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**Governance and Complex Performance:
The Dynamic Interplay of Governance (Dys)functions**

ABSTRACT

This paper examines how organizations coordinate the often conflicting demands for high performance delivered over long periods and involving complex environments. Using two longitudinal cases of defense contracts for supporting new warships we explore not only the roles of formal and informal governance mechanisms, but the dynamic interplay of functions and dysfunctions over time in complex inter-organisational relationships. We argue although varying degrees of formalization is important when managing long-term relationships, organisations should not just learn to contract or build up trusting relations, but consider both together in terms of the effect such interplay has on overall performance. In each case we find where both organizations do not always agree on the governance mechanisms to use, the result is a negative impact on performance. We find that formal governance functions of coordination and control substitute these functions in informal governance mechanisms, while dysfunctional governance tends to dominate the relationship until resolution is achieved. Functions such as learning span across both governance mechanisms and complement each other. Ultimately, the findings show that it is the governance interplay of (dys)functions that drive performance implications.

Keywords:

Contracts, trust, governance interplay, buyer-supplier relationship, longitudinal, defense.

Governance and Complex Performance: The Dynamic Interplay of Governance (Dys)functions

1 Introduction

Managers learning to respond to environmental uncertainties requiring flexible forms of governance between innovating buyer and supplier organizations are often hampered by inflexible and prescriptive contractual agreements (Kim and Li, 2014; Klein Woolthuis et al., 2005; Li and Kouvelis, 1999; Harris et al., 1998). While the role of the contract is traditionally important, the debate continues whether formal governance mechanisms are substituted or complemented by more informal relational governance mechanisms based on trust (Poppo and Zenger, 2002; Argyres and Mayer, 2007; Faems et al., 2008). As alternatives to classical contracting and the transaction cost approach with its aim of complete contracts are sought by management scholars, there is increasing interest in hybrid modes of governance and the implications for performance (Coles et al., 2001; Chung and Kim, 2003; Leiblein, 2003). More specifically, questions arise over how the interplay between contractual and relational governance mechanisms and organizational behaviours affect inter-organizational alliances, partnerships and network arrangements (Williamson, 1996; Dyer and Singh, 1998; Möllering, 2005). This paper explores not merely the roles of formal and informal governance mechanisms, but the dynamic interplay of their functions and dysfunctions over time in the context of complex, long-term inter-organisational relationships (Guérard et al., 2013; Cao and Lumineau, 2015). We argue that although varying degrees of formalization is important when managing long-term relationships, organisations should not just learn to contract or build up trusting relations, but consider both together in terms of their functions and dysfunctions as well as the effect such interplay has on performance.

Prior studies presume the process of contractual agreement or building up trust between organizations is directed at coordination and control (Macneil, 1980; Williamson, 1996). Yet recent theoretical efforts have started to point towards considering the potential trade-off between functions and dysfunctions over time (Vlaar et al., 2007) to offer a more holistic view on governance interplay. We theoretically position and empirical analyse contractual and relational governance mechanisms in long-term relationships. Our empirical analysis is based on the United Kingdom (UK) defense sector, where the typical development lead-time to build new capital ships and aircrafts is between 10 to 30 years, and periods of service 60 to 80 years. We adopt a longitudinal research approach by studying naval platforms over a period of nearly 20 years from the 1990s to 2010. As evidenced around the world, vessel design, construction, maintenance and repair are no longer delivered consecutively by specialist government agencies, but shared with private contractors working towards performance outcomes with public organizations such as the UK Ministry of Defence (MoD). We aim to theoretical refine and empirically extend prior governance mechanisms interplay studies by building on calls for a more ‘context-dependent understanding’ of governance (Filochev and Nakajima, 2010: 593). This means exploring the interplay of functions and dysfunctions of formal and informal governance mechanisms in long-term relationships which span organizational boundaries (Luo, 2002; Vlaar et al., 2007; Mahoney et al., 2009). Our research examines how organizations coordinate the often conflicting demands for high performance delivered over long periods and involving complex environments (Coles et al., 2001; Leiblein, 2003; Child and Rodrigues, 2011).

Inter-organizational alliances which complement formal contractual control with a more relationship based and learning dependent approach may seem at odds with the high value, often critical operating environment of public-private ventures in the transportation, health and defence sectors (Zheng et al., 2008; Roehrich et al., 2014). The MoD for example spends £7.5bn annually

on support contracts, representing around half of the contractor's total business and from which it is seeking considerable savings (Jones et al., 2014). In an era defined by government outsourcing and cutbacks, received wisdom suggests that contractual agreements made at the outset of product commissioning must be reflected downstream in the performance outcomes delivered by supply chain partners (Stremersch et al., 2001; Narayanan and Raman, 2004). Yet many inter-organizational alliances fail to live up to expectations often because of shifting product requirements, market volatility and breakdowns in communication over time (Arino and De La Torre, 1998; Duysters et al., 1999; Ireland et al., 2002; Kale et al., 2002).

In line with contemporary practice, we observe traditional modes of control shifting from static hierarchical models around production centric capability towards integrated solutions delivering flexible service availability (Araujo and Spring, 2006; Davies et al., 2006; Jacob and Ulaga, 2008; Ng et al., 2009). In doing so, we answer the call by Cao and Lumineau (2015: 4) who argue that "*existing literature needs a more rigorous distinction between the debate of how contractual and relational governance interact and the debate of the relationships of contractual and relational governance and performance*". Therefore, this study answers the following research questions: i) how does the interplay of formal and informal governance mechanisms impact on performance over time? And ii) how do governance mechanisms' (dys)functions substitute or complement each other over time? We conduct a longitudinal study following two inter-organisational relationships in the defence sector over nearly 20 years (Langley, 1999; Pettigrew, 1990). We collected rich primary and secondary datasets including 40 semi-structured interviews with senior managers, supported by government papers, reports and defence articles.

Our study offers a rare longitudinal and dyadic perspective of governance mechanisms interplay, extending prior studies conducted at one point in time and mainly from one organisation in the dyad. We explore the impact of governance mechanism interplay over time to

realise performance outcomes in complex, long-term relationships. More specifically, we offer a more fine-grained analysis of governance interplay by investigating the relationship of functions and dysfunctions of formal and informal governance mechanisms over time (Poppo and Zenger, 2002; Cao and Lumineau, 2015). Our study illustrates that formal governance functions of coordination and control substitute these functions in informal governance mechanisms, while dysfunctional governance tends to dominate the relationship until resolution is achieved. Furthermore, these observations are linked across each relationship phase (e.g. early, mid, late) over time and to performance.

