The Evolving Dynamics of Outsourcing: Control and Conflict a Vendors Perspective

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Abstract

This paper reports on unique longitudinal research conducted within a complex multi-vendor environment in the defence sector and describes the evolving relationship between the vendors and the defence client organization as they developed and implemented an outsourced HRM application development within Europe. The scale, technical complexity and multinational nature of the project drove the formation of a supplier consortium to deliver the project. The project was tracked over a period of four years and a contextualised process model was applied, focused on the design and configuration phase, to clarify complex social processes and to expose the key incidents that framed its evolution. The analysis demonstrated the critical nature of initial and antecedent conditions and how governance and strict contractual controls interacted to cause project failure. The study gives a unique insight into the vendor perspective in an outsourced context and shows how the interplay between bargaining and control led to the focal organization shifting between collaborative and compliant work processes.

Keywords: Outsourcing, collaboration, conflict, social exchange

Introduction

Outsourcing is a form of co-operative interfirm relationship where outsourcers transfer to a third party the management of part of its operation for an agreed fee (Willcocks and Kern, 1998, Dibbern et al., 2004). At its broadest level outsourcing can be seen as the contracting of any service or activity to a third party who manages the activity under the control of the outsourcing buyer (Langfield-Smith and Smith, 2003). 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 with the flow of resources one way from vendor to the outsourcer (Belcourt, 2006, Mayer and Teece, 2008). The fixed contract duration, where business partners are concentrated on time-bound delivery, focuses the collaboration on instrumental goals and restricts the development of diffuse social exchanges, trust and relationship building needed, when projects are more uncertain and tend to be more developmental in nature (Weber and Mayer, 2011).

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., 2005). Whilst generic or simple repetitive services, generally require standard market contracting, highly specific embedded services demand integrated governance and relational contracting (Williamson, 1985). 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).

In this paper we adopt a process perspective and examine the development of the Human Resource Management application through the lens of the sequence and temporal order of events that occurred during the project execution. The organisation was a corporate defence body in Europe, its defence Agency (Agency) and the main end-user department (UserCo) supported by an independent validation and verification (IV&V) consultancy from the Netherlands. The IT delivery for the application was contracted to a major European IT system integrator (SI) that sub-contracted 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. We will argue that constrictive governance and a focus on compliance throughout the project inhibited understanding of requirements, prevented innovation and led to project failure.

Control and compliance and limitations to trust

Spekle (2001), within a transaction cost economic framework, proposed that management structures 'control and service' how the goals of the organisation will be delivered and that different control archetypes are contingent on circumstance. For example, a 'machine control' archetype focuses on standardisation, the definition of norms, detailed control and 'predefined and codified performance targets', whereas information sharing, emergent standards, with a low emphasis on 'formal instruments', reflect an 'exploratory control' orientation (Spekle, 2001: 437). Extending this idea van der Meer-Kooistra and Vosselman (2000), demonstrated that bureaucratic organisations tend to be controlled by rules, are risk averse, and focus on detailed contracts attempting to define and control all contingencies to reduce risk, whilst market based organisations tend to rely more on price and less on detailed contracts. The authors further suggest that within trust-based relationship contracts tend to be socially embedded, contain less contractual detail and focus on process controls and the limited use of power. This supports the view of Langfield-Smith and Smith (2003) who demonstrated that social and outcome controls are more indicative of a trust-based relationship whilst behavioural controls are features of bureaucracies. This reinforces the position that significant social aspects exist in all transactions and exchanges are socially

embedded, trust strengthens relationships and increases mutual dependency, whereas control impedes collaboration (Granovetter, 1985, Nooteboom, 1996). Uzzi (1997: 61) further emphasised the embeddedness of social relationships arguing that this is created by the 'micro behavioural logic of exchanges… and that, 'information transfer is more fine-grained, tacit and holistic' than economic exchanges. The above observations demonstrate that increased formalisation tends to impede the development of trust, as formal control inhibits social control processes through limiting the informal ad-hoc day-to-day exchanges that enables trust to develop (Parker and Russell, 2004). As Weber and Mayer (2011) observed 'preventative', detailed and strict contracts, with an emphasis on penalties impede relational governance, enforce vigilant behaviour and impede social exchange.

The evolution of exchanges

Social exchange theory is based on the notion of interpersonal relationships under conditions of resource scarcity (Homans, 1958), Blau, 1964). Within this framework trust emerges as a result of exchanges over time when exchange obligations are met and there is reciprocal action. Social exchanges occur primarily between actors, and are unspecified, whereas economic exchange between actors and the market involve previously agreed contracted deliverables (Emerson, 1987). Furthermore, social exchanges have emergent properties and have a 'memory of previous transactions', for example, power applied in a transaction impacts the exchange relationship and in turn the outcome over time. From this perspective exchanges are not static, but develop and evolve over time, 'remember' past experiences, and adapt in relation to how the rules of exchange are understood and applied in a specific context (Nooteboom, 1996). The level of mutual dependency is also driven by the criticality of the resources as well the shifting nature of ownership during service execution. Dependency, power and politics are intertwined and evolve over time by a series of interactions (Allen, Kern, Mattison 2002, Heiskanen, Newman 2008). From this standpoint, interfirm relations such as outsourcing, create a dependency between the parties, which is grounded in the need to control and exchange scarce resources, and as a result mutual power relations emerge and evolve (Caniels & Roeleveld, 2009).

Trust develops during the service creation by a process of adaptation and learning and can be seen as a result of expectations being met under conditions of risk (Luhman,

1979, Cambetta, 1988). This idea of trust as developmental over time can be refined by breaking down trust into the components of contractual, competence and goodwill trust (Sako 1992, Daz Teng, 2001). Goodwill trust is seen as characteristic of the development of a co-operative developmental environment and a common interest between individuals and team members (Kim Langfield-Smith, 2003). However, as Palmentier et al, (2006) observed the concept of trust cannot be viewed in isolation from the other relational characteristics in an inter-firm alliance, such as power, which provides the context within which adaptation can take place.

