continuous cycles of testing/repairing.	<b>Testing and accepting</b>
<b>Controlling the engagement</b>	Historical dyad between PersonSoft and HRMDDept replaced by a consortium and extended communication chain.	Enforcement of project governance – releases via SI. Controlling meetings and access – face to face allowed but with caveats and control.	Requirements traceability matrix as core in controlling deliveries to contract. Developer tester role and interaction clarified.	Emphasis on control of engagement and meetings. Stricter control and enforcement of compliance as problems emerge. Cure plans enter vocabulary.	Perceived weak control of project processes and of delivery. Contract management not project management. Contractors left to fight it out.	At start strict compliance to meeting schedule and governance relaxed for design and reengineered as problems emerged during testing.	<b>Controlling the engagement</b>
<b>Planning and coordinating delivery</b>	Role of PersonSoft within governance as sub-contractor invisible and remote from buyer. Deliveries via SI after test by TestCo.	Focus on team alignment for meetings and regular milestone deliveries. Schedule of meetings and attendance enforced as mandatory.	Emphasis on reporting back accurately and via correct channels. Formal project control using minute's reports and schedule.	Use of reports by SI to monitor progress and report back but without involvement in issues. Alignment of testing to allow monitoring by supplier.	Flow of information and deliveries via long chain seen as communication problem.	Coordination and control of deliveries delegated back to subcontractors – indirect control. Output control on timeline – limited probing on problems.	<b>Planning and coordinating delivery</b>

## Appendix J – Power evolution over time

	Antecedents ARMS (from bid to start)	Requirements validation	Designing configuration	Test and acceptance	Post IOC and execution	Common Themes	
Enforcing and policing rules	Compliance to governance rules, timelines and functional need required as precondition of entry.	Enforcement of contracted requirement serials, docs and plans. Rigidity on change with micro focus on compliance.	Enforcement of design rules and delivery of design documentation. Rejection and continuous rework - micro focus on compliance.	Rejection and continuous rework with threats of discipline for delays. Good documentation of poor processes.	Continuous rework and testing to cure all bugs. Rejection and rework documentation.	Continuation of redundant processes, inability to change direction with focus on contractual and timeline compliance and not on causal factors of delay and problems.	Enforcing and policing rules
Controlling decisions	Favouring incumbent supplier by withholding information and facilitating required outcome. Suppliers disguising lack of compliance fielding non-compliance application.	Excluding parties from decision-making, restriction of access by formal project hierarchy. Controlling information and allowed discussion between parties.	Controlling decisions and processes congruent with own objectives and capabilities. Challenging authority and worth of supplier partners when adverse outcomes.	Influence by direct contact to achieve leniency and control. Offering favours and currencies to control decision-making. Forcing decision by giving and withholding consent.	Value and worth of parties questioned to eliminate or reassign from next stages. Governance and modes of working rebalanced in favour of incumbents.	Control of information and allowed topics, exclusion and poor information sharing, and using informal access to enable influence.	Controlling decisions
Controlling resources	Assuming continuity of current ways of working, underestimating scale of new task and assigning inadequate resources and capabilities.	Poor knowledge and resource sharing denying help and failure to enable knowledge transfer. Limited access allowed to subject matter experts.	Poor knowledge and resource sharing inadequate capacity, business knowledge and capabilities emerging.	Inadequate resources, gaps in capability and attempts to restrict technical authority by recourse to blame. Delays in sharing knowledge.	Poor or no knowledge transfer with fragmented team structure. Questioning of capability and competence of partners.	Disconnected, under resourced structure that was not ready for the task. Failure in coordination, withholding information and passive attention to resource planning.	Controlling resources
Conflict and blame	Assumption of COTS at bid versus history of bespoke development. Poor software and service history with outstanding problems. Latent conflict arising between goals and capabilities.	Conflict between ad hoc versus formal control. Change in financial scope and planning due to change in requirement resisted. Conflict over budgets and expenses.	Open conflict over resources and delays with threats of liquidated damages in background. Attribution of blame to partners.	Settling of old scores and revenge for failed past promises. Ambushes fracturing past history. Attribution of blame to partners for test failings.	Ganging up and blaming due to lack of engagement and failure to acquire knowledge - stepping back and avoidance. Application of liquidated damages.	Latent conflict at the heart of the project. Resources underestimated and short of capability. Mismatch niche supplier of bespoke software and requirement for a formal COTS solution.	Conflict and blame
Negotiating	History of informal negotiation with no formal service level agreement or contracting. System integrator submits low compliant bid to further own objectives.	Negotiating scale of the task attempting to match to capabilities. Negotiating away or delaying problem requirements. Minimising IOC to match current application capability.	Agreeing common tools and approaches. Getting close to business to shape the direction. Negotiating rules, limits and extent of knowledge transfer.	Negotiating waivers and the avoidance of testing. Controlling demands, questions with attempts to control scope and rigour of testing.	Negotiating inclusion of changes at no cost by withholding consent. Using ability to block acceptance to extract concessions from suppliers.	Containment of demands, closing gaps between deliveries and what is acceptable to the buyers. Inducements, promises and appeals to the past to enable acceptance.	Negotiating