2. Conceptual background: Governance mechanisms

Previous studies have distinguished between two types of governance mechanisms: formal strategies, such as contracts, and relational governance which is derived from trust and social norms (Griffith and Myers, 2005; Vandaele et al., 2007; Lui, 2009). Social norms are considered here as behavioural guidelines that enforce social obligation during the exchange (Heide, 1994; Cannon et al., 2000). Contractual governance mechanisms are often characterised by written legal documents such as contracts governing the relationship between parties by specifying each other's roles and responsibilities (Lui, 2009). Prior studies have shown that contracts may foster greater efficiency and reduce costs by clarifying activities between contracting parties and by mitigating potential opportunism (Nooteboom, 1996; Zaheer and Harris, 2006). Contracts should be set up with very specific terms and clauses in order to avoid conflicts when interpreting the contract (Luo, 2002). As it is practically impossible to foresee every possible future contingency, contractual contingency adaptability should include clear principles and procedures on how to best manage potential future contingencies (Stipanowich, 1998). This in turn relies on high degrees of programmability of tasks and behaviours and the measurability of outcomes ex-ante

(Das and Teng, 2001). Taking into consideration the complexity and uncertainty of long-term relationships, partnering organizations are often not able to decompose tasks and procedures for all possible future contingencies (Gulati and Singh, 1998), hence leaving potential gaps in the contract. Contract incompleteness can also stem from bounded knowledge of contracting parties and cost constraints in drafting contractual governance (Blumberg, 2001; Poppo and Zenger, 2002). In contrast to contractual governance mechanisms, relational governance mechanisms are based on trust, commitment and social capital between partnering organisations (Bachmann and Inkpen, 2011; Child and Möllering, 2003). Here, future contingencies are addressed by flexibility and increased information sharing procedures between partnering organisations (Zaheer and Harris, 2006). Relational governance mechanisms often rely on partnering organisations having “*greater levels of confidence in the predictability of each other’s actions*” (Gulati and Singh, 1998: 790). However, establishing and nurturing relational governance mechanisms in long-term inter-organizational relationships can be time- and cost-consuming (Bachmann, 2001; Larson, 1992).

2.1 Governance mechanisms interplay and performance implications

Extant studies do not offer a coherent picture of the relationship between both governance mechanisms (Cao and Lumineau, 2015). Some authors (e.g. Gulati, 1995; Sitkin and Roth, 1993) argue that contractual and relational governance mechanisms are substitutes, while others found empirical evidence to support the complementary nature of governance mechanisms (e.g. Das and Teng, 2001; Poppo and Zenger, 2002). The former authors argue that contracts and control replace the need for setting up and maintaining social relationships that embody informal governance mechanisms. Similarly, these authors argue that relational governance facilitates trusting relationships without incurring costs and managerial complexity associated with

contracts and control mechanisms (Adler, 2001; Ring and Van de Ven, 1994). In contrast, a substantial number of recent studies have argued for a more complementary perspective (e.g. Klein, Woolthuis, Hillbrand and Nooteboom, 2005; Zheng et al., 2008; Cao and Lumineau, 2015). These proponents argue that clearly defined contractual regulations and procedures may support long-term, trusting relationships by narrowing “*the domain and severity of risk to which an exchange is exposed and thereby encourage cooperation and trust*” (Poppo and Zenger, 2002: 708). This view is supported by Bachmann (2001), illustrating that lengthy contract negotiations and resulting detailed contracts are not necessarily be interpreted as signalling distrust, but may act as confirmation of partners’ expectations. The complementary perspective may also function in reverse as relationship continuity and ongoing cooperation supported by relational governance may drive contractual refinements. Considering contractual incompleteness, contractual mechanisms alone are considered insufficient to maintain relationships (Luo, 2002) and relational governance mechanisms may become vital in addressing contractual gaps. Prior studies have investigated the interplay of both governance mechanisms across different industries and countries, but limited research has investigated the dynamic interplay of functions and dysfunctions of both governance mechanisms and their impact on performance from. A notable exemption is the study by Faems, Janssens, Madhok and Van Looy (2008) which adopts a process perspective and sets up an integrative framework on alliance governance. Moreover, the majority of prior studies have investigated one side of the dyad, thus neglected the buyer and supplier side and potential discrepancies.

Studies of governance mechanisms affecting exchange performance have mainly considered the role of an individual governance mechanism in driving performance. For instance, findings by Vanneste and Puranam (2010) illustrate that repeated interactions can lead to learning how to contract and hence improve exchange performance. This positive relationship can be

explained by the function of contractual governance to mitigate potential opportunistic behaviour through explicit clauses and terms (Ferguson, Paulin and Bergeron, 2005). Prior studies have not yielded a coherent picture when considering the impact of both governance mechanisms on performance. While some studies (e.g. Cavusgil, Deligonul and Zhang, 2004) argue that combining both governance mechanisms is counterproductive as deploying one governance mechanism will negatively impact the other, other authors emphasise the positive impact of both governance mechanisms on performance (Poppo and Zenger, 2002). For instance, Dimitratos et al., (2009) study the types of incentive and performance monitoring schemes adopted by small-medium Greek firms seeking to collaborate with international partners. They identify distinguishable combinations of governance mechanisms with situation decision-making and outcome-orientated incentive schemes by high performers, and centralized decision-making with behaviour orientated incentives by low performers, suggesting formal and informal combinations of cooperation are associated with improved performance outcomes. This dualistic view is supported by Luo's (2002: 903) examination of joint ventures in dynamic markets who argues that the use of contracts and building cooperation are "*not substitutes but complements in relation to...performance*". This argument follows Möllering's (2005) study that positions a duality perspective which "*entails that trust and control each assume the existence of the other, refer to each other and create each other, but remain irreducible to each other*" (p284). The study draws out that trust and control do not merely co-exist, but enter a "*reflexive relationship to each other when they form the basis of positive expectations*" (Möllering, 2005: 291). In order to offer a more fine-grained analysis of the interplay of both governance mechanisms and their impact on performance in long-term relationships, the following section investigates the functions and dysfunctions of both governance mechanisms.

2.2 Governance mechanism (dys)functions

Governance mechanisms are important to function as safeguarding, coordination, learning, sensemaking and adaptation tools (e.g. Mayer and Argyres, 2004; Schepker et al., 2014; Das and Teng, 2001; Dyer and Sing, 1998; Nooteboom, 2002). The safeguarding, coordination and planning functions of contractual governance mechanisms are characterised as means to restrain or direct behaviour and the cognition function to support learning and knowledge acquisition (Vlaar et al., 2007). Conventional methods in governance such as centralised command and control are traditionally facilitated by contracts to enable organisations to work together and build competitive advantage through common objectives (e.g. Giannoccaro and Pontrandolfo, 2004). Relational governance mechanisms can help to safeguard and coordinate inter-organisational relationships by, for instance, establishing trust between partnering organisations. Prior studies argue that coordinating and governing the inter-organisational relationship through relational governance mechanisms may lead to open communication, information sharing, increased flexibility to address conflicts and reduced uncertainty (e.g. Gulati, 1995; Bachmann, 2001; Das and Teng, 2001). Coordination through both governance mechanisms forces partnering organisations to consider the decomposition of task and alignment of activities to reduce impact of individual biases and judgement errors.