The relational context, the interaction of risk, uncertainty and conflict, change how the reciprocal actions are structured and how power relations and trust form (Emerson 1972). Molm (2010), in modelling the structure of exchanges, suggested reciprocity engenders higher trust whereas bilateral negotiated exchanges, which are typical in contracts, lower trust and affective bonds. In an outsourcing context the service is delivered by a vendor and the management of the supplier within the contract process frames the relationship and its development over time. The evolution of the service delivery, and partner relationships, is a result of a complex interaction between reciprocal and negotiated exchanges. An exchange involves cost in both reciprocal and negotiated exchanges and if not reciprocated in kind, especially in negotiated exchanges where exchange currency is agreed a priori, will cause a partner to reduce effort and cost to a level that 'balances' the perceived value of the exchange (Molm, 2010). However, this rebalancing of the exchange takes place to gain some measure of equivalence and may result in latent resistance, opportunism and heightened conflict, especially if this is seen as demonstrating partner inflexibility (Molm, 2010). The distinction between negotiated and reciprocal exchanges and the structural impacts on a relationship at a point in time can be extended to negotiated, reciprocal and generalised exchanges that occur sequentially. Furthermore, considering how the rules of exchanges are understood and applied within the specific context of a bi-lateral exchange can inform the evolution of the relationship as well as the consequences of this for service delivery (Cropanzano Mitchell, 2005).

Exchanges that occur during the early stages of contract negotiations, transition and the initial performance of the service 'set the stage' for later interactions and indicate to the supplier how the buyer will approach contract management. Terms and conditions stating

pre-calculated cost reductions, 'liquidated damages', and service guarantees, and written down in the contract, determine the initial direction of the relationship and moderate behaviours as the delivery proceeds. A tight and complex specification in the contract forces the supplier into compliance mode with a focus on scope management rather than flexible interpretation of requirements (Weber and Mayer, 2011). Expectations of both supplier and buyer for the outsourcing relationship arise from these first discussions during negotiations where trust is low and there is no history of interaction (Poppo et al, 2008). Initial conditions, specifically contract terms, statements of work and governance, can fix the long-term orientation of the relationship that can prove extremely difficult to change as circumstances evolve (Cox et al., 2004).

There is an apparent contradiction in the desired ideals of collaboration, trust and openness in interfirm relationships and the actual contract and real ways of working. Exploration is therefore required that explores what is occurring in practice, how collaborations are influenced by complex contracts, and how service delivery is moderated by critical interactions during the contract management process. This research aims to bridge this gap by exploring what occurred in a multiple partner application development project in the defence sector and how critical interactions, governance and strict contracting, imprinted the ways of working and led to its failure.

Process Model

The research took a process perspective focusing on periods of activity, the 'established patterns of interaction (that) may change as a result of specific encounters' (Newman and Robey, 1992: 250). The model is based on punctuated equilibrium, where established patterns of activities are quasi-stable episodes, interrupted by specific encounters or incidents that may disrupt and change the prevailing patterns of activities (Van de Ven and Marshall, 2005). At these points, the interaction 'states' were assessed based on an approach by Heiskanen et al (2008) to be: cooperative, preventative/controlled, or equivocation, adopting a 'wait and see' mode (Newman and Robey, 1992, Robey and Newman, 1996, Heiskanen et al., 2008).

Research design and data collection

This is a longitudinal, single case study (Gummerson, 1991, Yin, 1994) using participant observation (Waddington, 2004) and documentary analysis of contracts, reports, meeting minutes, e-mail discussions, presentations, workshops and project discussions (Rowlinson, 2004, May, 2005). The research focused on the development of relationships during contract negotiations and initial implementation between five collaborative partners in the defence industry described in the table below.

Table 1- Main Organizations within HRM Project

Label	Description	Project Role
SI	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.
Personsoft	A specialist software house providing scheduling and advanced HRM software applications within the defence and health sectors based in 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.
TestCo	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.
DefOrg	The strategic organization 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.
Agency	The contracting and procurement organization of DefOrg based in Brussels.	Prime contracting part of the client - responsible for contract execution, project management, the acceptance of deliverables and payments.
UserCo	The end-user department for the software and the organization 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.
IT&V	The organisation within DefOrg responsible for ensuring integration and security for all delivered applications within the organization.	Responsible for the acceptance of the software as being fit to operate on DefOrg's infrastructure. They cover particularly security and integration.

Note: 1- DefOrg and IT&V played a limited role and this paper focuses on the five main actors: SI, Personsoft, TestCo, Agency and UserCo

The case involved four main locations across Europe, and 28 principal participant actors involved in various aspects of the contract and delivery. The case organisations, pivotal actors and relationships are shown in the case context diagram (figure 1). The case was monitored for four years from contract bid and award in 2008 until September 2013 when the initial operating capability (IOC) delivery was accepted. Research data included all contract documentation, design, planning, project management and control documents, internal memos and all monitoring reports (highlight and project management) from the regular (sometimes weekly) meetings. 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 and anonymised. In addition to the above data, a detailed project diary/log was established and several documented workshops, focus groups and semi-structured interviews were also held to debrief and discuss project issues and concerns.

Analysis focused on ways in which the initial contracting and antecedent conditions may have influenced the development of relationships, particularly cooperation and conflict, and how this impacted upon the delivery over time (Braun and Clarke, 2006, Guest et al., 2012). Based on this approach a project timeline and event list was constructed (Heiskanen et al., 2008), starting from project inception to acceptance of the Initial Operating Capability (IOC) deliverable. Furthermore, critical incidents and episodes of activity representing important junctures or turning points within the project that significantly affected the outcome were identified (Robey and Newman, 1996). The focus of the interaction states was between the supplier and client groups led by Agency broken down into more detail where the analysis dictated. At these points, the interaction 'states' were assessed based on an approach by Heiskanen et al (2008) to be: cooperative, preventative/controlled, or equivocation, adopting a 'wait and see' mode (Newman and Robey, 1992, Robey and Newman, 1996, Heiskanen et al., 2008).