**Continued...**

	Antecedents ARMS (from bid to start)	Requirements validation	Designing configuration	Test and acceptance	Post IOC and execution	Common Themes
Relational influence	Incumbent application and historical relationship favoured. Requirements used with incumbent application as reference shaping outcome in the project.	Socialisation to improve tighter linkage and exploit past relation. Parallel projects maintain tacit links and enabled backdoor influence. Direct meetings.	Direct working group to exploit relationship and shape requirement and development of design congruent with the incumbent.	Direct meetings to influence acceptance and overcome obstacles. Passive engagement of sponsor maintains conflictual relation during acceptance.	Prior relationship seen as double-edged sword. Stepping back of sponsor and passive engagement enabled hostile environment.	The old incumbent players use social relationships and relational influence to direct and control each other's' behaviour. Passive role of sponsor broke link with past.
Symbolic power	Myths of past about the source of the incumbent and the origin of the relationships. Changing roles in contract, the ownership of the client, the ownership of the contract.	Contractor as servant and buyer as master. Strong influence of formal project hierarchy - subordination of PersonSoft 'behind' 51. Symbolic status and legitimacy of the contract and statement of work.	Role of time and formal project planning overriding that of goals -liquidated damages as tool of discipline. Symbolic status and legitimacy of the contract and statement of work.	Nostalgia, hurt and damage as HRMDept move outside previous ways of working. Legitimacy of right of acceptance unquestioned - use of 'vital' as symbol of rejection and control.	Diminishing importance of prior relationship without sponsor restating the link to the past.	One way sanction and discipline from client to supplier - legitimacy of sanction. Self-discipline of liquidated damages.
Structural power	Lack of specific structural controls characteristic of collaborative ad hoc process.	Enactment of standard unchallengeable rules and regulations for the creation of artefacts shifts balance from PersonSoft to others by process of codification of knowledge.	Mandated design process rules open up development to scrutiny and review. Increased surveillance and control.	Strict application of rules and regulations for testing and documentation of artefacts. Controls and limits supplier's degree of freedom.	Some resistance but adoption and entrenchment of new institutional processes at PersonSoft. Especially around formality of development.	Move of application from informal departmental to formal system changes control structure. Inconsistent with PersonSoft's orientation and engenders resistance.