Both contractual and relational governance mechanisms can be positioned to clarify roles and responsibilities at the outset and throughout the relationship (Zheng et al., 2008). While contractual governance mechanisms mainly offer a written document that specifies roles and responsibilities of partnering organizations, relational governance mechanisms through increased information sharing may help to specify and clarify these roles and responsibilities. Contractual governance mechanisms help to codify knowledge (through terms, clauses and specifications) and encourage positive behaviour by setting penalties to disincentive negative behaviour (Vlaar

et al., 2007). The inclusion of cognition emphasizes the importance of contractual governance as a means by which organizations learn through multilevel sense-making and acquire knowledge from scanning the environment (Brown and Collins, 1987). Forcing organisations and individuals to reflect, induce collective learning and cope with ambiguity are key to the governance of inter-organizational relationships (Cannon-Bowers and Salas, 2001; Mayer and Argyres, 2004). Contractual covers dimensions of management control based on product price, assignment of rights, after sales service and legal recourse (Macneil, 1980; Anderson and Decker, 2005). However, potential impediments such as exploitation or coordination failure threaten to derail even the most well intentioned efforts at control (Malhotra and Lumineau, 2011). Exploitation is covered in the opportunistic behaviours displayed by highly motivated organizations driven by self-interest to seek advantage from weaknesses such as incomplete contract design or intellectual property rights (Williamson, 1975; 1996). Coordination failure can stem from a variety of sources and are further pronounced when uncertainty, complexity and the duration of the transaction increases (Ring and Van de Ven, 1994). In contrast, relational governance mechanisms based on mutual understanding and collaborative relationships may reduce uncertainties in relationships and offer a disincentive towards negative behaviours through building up inter-organizational trust (Luhmann, 1979; Inkpen and Currall, 2004).

Apart from the various functions of both governance mechanisms, some extant studies have also positioned a few governance mechanisms dysfunctions. For instance, contractual governance mechanisms may lead to more “*cumbersome, overregulated and impersonal processes*” (Beck and Kieser, 2003: 794). These processes in turn may hinder creativity and flexibility because of over-regulated and prescriptive procedures (Lusch and Brown, 1996; Weber and Mayer, 2011). Prior studies also pointed towards the negative effect of incomplete contracts, leading to conflicts and disagreements between partnering organizations when

interpreting the contract (e.g. Bernheim and Whinston, 1998; Baiman and Rajan, 2002). Similarly, prior studies have positioned dysfunctions for informal governance mechanisms, arguing that they may lead to ‘cognitive lock-in’ and ‘relational inertia’, thus potentially causing organizations to honour obligations which may conflict with the pursuit of self-interest and risk avoidance (e.g. Gulati, 1995; Leenders and Gabbay, 1999). Other studies draw out the potential ‘loss of objectivity’, sub-optimal information search and poor decision making, leading to missed market opportunities such as new technology innovations (Uzzi, 1997; Grayson and Ambler, 1999; Anderson and Jap, 2005).

Prior studies have not yet adopted a process view on the interplay of functions and dysfunctions of both governance mechanisms, which further informs extant governance interplay literature. The interplay of governance mechanisms functions and dysfunctions over time goes beyond merely discussing whether formal and informal governance mechanisms act as substitutes or complements (e.g. Poppo and Zenger, 2002; Lumineau and Henderson, 2012), but offering a more holistic and comprehensive picture of governance mechanisms interplay and their performance implications. In addition, this study also addresses the lack of investigating governance mechanisms from a dyadic relationship perspective. In other words, what might appear to be a complementary relationship at one point in time and from one party’s perspective may be a substitutional relationship at other points in time, and from the view of the other partnering organization. Hence this study investigates both governance mechanisms at a more fine-grained level of analysis by exploring the interplay of functions and dysfunctions of both governance mechanisms over time from a dyadic relationship perspective. In doing so, this study addresses recent calls for offering a more detailed analysis of governance interplay (Cao and Lumineau, 2015). We deploy a longitudinal and in-depth multiple case study approach by

exploring functions and dysfunctions of both governance mechanisms from a buyer-supplier relationship (Van de Ven and Poole, 2005).

3. Method

In order to grasp the temporal and complexity aspects of governance mechanisms interplay between functions, dysfunctions and performance, a longitudinal multiple case study approach was adopted (Langley, 1999; Berends et al., 2011; Canato et al., 2013). Multiple case study methods were chosen, being appropriate for examining poorly understood phenomena (Yin, 1994) and where research is used to probe deeply into processes by collecting data of complex and ambiguous real-time and retrospective interpretations of events and organizational contexts (Langley, 1999; Drori and Honig, 2013). The purpose of these case studies is not to depict the frequency of occurrence of a specific phenomenon, but to highlight cases of theoretical and practical importance (Stuart et al., 2002). As a first step, a chronological study of all major classes of warship platform was undertaken from 1970 to 2010 before two long-term relationships involving new platforms (i.e. new versions of specific types of warship, such as a patrol ship, destroyer or aircraft carrier) were selected for further examination. The empirical context of the study was informed by two discrete case studies of UK naval platform construction and support informed by 40 semi-structured interviews with senior managers and military personnel, which included 6 site visits. Two of the authors had the rare opportunity to be granted access to rich primary and secondary datasets by following the cases over an extended period of time aided by visits to the Defense Equipment & Supply headquarters in Bristol, and Portsmouth naval dockyard.

Each relationship was investigated during the commissioning process (i.e. design, build, launch, and sea trials) and ongoing maintenance and support of Royal Navy (RN) warships.

These relationships include processes, activities and actions unfolding over time and to include key events such as the transition in Western defense circles from conventional, large-scale and publically owned to a more efficiency focused and privatised operation which affected all armed forces (i.e. land, sea and air) and their equipment acquisition from the early 1980s on. The sampling logic for both cases follows Pettigrew's (1990) suggestion to select polar types, resulting in the platforms for a small patrol ship and large warship being selected for investigation. The new patrol ship was generally regarded as a successful public-private sector venture in terms of achieving a high performance outcome by delivering a high number of days per year that each ship was available to go sea, the large warship project was not successful, delivering around half the expected days. The cases were purposefully sampled as long-term inter-organisational relationships, often complex with frequent interactions between the parties and offering more opportunities to observe and investigate the concepts under examination (Eisenhardt, 1989). The cases are linked in that they both follow the introduction of new procurement policy in the UK defense sector termed Contracting for Availability which focuses on performance outcomes such as actual sea-going availability and through-life ship support capability, as opposed to previous wisdom based on supplier responsibility ending at delivery of the product (MoD, 2005). Crucially it is the same contractor, anonymised here for reasons of commercial confidentiality that is involved in both cases, presenting a unique opportunity to observe the interplay of governance functions/dysfunctions and their performance implications.