The reliability of the categorization across the interaction states was assessed by a second researcher who independently reviewed the documented events and any conflicts were resolved by a joint review of the data (Stiles, 1999). The rigour of this study was continually assessed by use of a systematic process of analysis, peer review sessions to discuss findings, and checking for data that may disprove the hypotheses being generated (Guba and Lincoln, 1994), validity (or trustworthiness) is supported by use of a real-world, longitudinal case, and giving sufficient contextual information in this paper (Alvesson & Skoldberg, 2008; Stiles, 1999) as allowed by word-length. Method triangulation was also used, where comments in interviews were analysed alongside formal documents, for example. The results to be discussed cannot be generalised to all situations but has potential transferability (see Shenton, 2004) to cases with complex contractual relationships.

Results

This section commences with a review of the initial and antecedent conditions of the HRM project that foreshadowed and imprinted the project outcome. We then consider the specific encounters and episodes for the requirements validation phase of the outsourcing contract in order to demonstrate the link from data to the theoretical constructs in the process model. We close with an overview, shown in Table one, of the complete analysis over the project IOC timeline.

Figure 1- Context Diagram HRM Project

This simplified context diagram illustrates the main actors in the HRM project, their perceived orientation to the project, and the relationship lines (only the main interactions shown) the status of their relation during the main design and development phases. It demonstrates the sometimes conflictual and ambivalent attitudes to both other actors and the project in general.
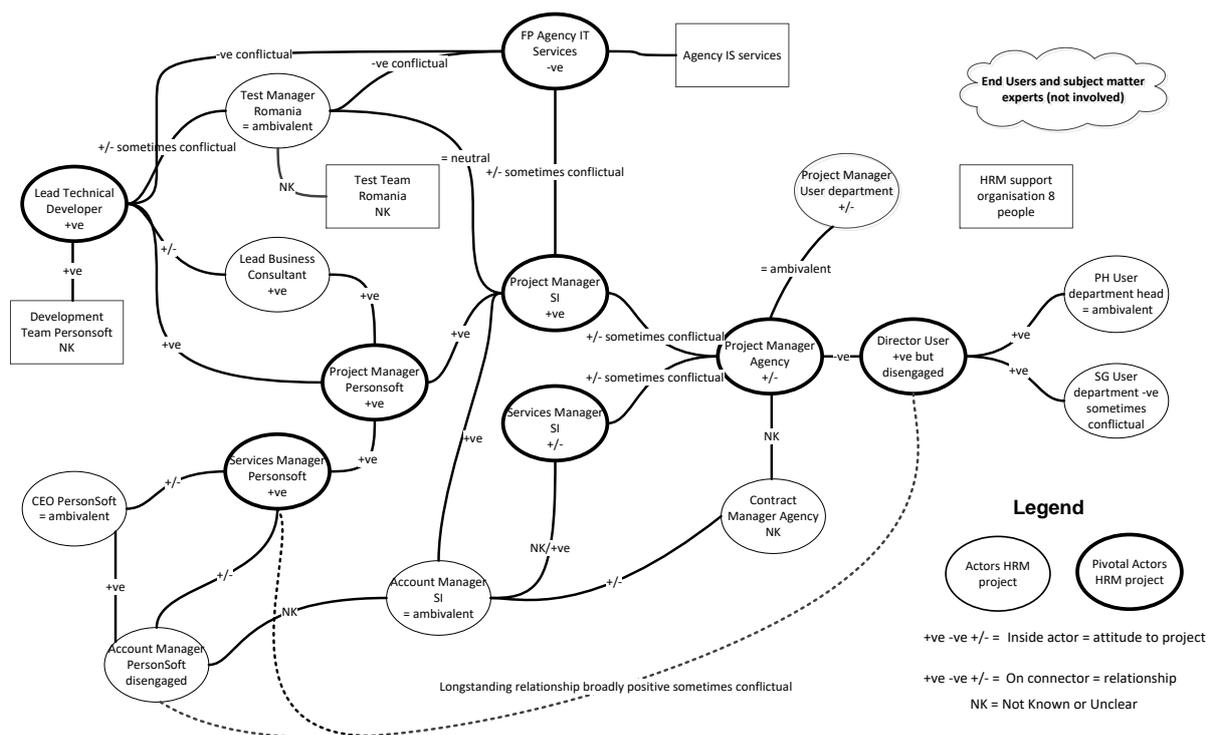
Antecedents to the HRM project

At the start of the project both the agency and lead supplier had little experience with Personsoft the supplier of the software. They had supplied to UserCo (the end-user department) a software application with essentially the same functional scope as the HRM

software over a period of 10 years. The relationship between Personsoft and UserCo throughout this time was characterised as high trust and cooperative as they reacted flexibly to UserCo's requirements in providing an application which supported the core of their functional needs covering basic personnel management and establishment planning. The working relationship built up over fifteen years between Personsoft and UserCo, emphasised flexibility and a willingness to work collaboratively, coupled with a tolerance for a lack of formal techniques, such as testing and documentation, with relatively frequent software errors and re-work 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 fixed price. This sort of behaviour is characteristic of a trusting buyer-supplier relationship (Heiskamen, 2008). The development process in this earlier era was geared towards a bespoke tailored application approach and the relationship was highly interactive and developmental.

It was decided at a strategic level of the defence organisation 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 the user organisation, to cover extra services such as training management, and to deploy the services across all of its Head Quarters. Agency as the procurement and contracting organisation were instructed to contract for this provision and initiated a formal bidding process. However this decision, to go for a COTS based solution, had profound implications for the ways of working for Personsoft, as a Development Manager observed:

…we were trying to sell a COTS product in a situation where the history had been essentially bespoke (incremental) development. And that dynamic, that dynamic with John's entourage they expected us to be able to do whatever needed to tailor this thing.

During 2006 Agency began a competitive tender process to deliver the HRM application and initiated this based on a set of requirements essentially derived from the experience of UserCo, even to the extent of using specific terms from the incumbent application. As was stated by the Commercial Manager of Personsoft:

I suspected that the procurement process would have devolved naturally to one of the big ERP HR type of provider. The fact that we were incumbent, the fact that John 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.