## Appendix K – Extract of classification sheet HRMSys Actors

APWS Actors	Initials Respondent	Age Range	Behaviour and Attitude	Gender	Organisation	Power-Influence	Primary Objective for Project	Project Role	Role of Organisation in Project
Robert Magill	AM	Unknown	Unclear	Male	PersonSoft	Low	Unclear	Tech Support	Software Developer
Robert Cole	AC	31 - 40 Years	Unclear	Male	PersonSoft	Low	Unclear	Tech Support	Software Developer
Robert Eltonson	AP	21 - 30 Years	Positive	Male	PersonSoft	Low	Just a Job	Consultant Analyst	Software Developer
Jameson, Frank	FA	51 - 60 Years	Ambivalent	Male	System Integrator	High	Financial objectives	Sales	System Integrator
Andrew Smith	ASAN	51 - 60 Years	Collaborative	Male	Agency	Medium	Timeline met	Project Management	Agency Contract Management
Andrew Smith	AS	21 - 30 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Consultant Analyst	Software Developer
Andrew Taylor	AT	31 - 40 Years	Positive	Male	HRMDept	Medium	Functional expectations	SME	User Organisation
Paul Eccles	AE	31 - 40 Years	Positive	Male	PersonSoft	Low	Just a Job	Consultant Analyst	Software Developer
Angela Rose	AR	31 - 40 Years	Positive	Female	PersonSoft	High	Client Satisfaction	Business Consultant	Software Developer
Paul de Boon	ADB	31 - 40 Years	Unclear	Female	TestCo	Low	Client Satisfaction	Tech Support	Test and Training Organisation
Bonnie Fletcher	BFLO	31 - 40 Years	Sometimes conflict	Male	Agency	High	Satisfies contract	Project Management	Agency Contract Management
Charles Munro	CM	31 - 40 Years	Disengaged or pa	Male	PersonSoft	Low	Not Applicable	Financial Control	Software Developer
Chris Farnham	CF	51 - 60 Years	Disengaged or pa	Male	PersonSoft	Low	Not Applicable	Financial Control	Software Developer
Caroline Clever	CC	31 - 40 Years	Unclear	Male	PersonSoft	Medium	Not Applicable	QA Test	Test and Training Organisation
Clive Jacks	CJ	51 - 60 Years	Disengaged or pa	Male	PersonSoft	Medium	Financial objectives	Sales	Software Developer
Esther de Boer	CC	31 - 40 Years	Unclear	Male	TestCo	Low	Unclear	Tech Support	Test and Training Organisation
Caroline Calin	CALIN	31 - 40 Years	Positive	Male	TestCo	High	Quality	QA Test	Test and Training Organisation
Daniel Mack	DM	31 - 40 Years	Unclear	Male	TestCo	Low	Not Applicable	QA Test	Test and Training Organisation
Daniel West	DW	31 - 40 Years	Ambivalent	Male	PersonSoft	Medium	Delivery software	Tech Consultant	Software Developer
David Miller	DM	31 - 40 Years	Ambivalent	Male	PersonSoft	Medium	Not Applicable	Development	Software Developer
Emma Williams	EW	21 - 30 Years	Unclear	Female	PersonSoft	Low	Not Applicable	Office Support	Software Developer
Pauline RUCORECCA	FPOD	31 - 40 Years	Hostile	Male	Agency	High	Control	Tech Support	Agency IS
Fabian Van	FN	Unknown	Unclear	Female	PersonSoft	Low	Financial objectives	Office Support	Software Developer
Gabriel Boyle	GR	51 - 60 Years	Positive	Male	PersonSoft	High	Financial objectives	Senior Manager Director	Software Developer
Gregory Standford-Ped	CG	31 - 40 Years	Unclear	Male	TestCo	Low	Unclear	QA Test	Test and Training Organisation
Henry Hogg	HH	31 - 40 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Service	Software Developer
Hugh Taylor	HT	51 - 60 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Sales	Software Developer
Jan Bishop	IB	51 - 60 Years	Ambivalent	Male	PersonSoft	Low	Satisfies contract	Senior Manager Director	Software Developer
Jan Bowler	JB	51 - 60 Years	Disengaged or pa	Male	PersonSoft	Low	Financial objectives	Senior Manager Director	Software Developer
Julian Goodridge	JG	31 - 40 Years	Positive	Male	PersonSoft	Low	Not Applicable	Consultant Analyst	Software Developer
Julian Marshall	JM	31 - 40 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Consultant Analyst	Software Developer
Lue Clarke	LC	51 - 60 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Tech Consultant	Software Developer
Lois, John Daniel	DL	31 - 40 Years	Unclear	Male	TestCo	Low	Not Applicable	QA Test	Test and Training Organisation
Olivia Barnes	LB	31 - 40 Years	Unclear	Male	PersonSoft	Low	Not Applicable	Tech Consultant	Software Developer
Lucas Patrick	PL	51 - 60 Years	Positive	Male	System Integrator	High	Satisfies contract	Project Management	System Integrator
Lucas Daniel	DM	31 - 40 Years	Unclear	Male	TestCo	Low	Not Applicable	QA Test	Test and Training Organisation
Malcolm Robertson	MR	31 - 40 Years	Disengaged or pa	Female	PersonSoft	Low	Just a Job	QA Test	Software Developer
Matthew, Francois Xavier	FM	31 - 40 Years	Unclear	Male	TestCo	Low	Not Applicable	Tech Support	Test and Training Organisation
Matt Gurnson	MD	31 - 40 Years	Positive	Male	PersonSoft	Medium	Financial objectives	Project Management	Software Developer
Maya, Eric	EM	51 - 60 Years	Unclear	Male	System Integrator	High	Satisfies contract	Project Management	System Integrator
Mark Hale	MB	51 - 60 Years	Ambivalent	Male	HRMDept	High	Just a Job	Project Management	User Organisation
Markus, Paul-Sunthorn	PM	31 - 40 Years	Unclear	Male	TestCo	Low	Not Applicable	Tech Consultant	Test and Training Organisation
Neville Kotham	NK	21 - 30 Years	Unclear	Female	PersonSoft	Low	Not Applicable	QA Test	Software Developer