Rich primary and secondary datasets were collected by following both inter-organisational relationships between the Ministry of Defence (MoD) and a global defence manufacturer 'Contractor A' over time. After investigating the wider environmental changes to defense, we examined two such relationships involving both organizations spanning 8 years each in their development: a patrol ship (1997-2005) and a large capital warship (2003-2011). The last

six years of the warship case were investigated while being a ‘live’ development with data collected as the relationship was ongoing. The fieldwork involved 40 interviews (between 60 to 120 minutes) with key stakeholders including naval personnel (e.g. Captain, Commander) and civilian contractors, ranging from senior managers (e.g. Managing Director, Chief Engineer) to technical specialists (e.g. Support Manager, Engineer). We ensured diversity of interviewees from partnering organisations who had knowledge of the relationships under analysis, different organisational hierarchy levels and across the relationship’s history, following recommendations by Berends et al., (2011). The findings narrative was also supported by rich data from our site visits and a myriad of secondary data. This helped to address validity and reliability problems and to overcome the bias introduced by any respondents’ memory lapse or distortion (Eisenhardt and Graebner, 2007). A typical interview commenced with questions regarding the interviewee and organisational background. Interviewees were asked to talk about platform capabilities, performance, coordination, contractual arrangements, trusting relationships and the defence environment.

4. Findings

4.1 Case background

Successive defense reviews and procurement initiatives in the UK over the past 30 years suggest a rising awareness of the need for naval ships and their support organizations to improve performance of frontline services whilst mitigating costs (Nott, 1981; SDR, 1998; Croft et al., 2001; MoD 2005). Warship platforms up to the 1980s were constructed to a build standard that today would be considered as over engineered, with unique specifications for almost every component and fitting supplied to the Royal Navy (RN Commander, 2009). In terms of external governance structure, the Admiralty headquarters in London has traditionally provided strategic

leadership across all naval operations, with the Ministry of Defense acting as the prime procurer of equipment and support. Both are public departments of the government who liaise with the defence committee at Westminster, with the MoD responsible for selecting key partners in industry. The widespread privatisation of shipyards in the 1980s such as Davenport, Faslane and Rosyth signalled the first move towards large-scale economization, with the private sector holding greater responsibility for support infrastructure and government retaining ownership of ships. The introduction of new ideas in maritime defence such as through-life capability meant a shift from contractor responsibilities ending after built-to-print, towards “*much more intrusive relationships*” involving the MoD buying capability not just equipment (MoD Procurement, 2006). There was a realisation by senior policy makers that a “*significant move must be made to make warships cheaper*” (RN Commander, 2009).

The transformation of inter-organizational relationships in defence towards smarter, more efficient working practices began in the early 1990s with the MoD seeking to engage more closely with industry and spreading the cost and risk of new equipment programmes (Sanderson, 2009). Two publications: Defense Industrial Strategy and Defense Technology Strategy (MoD, 2005: 2006), highlighted the importance of adopting a through-life asset approach as a means of moving away from short-term fiscal management of ship, aircraft and tank maintenance by local military units. Maverick spending practices in the past had resulted in budget overruns by private contractors employed on cost-plus contractual terms, conducting routine maintenance work on equipment which was often wasteful and sometimes unjustifiable (Croft et al., 2001). The subsequent wave of public-private initiatives served as a wake-up call to the armed forces and their logistical support agencies over spending habits and introduced the idea of outcome driven capability management (SDR, 1998; Ng et al., 2009). Such thinking emphasised the connection between joint decisions made at procurement and the initial design stage, with support services

delivered jointly throughout the platform's lifetime (Baines et al., 2009). The summary of contract type by naval platform (Table 2 in Appendix) illustrates a shift away from traditional support contracts based on simple costs incurred, towards more commercial, lease-style arrangements where a standard price is agreed up-front. Ultimately the combination of repeated policy interventions and defence procurement initiatives was "*intended to shape the behaviour of all those involved in acquisition*" (MoD, 2006: 2).

4.2 Patrol ship (1997 – 2005)

The first case examines the functions and dysfunctions of both governance mechanisms of the early, mid and late phases during the replacement of an ageing coastal patrol vessel with a new patrol ship built for the MoD by Contractor A. Contractor A is a large British multinational defense, security and aerospace company seeking to expand its portfolio into maritime defence. The case provides an early illustration of contracting for logistical support as public policy shifted from arms-length working practices with industry to a more integrated means of joint collaboration with private firms, termed Contracting for Availability or CFA.

4.2.1 Early phase (1997-1999)

In the late 1990's the MoD had 5 ageing coastal patrol ships providing a low level of service availability. All were difficult and expensive to maintain. The ministry could get no approval from government for their replacement. During a private dinner in 1997 between the public director of shipping and a senior executive from Contractor A, it was revealed by the shipbuilder that it had a "*hole in its order book*" and wanted to replace the current ships (Contractor CFA Manager). The contractor was also eager to get involved in maintenance and repair activities to expand the business: "*we wanted to get into support.*" The contractor saw great potential for development of its maritime logistical support capability. It was proposed that three new vessels

could do the work of the original five by increasing the amount of sea-time availability. A further incentive was the offer to lease the new ships to the MoD thereby saving any upfront payment for the vessels.

The functional aspects of contractual governance are represented by the clear aims of the MoD who wanted responsibility for service support to be devolved to private industry. Recognition by the MoD that a significant shift in public policy had to be made to make ships cheaper was reinforced by their new contracting policy which included a transformational staircase model and private ship leasing mechanism. The model illustrated the progressive levels of capability expected from contractors who wished to work in maritime defence support logistics, even in relatively small projects such as the patrol ship. The CFA initiative originated from government civil servants inspired by Defence Industrial Strategy to leverage more private sector capability (MoD, 2005). Responsibility for providing warship support services such as stores, engineering training and IT systems was to be devolved from being run by the military to industry. Conceived as an aid for contractors, the MoD's staircase model started with traditional support, through holding spare parts, to contracting for availability and finally contracting for capability as the highest level of service. Although public-private collaboration on the new patrol ship required a fully binding contract prepared by marine lawyers, increasing emphasis was being placed on partnering principles with industry (MoD, 2005). The proposed joint working agreement meant the MoD engaged with Contractor A at operational and managerial level between the two organisations. Together with a 'no blame and no surprises' policy, the approach was to focus on a new performance based payments scheme using key indicators to gauge actual levels of service and encourage continuous improvement.

In the early phase of the project, relations between the ministry and contractor were mutually explorative and aspirational. CFA was intended as an opportunity for the MoD to

remove bureaucracy in its organization, free up resources and improve communications with industry. Contractor A perceived the MoD's predicament as "*having no money*" and proposed a radical solution to provide new ships with "*no colossal outlay*" (Contractor CFA Manager). Using a novel leasing concept an agreement was reached between the contractor and MoD for the provision of a complete package that included design, construction and long-term support.