As a consequence of their long-standing relationship, and also to maintain tight control of the selection process, UserCo encouraged Personsoft to bid for this wider scale application, and to seek a supplier partner with sufficient standing with Agency to qualify for the tender process. Personsoft as a small independent software house were forced to seek a partner as they lacked the technical capability to integrate the application into the complex IT landscape of the wider organisation as well as being unable to provide the necessary financial guarantees and bonds.

Entry conditions and the project start-up

The lead supplier 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. In responding to the bid the consortium offered an extended version of the incumbent client-server application, that although technically non-compliant with the specification for a full web-based application, offered good functional coverage of the requirements 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 such a contract meant that the parties, Personsoft and UserCo, had to adapt their ways of working and operate within the formal umbrella of the SI and Agency control procedures respectively. This formal approach demanded more rigour, dependability, good quality and well tested software. From this perspective, the control processes change (for both Personsoft and UserCo), 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 UserCo and Personsoft respectively. This implied that the relationship between Personsoft and UserCo became formally 'arm's length' and excluded the more social control mechanisms and adaptable behaviour that formerly existed. The informal approach was replaced with a strict, 'preventative' contract framework that acted to minimise risk and control delivery precisely (Poppo and Zhou, 2013). According to the

Services Director of Personsoft this led, at an early stage, to attempts to circumvent this control:

We will certainly be supporting an approach which enables us to communicate directly to key users without passing through any Agency bottleneck. This is indeed an overhead we jointly cannot afford if we are to meet the imposed HRM delivery schedule. And it is the way we have worked most successfully with UserCo personnel over many years.

Contractually the project was framed by a strict set of requirements statements of work (SOW) covering all aspects of the supply, performance and testing of the application 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 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 arm's length interaction. 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. From this perspective the interaction state at project initialisation was one of 'control' emphasizing compliance to project deliverables and timescales. The supplier side responded to this control orientation by a precise interpretation of scope, attempts to reduce the ambiguity and complexity of the requirements with continuous challenges to project feasibility that went on throughout the development stages.

Exchanges and Encounters

Contract Line Items (CLINS), at a strategic level broadly conformed to major project phases for example: CLIN1 (Project Management, ongoing throughout the project), CLIN2 (Requirements), CLIN3 (Design), CLIN4 (Development) and CLIN5 (implementation). Here the analysis will be extracted for CLIN 2 to illustrate the link from the raw data to the analysis and thus demonstrate changes in interaction states resulting from specific encounters.

During the project start-up meeting (encounter 1), the contractual conditions were reaffirmed and the initial tasks assigned along with the formation of the team. The elapsed time from bid submission, contract award to eventual start had been more than three years and from requirements definition six years. This meant a substantial risk of requirement obsolescence had arisen. At the 'kick-off' meeting Agency formally introduced changes to the project, including new requirements and a number of requirements were obsoleted (no longer required) and announced that this new situation formed the basis of the validation (encounter 2). This intervention fundamentally breached the assumptions behind the delivery of a COTS solution, as the new requirements required a different more developmental approach and started a train of events that framed the ongoing project. From the Personsoft Project Managers perspective:

> *There seemed to be a basic contradiction in the contract …the requirements (were) based on the assumption of a COTS package to reduce the risk et cetera by buying something off the shelf. Bespoke was not really tied in – and then you look at all the methods, the approaches were contradictory. We never, I don't think we ever got over this, we were forever arguing, and I mean every single meeting, was this distinction about what we had to do and what was actually required.*

From Agency's perspective these new requirements did not substantially exceed the application design requirements in terms of function and could be assumed to be reasonably covered within the bid Statement of Work (SOW). Furthermore, as the basis of HRM was the old application, substantial portions of the new requirements were offset in their view by *'already implemented functions and expected more HRM requirements to be covered'* [Agency, Project Manager] and were *'suspicious'* and '*mistrustful*' [SI, Quality Manager] of attempts by the supplier to increase scope. Indeed the Agency Contract Manager stated that:

> *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).*

These new requirements needed further specification - compared to those covered within the statement of work (SOW) and requirements based on the incumbent application. They

would need substantial validation and design work in the view of the software supplier's Services Director:

> *Please also be aware that these new requirements … are very substantial, and that Agency comments of there 'seems to be very little change', and' (the scope) includes these SR's', this assessment is very very wrong.*

Despite this, the starting position of Agency was that no major impact in cost or time was expected from the requirements review process, and consequently the interaction state between the participants during 'encounter 1' is assessed as 'control'.

This control orientation was carried forward to 'episode 1'. Whilst formal project channels were defined, continuous discussions took place about the need for direct contacts between Personsoft and UserCo, the need to circumvent formal project interfaces and re-establish previous ways of working. This initiated controlling actions from the Agency project manager who *'reacted angrily when he saw an e-mail sent directly by John (to UserCo), which was not the defined channel' [Project Manager SI]* when analysts from Personsoft contacted and arranged meetings with UserCo directly and outside of SI and Agency control.

This prompted a response from the Services Director at Personsoft:

> *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. We need direct access to the end users.*

This process was illustrative of a conflictual relationship during the early stages of the requirements clarification (episode 1) where a tension arose between Personsoft's desire to reproduce early modes of working with UserCo and the principal contract partners, Agency and SI, enforcing a strictly contractual form of governance and an 'arms-length' relation between developers and users. A problem understood by the UserCo Senior Manager:

> *… we understand the SI's concern that the drivers of the business processes are mostly the end-users. They are the ones who can really define the operational sequences they run by exploitation of the various functionalities offered by the software.*

Furthermore, the early requirements workshops took on much of the characteristics of a re-negotiation and restatement of project objectives with Suppliers trying to prove an extension to overall project scope (and thus cost) whereas clients sought to minimise any project impact from the new requirements. They were focused on maintaining project scope and timescales, and probed the extent to which offset was possible from already delivered functions in the application, to avoid threats to the fixed price.