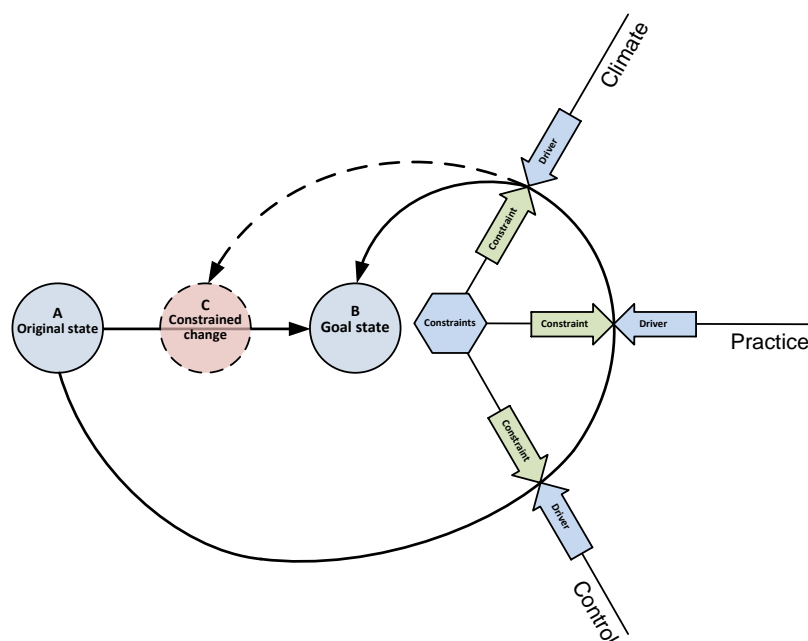
## Appendix L – Extract source document classification