4.2.2 Mid phase (1999-2003)

Dysfunctional aspects of relational governance began to emerge in 1999, where despite being presented with a unique solution by the contractor, the MoD still insisted on putting the contract out to tender: "*we didn't want one systems integrator dominating*" (MoD Procurement Senior Manager). This apparent reversal away from the proposed new behaviour effectively delayed the patrol ship by several years, which in turn "*burnt a bit of the relationship*" (Contractor CFA Manager). Decisions in the past made by the MoD over procurement of naval equipment on ships had lacked innovation e.g. focused on price, and meant the ministry had developed a reputation for short-termism. The older design of coastal patrol ship still in service was having an effect on new repair practices, because contractors felt they were cheap and had been "*procured with no thought as to how [they were] to be maintained in the future*" (MoD Commander). The only way to resolve such issues was to expedite the problem using the new contracts as best as possible with the MoD providing direct support to the contractor until the new ships were fully commissioned into service.

The commissioning process of the new patrol ship after it was built in 2001 was a complex combination of contractual control and watershed events. It led to the MoD's new department of Defence Equipment & Supply adopting more integrative and less rigidly defined working patterns. "*We transferred significant risk to the supplier. I can see no other way than CFA of realising this level of capability...you can cut away whole chunks of bureaucracy*" (MoD

Manager). However, several dysfunctional aspects of relational governance emerged from the relationship as the CFA contract began to be implemented. One issue stemmed from deep-rooted beliefs based on past experience by the contractor that the MoD's procurement process was fundamentally bureaucratic. A legacy of conservatism towards contracting existed in the tiers of the public organization, which meant some senior defence personnel lacked a sense of vision or innovation. For example, the response by one government minister on hearing of the idea to adopt lease style contracts for the patrol ship was that it was "*novel and contentious*" (Contractor CFA Manager). Furthermore, the adoption of the new CFA working practices did not fully resolve historic poor design and defective construction issues on earlier ships. Even when the new patrol ships were commissioned, the cost implications of holding expensive inventory items such as engines was passed on by the MoD to the contractor. Hence, the first year of operations under the new CFA support contract was "*very painful...with arguments*" (Contractor Engineering Support Manager, *ibid*). Engineers from the contractor were trying to expedite outstanding defects on the ship with copies of the contract fastened to their clipboards. The logic of partnering had not been sufficiently defined early in the agreement, resulting in the initial operating period being "*a nightmare*". Conflicting understanding over the means of CFA implementation was creating intense and difficult interactions between the two organizations during the mid-phase of the project. Dysfunctional behaviours including arguments had begun to emerge as a result of initial tendering delays and deeply held beliefs particularly on behalf of the contractor based on past experiences of working with the MoD.

4.2.3 Late phase (2003-2005)

As the new patrol ship entered its second year of operation under CFA, more formal roles and responsibilities became defined in an internal policy document distributed to the project team. The creation of an integrated project team was an initiative introduced by the MoD several years

previously as an attempt to bring all relevant stakeholders together from the public and private sector to manage projects more effectively ‘from cradle to grave’ (Moore and Antill, 2001: 179). The CFA policy described the expected behaviours from both organisations during their participation on the project (e.g. ‘no surprises’) and as a means to maximise teamwork. The MoD decided to increase the emphasis on partnering principles to improve the CFA commissioning and support process. Appropriate behaviour from all personnel on the project team was now being presented in terms of supporting “*mutual benefit, openness and trust, exchange of information and ongoing innovation*” (MoD, 2005). During this later phase, when the joint team came up against obstacles, they tried where possible to develop a standard procedure alongside the contract through “*...trial[ing] it, learn the lessons, and record it by introducing it into the contract*” (Contractor Engineering Support Manager, *ibid*). In other words, by working together as partners rather than traditional buyer and supplier, they used the contract as a means to frame problem solving such as in the development of revised metrics. Over time, the challenge of supporting the patrol ships became one of “*putting the contract to one side*”. A dichotomy emerged where, whilst recognising an agreement had to be reached between the two organizations, trying to adhere too closely to the contract was obstructive particularly for the contractor trying to deliver on the new working practices.

Learning the new ways of working meant it took 18 months for the contractor’s engineers to stop old habits such as expediting, and put the contract aside to consult more widely with others on the project team. At times, the contractor’s personnel could “*see no other way*” to transfer risk from the MoD to the private sector (Contractor CFA Manager, 2009), suggesting limited awareness over how to explore other opportunities or the capability to create alternative options. Although the adoption of the leasing mechanism heralded the start of more flexible working practices between the public and private organization, CFA did not suit older ships

already in service, particularly those with obsolescent or faulty equipment that required constant support. Given the outcome of implementing CFA meant high levels (i.e. around 95%) of sea going availability for the patrol ship, both the MoD and contractor considered the new method of logistical support to be successful. The second case now examines the same contractor embarking on a similar logistics support programme several years later, but involving a significantly larger warship.

4.3 Large warship (2003 – 2011)

This second case illustrates the first large warship of its type to be built for several decades in the UK. Almost 5 times the size of the patrol ship and to be equipped with the latest electronic ship safety, navigation and missile guidance systems, the first steel was cut by the shipyard in 2003. The proposed construction and support mechanism was “*a very bold initiative*” that adopted the policy of Contractor Logistics Support (CLS), a new version of CFA, where the contractor also takes control of performance of the ship’s on-board systems (Commander RN, 2009). As one of the largest defence manufacturers in the UK, Contractor A had won the contract to design and build the new warship on the basis of its past performance with the patrol ship. Although the warship’s support contract had not yet been fully agreed with the MoD, favourable performance during construction meant continuation with the existing contractor a reasonable assumption.

4.3.1 Early phase (2003-2006)

The plan by the MoD was to incentivise the contractor to design and build a class of vessel that was truly cost effective in supporting through-life maintenance over long periods (i.e. 3-5 years) using a fully integrated support solution from the outset. Despite concerns by some senior MoD personnel who did not want any one firm “*dominating*”, Contractor A was again selected as the prime contractor for the warship (MoD Procurement Senior Manager). This addition to the

MoD's list of capital programmes represented "*another go at in-service support*" although on a significantly larger scale of vessel than anything attempted in the past (MoD Commander, 2009). The functional aspects of the project at the time are illustrated by the attempts to reform existing structures and policy mechanisms for sharing tasks and collectively identifying the challenges in order to bring together personnel from the public and private sector (e.g. integrated project teams). The adoption of recognised doctrines such as CFA, and latterly CLS, also helped in the early phase to steer the long-term support objectives of the warship project forward. A deliberately bold approach by the MoD towards outsourcing provision of support, despite other public departments being nervous, meant the contractor was encouraged to develop its own costs and milestones as the project unfolded.