This pattern of behaviour continued throughout the validation process, and several iterations of the agreed requirements list, as well as in the impact statement needed to underpin a contract amendment. The exit from this process was 'encounter 3', the contract amendment required to change project scope. The interaction state of 'control' reflecting the contractual and negotiated nature of this activity and its formal role in codifying and crystallising the negotiations that took place during 'episode 1' and representing the inherent power dynamics of a contract negotiation. This interaction state (control) now forms the entry interaction status for the next set of activities beginning with 'episode 3' the design approach. This cyclic pattern of encounter and episodes repeats throughout the process model and full analysis of the events and interaction states for the IOC implementation of HRM from start-up to final acceptance is shown as Table 1.

The root causes of failure

The HRM project, in effect, delivered only an upgrade of the existing application along with a limited set of new requirements introduced during the project start. Interfacing, integration within the DEFORG systems, self-service functionality and most of the workflow required at IOC were either obsoleted or put off until full operating capability (FOC). System implementation was scheduled for ten months from effective date of contract but actually took seventeen months and cost overruns on the supplier side were 100% for all supplier partners. The origin of this failure occurred during the first six months of this project and the root cause of this failure was a fundamental mismatch between the culture of Personsoft that emphasised informality and collaboration compared to that required by the HRM project which emphasised strict control.

This mismatch was exposed throughout the trajectory of the project. Firstly, in the creation of information schemas, software development plans system and security design

specifications, test plans and system implementation plans and the system design plan. The creation of all of these contracted documents (episodes, 4, 5 and 6) was subject to dispute, continuous revisions and rework due to poor quality, which caused friction regarding responsibility for creation within the suppliers and conflict between suppliers and clients in what was seen by Agency as a critical and essential component in their risk reduction approach but as an onerous effort by SI. In particular, Personsoft found the documentation problematic throughout the project resulting from its long term culture that did not emphasise formal controls or documentation and as a result many of the standard documents that would be expected simply did not exist at project start. An analyst commented, *'For UserCo, life is easy because they understand the systems makeup and how it works and are thankfully free of rigorous processes'.*

Figure 2- HRM project timeline

This figure shows the evolution of the timeline for the project from inception to initial acceptance of the installed software in late 2012. It shows two main periods of delay the first caused by the immature status of the requirements and the bug fixing and corrections needed following software delivery. Both these factors can be traced back to the rushed nature of the requirements validation during the first two months of the project.
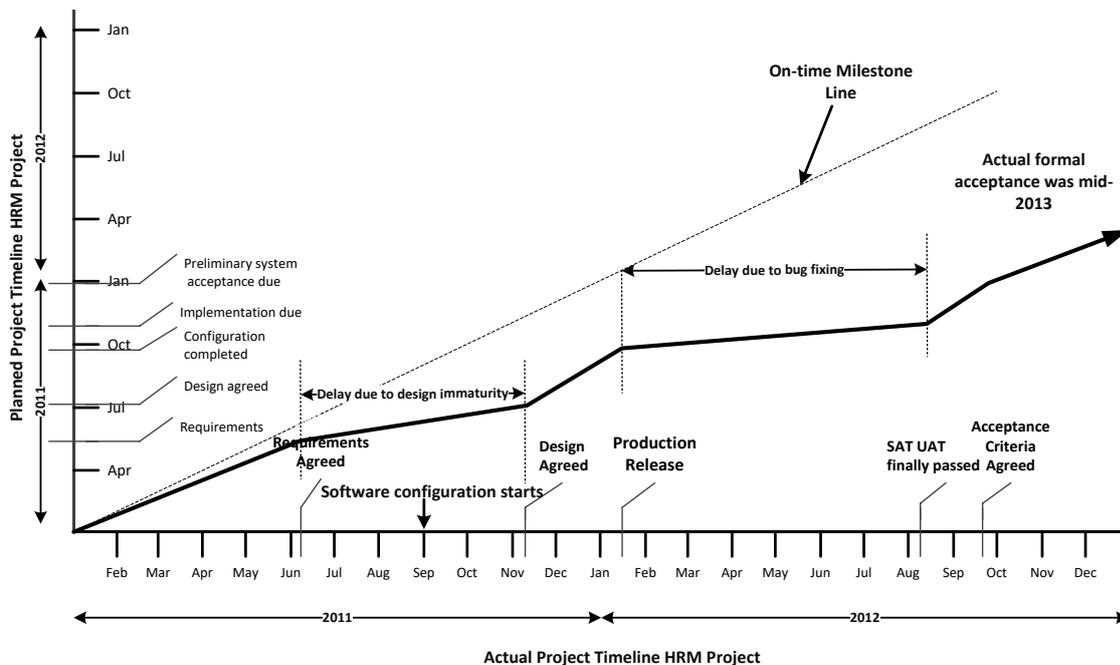
All documentation was late and especially the design specification in the form of Use Case diagramming for the new requirements. This last item, and its creation, was the primary cause of the failure to meet the design specification milestone (critical design review CDR, during encounter 9) and the inability to settle and agree functionality. Initially the design specification at a formal project level failed and a direct workshop approach between Personsoft and UserCo was permitted. This allowed a more direct collaborative approach (episode 3) between Personsoft and UserCo more consistent with their previous working relationship but added project delays due to the iterative nature of exploratory requirements gathering that was needed.

To avoid the knock on effects on software development as a result of delays in the design specification Personsoft preceded, at risk, with the software configuration in parallel with an ongoing design specification and before the final design was stabilised and agreed. Increasingly, changes in requirement, maturation in ideas and some backtracking meant divergence between software development and business requirements occurred. This caused substantial development rework, continuous documentation revision and as a result, a loss in capacity and rejection of the design by Agency. Furthermore, constant changes to the configured software, immature release and testing procedures introduced substantial errors which were reflected in the number of releases (episodes 8, 9) and patches necessary to meet the first software delivery. In addition, the poor quality and error ridden underlying COTS software was also exposed during UAT (episode 11) resulting in UAT rejection (encounter 12) and substantial rework.