Document Type Classification	Code Category	Context and Phase	Description	Document Category	Document of Control	Document Type and Form	Organisation	Project Role	Power Expressed or Incapacitated
Why are there so many meetings September as crossing point	DOC/Memo NVIVO	Analysis	Comment on number of meetings	Not Applicable	Not Applicable	Research Note	Sussex	Project Manager	Not Applicable
Pre-UAT Initialisation	DOC/Memo NVIVO	Analysis	Emerging problems in blindside during september 2011	Not Applicable	Not Applicable	Research Note	Sussex	Project Manager	Not Applicable
PCR 15 10052012 - Memo Eric re meeting outcome	DOC/Memo NVIVO	Analysis	Pre-UAT proposal to test UC	Not Applicable	Not Applicable	Research Note	Sussex	Project Manager	Not Applicable
PCR 15 10052012 - critical delay due to HRDS ambush	DOC/Memo NVIVO	Analysis	Notes on HRDS ambush	Not Applicable	Not Applicable	Research Note	Sussex	Project Manager	Not Applicable
Graham Royce Notes	DOC/Memo NVIVO	Analysis	Notes on GRDS ambush	Not Applicable	Not Applicable	Research Note	Sussex	Project Manager	Not Applicable
APMS UR Part 1	DOC/REQ - UR	RI RFP stage	User Requirements Document - part 1 operational concept	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
APMS UR Part 2	DOC/REQ - UR	RI RFP stage	User Requirements Document - part 2 technical architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
APMS UR Part 3D	DOC/REQ - UR	RI RFP stage	User Requirements Document - part 3D Technical Architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
CO-12318-APMS Part II/SOW v1.31	DOC/REQ - UR	RI RFP stage	Contract CLINS	Input Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
CO-12318-APMS SectionII,AmmeC-Basic,Contract_Line_Items,SOW_v1.03	REF: CONT	RI RFP stage	Contract CLINS	Input Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS UR Document No 1	DOC/Memo NVIVO	Analysis	Linked Memo to User Requirements	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
CO-12318-APMS Part II/SOW v1.31	DOC/Memo NVIVO	RI RFP stage	User Requirements Document - part 2 proces models	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
CO-12318-APMS SectionII,AmmeC-Option,Contract_Line_Items,SOW_v1.01	DOC/Memo NVIVO	RI RFP stage	User Requirements Document - part 3 Technical Architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
APMS User Requirement Document 2	DOC/Memo NVIVO	RI RFP stage	User Requirements Document - part 3C Technical Architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
APMS User Requirement Document 3B	DOC/Memo NVIVO	RI RFP stage	User Requirements Document - part 3C Technical Architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
APMS User Requirement Document 3C	DOC/Memo NVIVO	RI RFP stage	User Requirements Document - part 3C Technical Architecture	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
20090818-APMS/WorkshopIssuesv1p1	DOC/Memo NVIVO	RI RFP stage	Workshop at ALL to discuss APMS project contract win and key issues.	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
1-FB- CO-12318-APMS QA V1.0	DOC/Memo NVIVO	RI RFP stage	Workshop at ALL to discuss APMS project contract win and key issues.	Input Document	HRMDept to SI	Requirement	HRMDept	Project Manager	Not Applicable
1-FB- CO-12318-APMS Book L v1.16 and Annexes A, B, C	REF: CONT	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS SR3 Annexes A thru F	DOC/REQ - UR	RI RFP stage	SRS requirement serials listed	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
1-FB- CO-12318-APMS Book I Prospective Contract v1.7	REF: CONT	RI RFP stage	Contract terms and Conditions	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
1-FB- CO-12318-APMS Book v1.16 and Annexes A, B, C	DOC/Memo NVIVO	RI RFP stage	Contract terms and Conditions	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Alcance-Subcontract(20110121) v4 rev	DOC/Memo NVIVO	RI RFP stage	Contract terms and Conditions	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS SIS Allocate Contract	DOC/REQ - UR	RI RFP stage	Back to back contract includes cost estimate	Controlling	SI to Personsoft	Business Case	Agency	Contract Management Compliance	Not Applicable
CO-12318-APMS SectionII,AmmeB-Basic,Contract_Line_Items,SOW_v1.03	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
CO-12318-APMS SectionII,AmmeC-Option,Contract_Line_Items,SOW_v1.01	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
1-FB- CO-12318-APMS Book I Prospective Contract v1.7	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
National Project Plan Switch at start	DOC/Memo NVIVO	RI RFP stage	Prospective contract terms SOW	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Contractors responsible for the schedule deliverables	DOC/Memo NVIVO	RI RFP stage	National project plan	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
SSS V1.0	REF: CON	Initialisation	SSS split up	Controlling	SI to Personsoft	Requirement	System Integrato	Project Manager	Not Applicable
NATO/PMNSNationalProjectPlan	REF: CON	Initialisation	National project plan	Controlling	SI to Personsoft	Requirement	System Integrato	Project Manager	Not Applicable
Extensal/Resourses and Context(Nato Architectural Framework	REF: STAN	Design Requirer	Design Requirer INF document	Resource	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
DOC delivery review at Allocate	DOC/Memo NVIVO	Review	Workshop at ALL to discuss APMS project contract win and key issues.	Resource	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
List of Plans to be maintained(v1)	REF: CON	Design Requirer	Design Requirer List of Controlling Plans	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-IMPACT Analysis(v0.3)	DOC/DOC-IMPACT-20	Design Requirer	Design Requirer Impact Statement	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-IMPACT Analysis(v0.1, NATO Review v0.1	DOC/DOC-IMPACT-20	Design Requirer	Design Requirer Review document	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