The approach by the MoD was to develop a doctrine of outsourcing logistical support to private contractors with fewer but higher value contracts being awarded to industry as part of the new policy towards "*prime contracting*" (MoD Procurement Senior Manager). Admiralty naval headquarters in London also agreed to the idea of a private contractor defining costs and milestones, despite being "*nervous...that such as innovative support solution might not be able to deliver 24/7 support especially in a conflict zone*" (Contractor Support Manager). When building of the first warship was nearly completed, the MoD controversially tried to withdraw the support contract, effectively reneging on an initial agreement with Contractor A because of escalating costs during construction. The contractor argued successfully that it should not only retain the build contract but also deliver the ship's support as planned. Given the level of investment by both organizations it was agreed to continue with the project in their existing roles.

Despite the period of contractual uncertainty, the early phase of the warship is characterised by ambitious and bold plans for the privately lead support programme, meaning Contractor A to deliver core elements of the ship's infrastructure and systems such as the hull,

superstructure, weapons management and navigation technology. This practice was heralded at the time as resulting in “*closer relationships with both the MoD and subcontractors*” (Contractor Senior Manager, *ibid*). Adopting more responsibility over the extended life of the warship meant Contractor A increasingly saw itself as brokering relationships with more specialist suppliers and encouraging learning through higher levels of interaction where “*relationships are key.*” The reality of the situation, however, emerged as somewhat different in the mid and late phases, as described below.

4.3.2 Mid phase (2006-2009)

When the true scale of the task facing the warship CLS team became apparent, formal coordination mechanisms (i.e. the contract) were relaxed and a more flexible approach was adopted by the contractor. Skills had to be learned from first principle in order to achieve any progress with integrating the warship’s new systems: “*the support team should have started with a larger pool of people*” (Contractor Support Manager). After the launch in 2006 and during initial sea trials, further difficulties began to emerge over quoting for the vessel’s support costs for a year, much less the 3-5 year period as originally specified by the MoD. Expected performance was not being met on the new warship, due in part to the high levels achieved previously on the patrol ship. The sheer size and complexity of the new warship was a major factor in the difficulties over predicting logistical support needs, despite a decade of public programmes following smart acquisition, supplier partnerships and project team initiatives (Moore and Antill, 2001). Moreover, although involved in other military support projects, Contractor A had no formal cross-over mechanisms for sharing experiences between other relevant sea, land or air force support teams. During the now much extended trial period, the contractor’s engineers on board the warship began to understand there were “*no shortcuts...we*

had to apply a lot more rigor with people tweaking systems for 6-12 months until [they] reached maturity” (Contractor Support Manager).

The engineers responsible for delivering core elements of the support programme now realised there was “*a massive load of learning*” needed to try to complete the contract (Support Manager). Senior managers from the contractor also began to understand the importance of “*more planning for big platforms...more strategic, less tactical thinking*” which indicates the significance of vessel size in relation to potential effects on support performance (Senior Support Manager, *ibid*). The contractor began to feel that public sector structures were to blame, where “*everything the MoD does is vertically driven...by department or platform.*”

Contractor A was selected to deliver the ship and support programme based on past performance, suggesting some measure of predictability on behalf of the MoD regarding organizational behaviour. Despite major concerns in the mid-phase over rising costs and delays to schedule, the relationship was now sufficiently established for the two organizations to negotiate and eventually agree with the contractor retaining control of the support contract, despite current difficulties. A level of understanding between MoD and contractor had been reached as indicated by the comments of one manager describing the steps taken trying to resolve a dispute between the organisations during the protracted development period: “*the contract is there, but if we run to it all the time that’s failure*” (Contractor CLS Manager).

4.3.3 Late phase (2009-2011)

By 2009 the warship was semi-operational and capable of going to sea for short periods. However it was falling further behind in the commissioning-support process involving on-board systems trials, with ‘available days’ running at only around 50 per cent. The contractor was forced to apply a corrective action approach rather than work on planned procedures. Contractor A’s managers were surprised at the shortness of the allotted ship systems trial periods provided

by the MoD. Hence the original vision of the warship as a model for platform based through-life support failed, because “*it was too hard to define the requirement sufficiently such that it could be contracted against*” (Support Manager, 2011). Dysfunctional aspects of relational governance began to re-emerge, where despite agreement from the MoD to continue with the project, there was indecision on the part of other public sector departments (e.g. Fleet headquarters, London) on the level of responsibility to be assumed by the contractor. This in turn reinforced the overall view of the vertically-driven nature of the MoD by the contractor, indicating a sense of cumbersome and overregulated public sector processes. The MoD’s policy on preferred sovereignty status or UK manufactured equipment, for example, became increasingly impractical to implement because of the legacy of industrial decline across the country. In reality, the dependence on overseas suppliers meant the programme was prone to further logistical delay, meaning the warship’s original planning and implementation was inadequate.

Despite involvement in several high value defence contracts and numerous initiatives around smart procurement and collaborative partnerships with the MoD, the contractor was inconsistent in its working policy in terms of how it worked with other suppliers. Although an official policy existed of ‘no surprises’ and ‘mutual benefit’, Contractor A’s approach to smaller, specialist suppliers appeared to remain more traditional in terms of a short-term and transactional focus: “*sub-contractors don’t get paid...if they don’t deliver!*” (Contractor CLS Manager, *ibid*). The contractor also became suspicious of public sector methods of administration: “*MoD procurement is always simplistic and over-arching*”. In its view, the new style of high-performance contracts required more scope for customization by the private support team than was actually being provided. On the other hand, the MoD view of the project was to “*get private firms to be more flexible and manage their suppliers [as] core capabilities...a core element of this is turning engineers into programme managers*” (MoD Senior Procurement Manager).

Concerning its behaviour during the warship support project, the contractor admits that where private firms were expected to lead in future, further learning and development was required. “*We’ve been behind the curve in procurement engineering capability...we don’t have the headroom right now*” (Contractor Support Manager). Hence, the late phase of the warship is characterised by poor performance and increasingly entrenched positions by both organizations. The contractor assigns the problem in part to the contract, sub-contractors and MoD policy, whilst acknowledging its own lack of learning capability. The MoD argues the contractor should go beyond core engineering skills in future and learn better programme management.

5. Discussion

The starting point for this study was the limitation of extant research in taking the complexity of governance functions and dysfunctions from a dyadic relationship perspective into account, and studying the dynamic interplay and impacts on exchange performance.