Figure 3- Event Chart Encounters and Episodes

| Event chart | Legend: En: Encounters – Interactions, interrupting or framing episodes
Ep: Episodes – periods of quasi stable project activities | Critical incidents impacting on outcomes |

Compliance and negotiated exchanges

En1: Project Kick-off meeting
Ep1
En2: Formal Introduction of new requirements at KO meeting
Ep2
En3:Requirements workshops to assess scope change and produce impact statement
Ep3
En4:Design requirements workshops translation business need to system spec
Ep4

En12:UAT Failure at PCR15 Notification of delay and damages from Agency
Ep11
En11:Retest SAT and problems with security testing start of UAT testing at user site
Ep10
En10:Failure of factory and system acceptance (SAT) and demand for a cure plan from Agency

Ep12
En13:Rework of core application deficiencies and further security bugs
Ep13

En17: IOC System acceptance
Ep16
En16:Preliminary acceptance of application with contracted amendments
Ep15

equivocation

En5:Project delay results in shift in focus to re-scope coverage of the use cases and documentation to focus mainly on new requirements

Lack of clarity in business process becomes evident

En14:Joint install and agreement of priority fixes to enable IOC to continue
Ep14

En15:Production install and UAT acceptance with caveats

Cooperative and reciprocal exchanges

Ep5
En6:Joint workshops users and developers on business process and application design
Ep6
En7:Design and Use case first version for preliminary design review
Ep7
En8:Developers start configuration before design fixed at final design review done 'at risk'
Ep8
En9:First production version installed for system and security testing

Ep6
En7b:Continued meetings on design especially for 'new functional areas'

Continuous refinement of requirements

Decision to move too early into development driven by failure on contractual timeline

Ep9

Requirements (2 months)
Software design and documentation (6 months)
Configuration and repair of software (10 months)
Testing and install system (9 months)

Discussion

This research demonstrates the critical nature of initial conditions and the processes and exchanges that occur in an IT 'collaborative' context and how the patterns of interactions between the parties are 'cyclical not sequential' (Ring and van de Ven, 1994). The analysis

supports the view that initial conditions and antecedents foreshadow outcomes, and 'imprint' a trajectory that can prove difficult to change or challenge, and can ultimately lead to project failure (Doz, 1996). The history of the relation and the 'shadow of the future' plays a role in trust, expectations and relationship building (Poppo et al., 2008). It also supports the view that tight contracts focused on 'safeguarding' or 'prevention' reduces the opportunity for cooperation in outsourcing contractual engagements (Parmigiani and Rivera-Santos, 2011, Poppo and Zhou, 2013).

The contract was signed under the assumption of a commercial off the shelf (COTS) delivered application intended to minimise scope drift and project risk. In such approaches the requirement and business processes are assumed fixed and known and contracting proceeds focused on compliance, and interactions are broadly regulated by negotiated exchanges. The introduction of new requirements into a fixed price and scope project where the requirements were apparently settled meant the process of revalidation had to be flexible and more exploratory. These new requirements extended the functional scope of the existing application as well as leading the user community into new unknown business areas. Such factors suggested that a more developmental, incremental and collaborative approach was required. This was partially achieved by initiating workshop processes, however, the contractual framework continued as if nothing had happened, and focused on 'regulating behaviour' rather than goal achievement (Weber and Mayer, 2011).

Although a precise contract as proposed by Cong and Chau (2007) is essential in the early stages of project, where there is uncertainty and limited history between the contracting parties, an over focus on contractual compliance during delivery can hinder or impede the development of relationships that allow supplier flexibility (Kim et al., 2013). In complex real-world outsourcing projects, as shown here, there is always a mix of negotiated and reciprocal exchanges that are integrated and inseparable. The project, at times, will demand developmental approaches where users and software developers share knowledge and experience to make sense of the business domain. From this understanding developers could model a solution accounting for application capabilities and limitations compared to what is expected by the users. In essence, developmental approaches are about integrating different perspectives into a solution; however, where a contractual deliverable, with fixed

terms and outcomes, is interposed within a developmental process there is a mismatch and conflict.

At stages within the project, when work practices shifted towards a more reciprocal exchange, supportive of a developmental exploratory approach, developers and users were able to cooperate and achieve reasonable agreement on the design. The impact of a looming project deadline fixed on the assumptions of COTS development was to truncate this process and furthermore resulted in the software house proceeding at risk when the design was not fixed or stabilised. This resulted in an ever widening gap between the delivered functionality and the desired end state as a result of the software design being continually in a state of flux during the entire software configuration phase.

A Model of Service Interaction at HRM

Cropanzo and Michell, (2005), distinguished between types of exchange and the exchange relationship drawing attention to the conflation of exchange as the relationship, and a relationship as a consequence of the exchanges. Based on Foa and Foa's (1971) model they pointed out that real world interfirm relationships involve 'myriads' of exchanges and that 'parties can exchange different things in different ways' at different times (Cropanzo and Michell, 2005 p887). This suggests that if the relationship between parties is moulded by the nature of the exchange this would be constantly evolving and adapting as different types of exchange occur. Furthermore, as exchanges are not discrete transactions but are series of interactions that take place in the 'course of time' the outcome of one exchange becomes the input for the next and by this means the current transaction becomes embedded in a historical sequence of events (Molm, 2010). From this perspective transactions have memory of the past and the relationship can cycle through quasi-stable periods between collaboration and control dependent on the relationship attributes demanded by the service delivery at that point in time.

In the HRM project, exchanges took place over an extended period of time during the course of service delivery and involved both contracted and social resources. Based on the above discussion we can conceptually separate the rules and control characteristics of the exchange from the nature of the relationship (Meeker, 1971). The rationale for this is where high levels of shared knowledge or periods of innovation are important, social and

trust based control and reciprocal action dominate (Li, 2011, Blumenberg, Wagner 2009). For example, high uncertainty exploratory development in a project suggests an interactive approach would be required whereas for low uncertainty situations an arm's length approach would be more appropriate. This split characterises the relationship as either predominately a social exchange or economic exchange, respectively. The types of exchange occurring divide between negotiated and contracted deliverables, which imply a more directive contract management approach, to collaborative and relational, where a degree of interaction and knowledge sharing is needed. This split characterises the exchange as either predominantly a social or economic exchange respectively. Based on Cropanzano and Mitchell (2005) this conceptual division of exchange and relationship characteristics, along with a mapping of principal service activities is shown in figure 3.