20090818-APMS/WorkshopIssuesv1p1	DOC/LET-ALUTNASE	Design Requirer	Design Requirer Value Interim	Input Document	Personsoft to SI	Requirement	Personsoft	Senior Manager/Influence	Not Applicable
Test tender statement by Grahame	DOC/LET-ALUTNASE	Design Requirer	Design Requirer Value Interim	Input Document	Personsoft to SI	Requirement	Personsoft	Senior Manager/Influence	Not Applicable
Letter to Allocate 2011 12 09	DOC/LET-ALUTNASE	Design Requirer	Design Requirer Value Interim	Input Document	Personsoft to SI	Requirement	Personsoft	Senior Manager/Influence	Not Applicable
Letter2ALLDelays	DOC/LET-ALUTNASE	Design Requirer	Design Requirer Value Interim	Input Document	Personsoft to SI	Requirement	Personsoft	Senior Manager/Influence	Not Applicable
APMS 1.3 Sum TestRep	DOC/LET-ALUTNASE	Design Requirer	Design Requirer Value Interim	Input Document	Personsoft to SI	Requirement	Personsoft	Senior Manager/Influence	Not Applicable
Formal Acceptance UAT3 V1.1	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
20090720-JFCBs SMARTFOR apl	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS MARS Version Timeline1-06022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-Kick-Off-SDP0.1-15022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-Kick-Off-SDP0.1-15022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-Kick-Off-SDP0.1-15022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-Kick-Off-SDP0.1-15022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS PM-Kick-Off-SDP0.1-15022011	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Launch at Allocate announcement	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Letter to suppliers, 2012 Final	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
NATO APMS Planning1-05022009	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
2012 09 12 Libon User Group - Defence Suite Project Plan Review 0125092012	DOC/DOC-AG-300420	Test and Accept	Test and Accept UAT Acceptance	Output Document	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
OR NATO APMS FOC 2013 02 08 V14	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
CR NATO APMS FOC 2013 02 08 V16	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite APMS Roadmap - ATOS V02-08112011	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite APMS Roadmap - ATOS V02-08112011	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite COIS Strategy-06062012	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite COIS Strategy-06062012	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite COIS Strategy-06062012	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
Defence Suite COIS Strategy-06062012	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
NATO APMS FOC - Functional Releases15082012	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
NATO APMS FOC Preparation Workshop 2012 08 V13	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
NATO COMMAND STRUCTURE21102008	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
NOV-2 H1 LV Op Nodes Diagram-23102008	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
200806-APMSBThursday - 06062008	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
200806-APMSBThursday - 06062008	RES: INF	Post IOC	Post IOC	Resource	Not Applicable	Requirement	Resource	Contract Management Compliance	Not Applicable
2008 08 18 CO-12318-APMS Pre-Contract Award Eng Session1_v1.0	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS Architecture Summaryv2 - 26062008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS Compliance Summaryv2 - 26062008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
APMS FB Cover Letter v0.96	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Bid calendar - 21052008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Configuration Management Words - 21052008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Engineering Words - 03062008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
Engineering Words - 03062008	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable
1-FB- CO-12318-APMS 3rd Price Clarification (V1)	DOC/Memo NVIVO	RI RFP stage	Contract and Bidding Instructions definition of best value	Controlling	Agency to SI	Requirement	Agency	Contract Management Compliance	Not Applicable

## Appendix M – Process model of change

The process model of change is based on combining two early research approaches linking the influence of strategy on control and processes (Miles et al., 1978) and the influence of processes on climate (Lawler et al., 1974). This creates a chain of causality between the three dimensions and forms the basis of an argument that the three factors interact to constrain the change processes. It was in this way that it was used in the seminal work carried out in schools by (Miles and Huberman, 1994). The change to a goal state control from an initial position is illustrated in **Figure M-1** by the transition from position (A) to (B), where the focal organisation's original way of working is eroded and replaced by a new one, for example, by a stricter contracted regime. The transition from (A) to (B) is shown by the curved arrow moving via control, practice and climate change, and the path locus is shown as an outcome between drivers and constraints. The impact of a change driver, such as control, is constrained and mediated by factors such as resistance to the change, or by rational constraints, such as shortfalls in capacity. The influence of the constraining elements is to moderate the driver and in the concept model below this is shown as altering the overall transformation such that the degree of change is emergent and constrained and is shown as position (C) in the figure.

**Figure M-1 - Model of change transformation**



Source: Author