5.1 Governance interplay and performance implications

This first section addresses RQ1: How does the interplay of formal and informal governance mechanisms impact on performance over time? Adopting a dyadic relationship perspective, we find where both organizations do not always agree on the use of governance mechanisms, the result is a negative impact on performance. For example, in the patrol ship case, the relationship starts well in terms of the behaviours and aspirations of both organizations. However, by mid-phase, there are conflicting interactions when the MoD decides to formally put out to tender the leasing contract which Contractor A had spent considerable time helping to develop. Despite recognising the issues caused by lack of public money and the need to economise on all defense fronts at the time, the collaborative relationship between MoD procurement and the contractor

was badly affected, and the new project effectively put on hold for several years as the MoD decided to follow standard procedure. In reverting to formal governance mechanisms and putting the contract out to tender with competitor firms, the MoD jeopardised the goodwill it had accumulated with Contractor A and the opportunity to develop the new CFA initiative. The warship case also illustrates how buyer-supplier disagreement negatively affects performance where, from the mid-phase on, the CLS project specifications on how to support the new warship's on-board systems are over-ambitious, resulting in a failure to meet objectives and an increasing mismatch of views between the MoD and contractor. Although by now the relationship between the two organizations has matured, with the MoD agreeing to be more flexible over its contractual mechanisms while the contractor attempts to apply its resources in an effort to restore the project, performance does not recover. By the late phase, contractual difficulties remain unresolved and relations have become polarized, with both organizations holding differing views as to the cause.

Our findings show that if both governance mechanisms are used together over time, this increases performance. In the patrol ship case for example, the aspirations developed by a clear policy agenda and close cooperation of the contractor across multiple phases ends in the project's performance objectives being realized. Here, responsibilities and behaviours are both clearly defined for project participants, not just through CFA contracting, but by joint information sharing behaviours across the project team. Further, the relationship becomes sufficiently developed between the public and private organizations that the contract can be overlooked on occasion in order to tackle particularly difficult issues. Recognition of the limitations of the contract by both organizations, as well as the benefits of when it is appropriate adopt more informal mechanisms, such as having dinner between senior executives, demonstrates how the combined use of governance mechanisms increases performance.

The investigation also reveals how the contractor learnt over time. Looking across both cases, we see how Contractor A adapts its approach to support-based contracting and how it applies CFA/CLS policy as presented by the MoD to the two projects. For example, in the mid phase of the patrol ship case the contract is initially perceived in a stand-alone, itemised format which can be systemically “*expedited*” to gain the desired result. This view shifts over time to a more holistic sense of performance, where remaining obstacles are overcome by the contractor learning to “*put...the contract to one side*”. In the warship case, the contractor again acknowledges that in difficult situations “*running to the contract*” is not always the best solution, where it is resources, people and better strategic planning that are required. Realisation by the contractor that the warship support project was more about “*massive...learning*” rather than contractual compliance, however, came too late to ultimately save it from failing. The MoD’s view that despite the engineering prowess of the contractor it needed to develop into areas such as programme management, which chimes with the general mismatch in perspectives at the end of the project. Although the contractor learnt to work with the public policy and procedures of the MoD, relations with its own sub-contractors evidently required further work in their approach to partnership.

The findings illustrate considerable conflicts and disagreement in the use of governance mechanisms across both partnering organizations. For example, early collaboration on the patrol ship was considerably enabled by informal mechanisms, where both the public and private organization were able to discuss the current economic challenges facing the defence industry and how new methods of ship leasing would mean no capital outlay for the public buyer. Hence the decision by the MoD to adopt formal procedure and put out to tender the result of these negotiations was seen by the contractor as a form of betrayal which “*burnt a bit of the relationship*”. This switching by MoD procurement from informal to formal mechanisms, under

the guise of following standard public procurement procedures, is repeated again in the warship case when the contractor is deemed to have underperformed during construction and as a consequence the support contract is considered for open tender. Despite the assumption it was collaborating with the MoD on a novel support initiative where performance fluctuations over time were likely, Contractor A unexpectedly found itself having to justify its future role on the project. This is surprising, and suggests a ‘darker side’ to the relationship (Grayson and Ambler, 1999; Anderson and Jap, 2005), because despite desiring radical solutions from the private sector to provide cost reductions, the MoD still appeared to apply formal principles of traditional market economics by claiming “*we didn’t want one systems integrator dominating*”. Conflict over the use of governance mechanisms also occurs elsewhere. The first year of patrol ship operations under the new support contract, for example, sees the contractor adopting a formal mechanism whereby the contract was introduced and arbitrarily enforced through expediting before the new ship was ready. This was before the MoD decided to introduce formal roles and responsibilities to the project team. As a result, the mid-phase is described in terms of a nightmare of “*painful...arguments*” where public sector risk was transferred too quickly to the contractor. The final and most striking disagreement over governance mechanisms occurs in the late phase of the warship case. Having realised that the original support objectives will not be met and the warship contract’s work schedule was “*too hard*” the contractor accuses MoD procurement of being both “*simplistic and overarching*” as well as “*cumbersome and over-regulated*” in its policy and process. While the MoD acknowledges the project’s shortcomings overall, it specifically emphasises the significance of the mechanisms which govern performance, such as greater flexibility and the importance of “*turning engineers into programme managers*”.

Our findings show that when adopting a dyadic relationship perspective regarding governance mechanisms use, the governance mechanisms interplay discussion can be refined. In

other words, in the poor performing warship case, we observed that while one organization emphasised the use of contractual governance mechanisms, the other emphasised the use of informal relational governance (e.g. building up relationships) in combination with more specific contract terms. These changes can be particularly observed across the MoD-contractor relationship in the mid and late phase of the project. This adds to prior studies as they mainly studied the interplay of governance mechanisms from one perspective (e.g. the buyer's perspective, in: Poppo and Zenger, 2002). From the findings above, we have observed governance asymmetries and their negative impact on performance. However, it is the successful patrol ship case that illustrates the more complementary nature of both governance mechanisms, which drives performance across multiple relationship phases.

Considering the formal and informal governance mechanisms in the cases, there is evidence of an increased awareness across the two organizations over the role relationships and past experiences can play in the information exchange process of delivering performance-driven contracts. Although small in scale, the patrol ship project was successfully conceived to address the needs and capabilities of public and private sector organizations, leading to CFA contracting being applied. Yet an ambitious second project involving a warship which was meant to build on the success of the first failed, with defined timescales and costs for support not being met. Although the contractor appeared frustrated with the legacy structure and processes of the MoD, there was also a growing maturity shown by the organization over recognizing the limitations of working to the new contract on such a scale of ship. While passing greater responsibility to the private sector represented considerable risk on the part of the MoD, the contractor learnt to apply a more flexible approach to how their managers reacted to situations and using resources more effectively when faced with serious engineering management challenges.