Figure 4- Exchange Model HRM Project
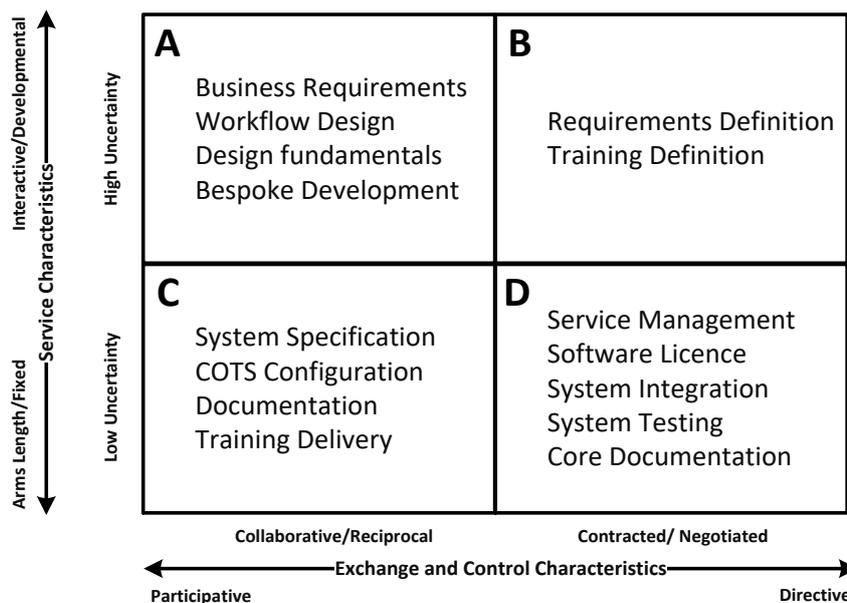
Source: Authors

The delivery of the HRM project involved the completion of many sub-components. The contract was signed under assumption of a COTS package delivery and process and contractual mechanisms were put in place that were 'preventative' and focused on regulating behaviour (Weber and Mayer, 2011). This approach implied that much of the uncertainty in the business requirement and the system design were settled – that the scope was fixed. However, at an early stage in the project new and uncertain business requirements were introduced that would require an interactive and collaborative process

that would need inter-dependence and bi-lateral coordination (Parmingiani and Rivera-Santos, 2011). Furthermore, those deliverables that involved intangible knowledge assets, such as how business processes work, definition or design, needed repeated interaction exchanges and experimentation (Collins and Hitt, 2006, Inkpen, 2008). When the transaction is reciprocal, such as in sharing information, this matches the relationship characteristic, trust building and knowledge sharing is promoted and social control should prevail (cell A, Fig 3). Low uncertainty, in scope and definition implies an arm's length economic exchange relationship and collaboration is assumed unnecessary. In this case where the actual exchange is also economic (involves concrete deliverables) there is a 'match' (cell D, Fig 3) and there is coherence between the exchange relation and the actual exchange itself and formal control prevails (Cropanzano and Mitchell (2005).

When there is an assumed arm's length relationship and the actual exchange is a social and reciprocal then there is a mismatch (cell C, Fig 3). This occurred several times during the project when Personsoft attempted to collaboratively develop and question what were assumed by the other parties' standard already delivered and contracted components of the project. This was for the other parties a serious breach of trust and a 'betrayal' and put into question the whole basis of Personsoft's competence to deliver. It also put great stress on the internal organisation as developers felt frustrated and constrained by the arm's length approach. A high uncertainty implies an interactive process is needed and where formal controls and contract milestones are applied the actual exchange is primarily economic (cell B, Fig 3). Developmental and collaborative processes take more time and imposed contractual milestones limit the interaction and promote superficial analysis. This resulted in lack of clarity throughout the project that promoted the conflict over meaning and interpretation that underpinned its failure. The application of contractual control extended even when a nominal collaborative approach was allowed (cell A, Fig 3). Bespoke development had to conform to contracted timescales nevertheless and the failure here on the contractual element of deliverable had a severe impact on trust and relationships between the parties.

From this discussion we can propose that this project demonstrates the heterogeneous nature of complex application development needs contingent management and relational governance approaches over the project phases (Williamson, 1985). From

this case study, as well as the usefulness of focusing on social exchange as an explanatory framework, it can be seen that different exchange protocols prevail at different times of the project. Furthermore, spillover from one type of exchange to another frame the relationship development over time, and complete separation of social and negotiated exchanges is difficult conceptually and practically in the real cut and thrust of a specific work context.

Conclusion and implications for practice

In the HRM project many of the problems that arose, including poor quality software development and lack of processes, can be linked back to a culture that emphasized flexibility over rigour. This is indicative of a way of working going back years that was mismatched to the new service need. The acceptance of a non-compliant application by Agency demonstrated weak vendor selection processes not focused on the essentials and a failure to apply rigorous due diligence (Pai and Basu, 2007). Furthermore, the contradiction between having a 'tight' arm's length procurement relationship whilst needing a flexible response from suppliers, in outsourcing where complex interaction is needed to solve problems, has been demonstrated, and implies governance, service delivery and the characteristics of the service must match (Joskow, 1988).

Limitations

Although a single case in a specific sector cannot be generalised to all collaborations the detailed understanding of the real world context of this case gained over a longitudinal study of four years enables us to move away from simplistic rule based logic towards effective knowledge acquisition and understanding (Flyvberg, 2004). Our findings do suggest that much can be learned about such relationships, the influence of context, antecedent conditions and the problems of co-ordinating diverse interests in heterogeneous service supply networks. In the Defence setting in particular, forcing suppliers to work closely to tight fixed price contracts can inhibit service innovation, especially when more flexible approaches to development are demanded.