5.2 Interplay of governance functions and dysfunctions over time

This section addresses RQ2: How do governance mechanisms' (dys)functions substitute or complement each other over time? In the patrol ship case, the prevalence of formal functions such as coordination, control and planning matches the high level of informal communication and information sharing between the two organizations in the early phase of the relationship. As the project progresses however, the opposite becomes true, where dysfunctional formal and informal behaviours emerge as a result of the MoD deciding to put the contract out to tender and then experiences difficulties over implementation. Examples of dysfunction occur between the two organizations in terms of the MoD's limited awareness (Uzzi, 1997) over aspects such as what impact transferring risk (i.e. ship support) to the private sector would have on the project. Senior MoD procurement managers miss the market opportunity (Granovetter, 1985) of working with the contractor on the patrol ship project altogether labelling it as "*contentious*". The difficult mid-phase in the case is dominated by the prescribed process by which the support contract, at the first attempt, is so crudely expedited (e.g. fastened to clipboards) by the contractor. In the late phase, more functional behaviour is restored to the project as formal measures of coordination and control (e.g. project team, new policy) are complimented with collective learning by both organizations, using the contract to frame problem solving. Dysfunctional informal behaviour however is now displayed by the contractor, whose tendency towards ingrained habits, limited awareness or cognitive lock-in (Gulati, 1995) regarding alternative practices (e.g. "*could see no other way*") is mirrored by unsubstantiated beliefs that the MoD may revert to a more traditional focus around short-term support costs.

In the warship case, the interplay between functions and dysfunctions over the relationship again starts with relatively high formal and informal functional governance mechanisms. For example, the contractor is encouraged to develop its own measures and

milestones at the outset of the project, and seeks to develop a “*close relationship*” with the MoD by building on the previous ship support project. Similar to the patrol ship, the warship’s mid-phase displays a dip in performance, although this is mitigated by the early realisation of the situation’s severity by the contractor, both formally in terms of the perils of running to the contract, as well as informally that there were “*no shortcuts*” to maturity and where considerable learning by the team was needed in order to recover. Where both cases differ markedly is the outcome in the late phase of the projects. The second case scores low performance both in formal contractual governance and informal relational governance mechanisms. Formal dysfunctions emerged in the inability to coordinate or plan the project due to contract incompleteness (Macneil 1980) e.g. “*it was too hard to define the requirement*”. Informal dysfunctions emerged in terms of the contractor not honouring obligations to others (Uzzi, 1997; Gulati, 1995) i.e. “*sub-contractors don’t get paid if they don’t deliver*” which they themselves would not have accepted as appropriate behaviour if treated by the MoD in a similar manner. Finally, because of the increase in scale of ship to support, some of the formal mechanisms put in place by the MoD to enable the patrol ship project (e.g. defined roles, procedures, procurement policy) ultimately worked against the delivery of the warship’s support, because they were simply considered ‘too cumbersome’ (Beck and Kieser, 2003) by the contractor given the specific task in hand.

Hence, although there are similarities in the patterns of (dys)functions of both governance mechanisms, the degree of performance failure of the warship case suggests combining or complementing functions such as coordination and control with informal communication and information sharing is insufficient for the management of complex projects over extended periods. Both cases point to the significance of addressing the rise of dysfunctions early on, particularly given their tendency to emerge in the mid-phase which then overshadows and threatens the project. The role of learning in such projects, both collective in terms of cross-

functional teams as well as inside the organization, may extend opportunities for productive collaboration between organizations as well enable future development in capability maturity. From the above, we argue therefore that contractual governance functions such as coordination, planning and control substitute functions in relational governance mechanisms, while dysfunctional governance tends to dominate the relationship until or if a resolution to the problem is found. Functions such as learning span across both governance mechanisms and complement each other. Ultimately, our findings show that it is the governance interplay of (dys)functions that drive performance implications.

Returning to the UK defense sector, our study also suggest that while contracts with support requirements planned from the outset using leasing and profit sharing agreements provide an opportunity for improving project performance, public-private relations are constantly challenged by tensions around upkeep of industry infrastructure, revised government policy and the acquisition of new technology (Prins and Salisbury, 2008). Dysfunction also arises where private contractors are expected to run previously state-owned facilities (Rankin, 2013) and retain state-of-the-art levels of system knowhow, while interfacing with multiple agencies who require rapid switching capability from peace-keeping to war (MoD, 2005). Public departments such as Defense Equipment & Supply are also under pressure following the revelation they may be outsourced by government after several high profile programme failures and increasing demands for their consolidation, delivered alongside performance improvements in technology readiness and platform availability (Gray, 2009; NAO, 2011). Considering both cases, our research contextualizes these challenges in governance facing the defence maritime sector by going beyond popular claims of “*shrinking resources and relentless demands*” (Blackham and Prins, 2007: 10) and examining the implications for complex performance (Willet, 2009; Caldwell and Howard, 2011). We include as part our future research agenda, therefore, the extent to which

function and dysfunction arises from long-term industrial commitments which also addresses rising costs, technology churn, and the effects of an increasingly uncertain socio-political environment.

5.3 Research limitations

This study focused on the primary inter-organisational relationship to offer a more fine-grained perspective on governance interplay. Further research should explore the impact of the wider network on the focal inter-organisational relationship and governance mechanism interplay. For instance, how do key stakeholders influence the use and interplay of both governance mechanisms? And, are certain functions and dysfunctions emphasised by the wider stakeholder network? Moreover, while these long-term relationships provided an ideal setting for investigating key concepts over time, further research should investigate functions and dysfunctions and their interplay in short-term relationships and on an inter-personal and team level. The key constructs would benefit from further research exploring different institutional contexts including other sectors and countries, such as emerging economies where contracts and trust may play a different role and assume different functions.

6. Conclusion

This paper explores not just the roles of formal and informal governance mechanisms, but the dynamic interplay of functions and dysfunctions over time in the context of complex inter-organizational relationships (Guérard et al., 2013; Cao and Lumineau, 2015). We argue although formalization is important when managing long-term relationships such as defence projects, organizations should not just learn to contract or build up trusting relations, but consider both together in terms of the effect such interplay has on overall performance.

The practical implications for managing government procurement contracts are also raised here. Government cost-cutting is often cited as the reason that defence contracts are outsourced and government agencies rely more on private suppliers to deliver outcome-based support solutions (e.g. Mahoney et al., 2009). Such thinking shifts programme management and associated responsibilities squarely onto the shoulders of contractors to the extent they must consider long-term skilling and capacity issues in addition to core engineering and equipment support. The increasing dependency on the private sector and the potential for negotiation around mitigating circumstances (e.g. agreements over securing future contracts) begs questions around the enforcement of contracts in an increasingly limited market of capable suppliers. It is possible that outsourcing to the private sector has reached its limit in the UK defence sector and a greater proportion of monitoring, regulation, governance policy and control is retained by government and government buyers in future. Finally, given the recent policy of outsourcing risk to contractors, further investigation into the effect of public regulation on private industry is needed. Given the outcome of the latest ventures, the future of UK defence now rests on an effective government lead on industrial policy, able to both devolve power and engage more closely over time with private sector organizations.

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