Table 2 - Event History HRM Project

Event	Description of the event	Interaction state	
En1	Project kick off meeting at system integrator offices in Brussels.	Control	Contractual commitments and consequences of service failure.
Ep1	Agreement and discussion on project governance, timelines and approach to requirement validation.	Control	Negotiation- buyers maintaining suppliers seeking to extend scope.
En2	Formal introduction of project amendment to requirement covering functional coverage of new business area.	Control	But equivocation by Personsoft as feasibility doubted.
Ep2	Creation of requirements traceability matrix and assessment by suppliers – including candidate requirements introduced at kick-off workshop.	Control	Emphasis on compliance to the bid specifics by SI.
En3	Requirements specification and negotiation/trading workshops to assess impact and scope of change. Output was impact statement including financial consequences.	Control	Negotiation - Agency emphasising continued SOW compliance.
Ep3	Joint technical reviews and internal supplier review mapping requirements current functional capability.	Control	Continuous negotiation and probing for compliance.
En4	Design requirements workshops and refinement of the design approach. Number and type of Use Cases, scope of documentation, restriction to new requirements and design rules agreed. Access to resources and the responsibility user specified.	Control	Progress slow and delay becoming evident.
Ep4	Joint technical reviews and workshops to create use cases describing business processes and application interaction.	Equivocation	Agency accepting change of approach reluctantly.
En5	Decision to change approach resulting from delays and slow progress in determining business process and how this was to be modelled in the application.	Equivocation	Direct Personsoft to UserCo approach structured.
Ep5	Interactive design directly between Personsoft and UserCo allowed, creation process maps, flow diagrams, Use Cases and walkthroughs and story boards of concept functional delivery.	Cooperative	Some limitations in access to user resources such as subject matter experts.
En6	Presentation of outcomes of design workshops/events to lead developer Personsoft by senior analyst – delivery of interim functional specifications and Use Cases.	Cooperative	Design was incomplete and unstable ongoing modification.
Ep6	Continued refinement of the design use cases – ongoing and iterative.	Cooperative	Continuous and iterative refinement of business need.
En7	Preliminary design review meeting first version design presented but not accepted as design not yet stable and documentation incomplete.	Cooperative	But equivocation by SI and Agency.
Ep7	Mapping of requirements and new functional areas agreed at Personsoft internal meeting – walk-throughs and discussion of design implications from preliminary design review.	Cooperative	But ongoing equivocation by SI and Agency.
En8	Configuration of HRM COTS package to cover new requirements - started at risk and before final design stabilised.	Cooperative	But equivocation as process and quality invisible to Agency & SI.
Ep8	Creation of multiple releases due to poor software and ongoing changing requirements added to internal test and acceptance burden.	Cooperative	Increasing unease at SI, TestCo and Agency.
En9	Delivery of Release for factory acceptance testing (FAT) to supplier SI and TestCo Romania.	Cooperative	Equivocation at SI, TestCo and Agency.
Ep9	Testing of release HRM on FAT, Reference System (SAT) and initial UAT to check for user configuration compatibility. Fat test run – interrupted by preparation failure re-run broadly successful.	Cooperative/ Equivocation	Emerging problems with security during testing – growing unease.
En10	Formal failure of factory and system acceptance test and demand for a 'cure' plan by agency.	Control	Formal letter to SI from Agency re notification delay.
Ep10	Reconfiguration application and correction of vital and critical security deficiencies from core application and incorporated workflow software. Repeated new baseline(s).	Control	SI 'cure plan' and weekly on-line update and progress meetings.
En11	SAT re-run including a re-run of security integration test and validation routines – new security failures. Start of initial UAT testing after delay.	Control	Detailed and careful assessment of deliverables by SI and Agency
Ep11	UAT and acceptance testing including a re-run of security integration test and validation routines. UAT test started including a full regression over all the COTS core application.	Control	Detailed test scripts covering full scope application Personsoft put at arm's length.
En12	Notification of UAT failure from full regression test at PCR 15	Control	Control: UAT test revealed large number errors in core COTS package going back years.
Ep12	Reconfiguration application and correction of vital and critical security deficiencies – update all documentation and preparation new baselines.	Control	Bi weekly meetings and careful control of deliverables by SI.
En13	Delivery Release for re-testing and rework of core application deficiencies – near iterative release and install of application.	Control	Detailed and careful assessment of deliverables by SI.
Ep13	Installation and testing several runs, testing R4P7, four new security errors and minor documentation changes. Two running patches allowed.	Equivocation	Some collaboration allowed by Agency for UserCo/Personsoft.
En14	Agreement at production cutover meeting to joint install and the required priority fixes to enable IOC to continue.	Equivocation/ Cooperative	Some signs of Agency, SI and User exhaustion with process.
Ep14	Repair and finalisation of priority fixes – including critical security deficiencies.	Equivocation/ Cooperative	Negotiation to offset fixes to next phase FOC.
En15	Production installation and UAT acceptance with documented caveats.	Equivocation	Careful agreement and sign-off deliverables by UserCo/Agency.
Ep15	Definition of contents for patch 8 rolling up all minor and significant deficiencies into two maintenance releases MR1 and MR2.	Control	Suppliers minimizing impact and offsetting to FOC.
En16	Preliminary acceptance of application with the contracted commitments covering the maintenance releases for post IOC.	Control	Negotiation on scope and whether to move directly to FOC.
Ep16	Preparation of closing of IOC by suppliers specifying post IOC deficiency correction for inclusion in acceptance documentation.	Control	Negotiation to gain acceptance with minimal re-work.
En17	Acceptance by Agency of IOC release. (formal written preliminary system acceptance PSA occurred 8 months later this trigged IOC payment)	Control	Detailed evaluation of SOW against delivery.

Legend: En: Encounters – Interactions interrupting or framing episodes, Ep: Episodes – periods of development activity

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