

**Complex Adaptive Systems and Interorganisational Relationships: An  
Exploration of the Australian Residential Home Loan Industry**

**Jim Rooney**

# **Complex Adaptive Systems and Interorganisational Relationships: An Exploration of the Australian Residential Home Loan Industry**

## **Abstract**

This paper explores the evolution of management control mechanisms associated with an outsourcing business relationship. Adopting the control problem framework of Caglio & Ditillo (2008) and the control mechanisms described by Dekker (2004), it explores the dynamics of interorganisational control, seeking a deeper understanding of the emergence of control problems and the interaction with control design and the environment in which the relationship is sited. In particular, we seek understanding of system characteristics that identify the fundamental dynamic nature of such a relationship. Following Thrane (2007), we build on a systems perspective of interorganisational relationships that goes beyond the static view prevalent in the accounting literature. Thus, consistent with recent supply chain literature, we adopt a Complex Adaptive Systems perspective. In particular, we search for the existence of path dependency within three case studies examined using a mixed methods approach. Overall, the paper provides empirical evidence of alternate pathways for evolution of management control. Inter alia, we gain a more nuanced understanding the interaction between management control problems and control evolution within such relationships. In particular, we provide insights on how controls co-evolve with the business environment within which exchange partners operate. Finally, we provide guidance for future exploration of the systems nature of interorganisational relationships.

## 1. Introduction

*“The field of complex systems must direct its ‘flight from wonder’ towards discoveries that ‘make the wonderful and complex understandable and simple’.”*

Miller & Page (2007: 4)

This paper seeks to extend recent accounting literature exploring the evolution of management control patterns in response to the emergence of control problems within interorganisational relationships. In particular, two material gaps identified in the extant accounting literature will be examined; namely, limited understanding of the processes that lead to change in the design of management control (v. d. Meer-Kooistra & Scapens, 2008); and limited understanding of the roles and influence of different actors and influences on the control problem-control design dynamic (Schneider & Somer, 2006, Thrane, 2007).

The focus of prior literature on management controls in interorganisational relationships has been on developing control archetypes and relationships of contingency between characteristics of the transaction environment and management controls. To date, however, findings are inconclusive if not contradictory (Caglio & Ditillo, 2008), suggesting that the richness of the underlying empirical phenomena is yet to be adequately uncovered. Further, the relationship between transaction environment and controls is often seen as static and linear (Caglio, 2008) and calls exist to examine the “dynamic relationships between variables over time” (Dekker, 2008, p.938). Adding to the complexity of the domain, management controls have been found to change not only in response to inter-organisational factors but also to intra-organisational influences (for example, Mouritsen et al., 2001; Cuganesan, 2006).

Consequently, and as a point of departure from much of the prior literature focused on static explanations of control design, this paper takes a lead from Thrane (2007) in the accounting literature and recent work in the supply chain literature (Li et al, 2009) to examine

management control in interorganisational relationships from a systems perspective. This is considered useful in seeking to examine a dynamic concept of control that encompasses relations of reciprocity between accounting, the interorganisational relationship and the (external and internal) organisational environments of relationship partners. In particular, it will examine evidence for a complex adaptive system perspective as summarised in Schneider & Somers (2006) in order to identify degree to which Complexity Theory applies to the interorganisational context. Using this approach, we aim to address the issues with the current accounting and contingency literature outlined above.

Adoption of a CAS approach also responds to calls in the supply chain and management control literature to address the complex range of problems faced by managers in such interfirm relationships (Choi & Krause, 2006; Li et al, 2009; Caglio & Ditillo, 2008). Finally, it is consistent with Chenhall (2003), being a means of addressing concerns about model underspecification, a common criticism of contingency-based models, including open systems.

Accordingly, this paper has two key objectives located within research on the dynamics of management control within interorganisational relationships. The first objective is to explore the evolution of control mechanisms during the post-contractual phase of an outsourcing relationship. The intent is to investigate such phenomena at the level of Buyer-Supplier agent interaction, incorporating the immediate environment in which the control mechanisms operate. The second objective is to seek explanations for the existence of multiple control designs. The intent is to examine emergent control mix in order to determine path dependencies (Thrane, 2007) in response to emerging control problems and changes to the interorganisational environment.

By taking into account the perspectives of actors, including the environment in which firms and individuals operate, this paper aims to make two key contributions to the interorganisational management control literature. Firstly, building on prior work on

transaction characteristics highlighted in Anderson & Dekker (2005); Reuer, Arino & Mellwigt (2006); and Dekker (2004, 2008), the paper provides improved understanding of the dynamics of **control problem emergence and management control evolution** based on the interaction of actors within an interorganisational collaboration. Secondly, in analysing control problems and the co-evolution of control mechanisms and the interorganisational business environment, this paper is able to explore the **systems nature of interorganisational relationships**. This includes examining aspects of **emergence, co-evolution and path dependence** in control design (Gerdin & Greve, 2008).

Summarising the remainder of this paper, the next section provides an outline of the relevant academic literature in areas of interest to the research questions listed above. The third section of the paper describes the research method utilised, with results obtained presented in the fourth section. Discussion and implications of the findings as well as limitations and suggested future research are contained in the final section of the paper.

## **2. Complexity, Management Control and Path Dependence**

### **2.1 Interorganisational relationships and management control**

Consistent with organisational (Schneider & Somers, 2006) and supply chain (Holweg & Pil, 2008) literature, amongst others focused on such arrangements, management control research has recognised the need to explore the form of interorganisational relationships. In particular, it has focused on explicating the alignment or fit between control and transaction attributes (for a detailed review see Caglio & Ditillo, 2008). Despite the extensiveness of this literature, there has been mixed progress to date, characterised as an "inconclusiveness [that] is even more severe if we consider that the findings proposed by contributors are in some cases contradictory." (Caglio & Ditillo, 2008: 874). More broadly, empirical research on management control has been observed as producing "unclear findings and conflicting results" (Sandelin, 2008: 325). This is suggestive that relations between transaction environment and

attributes and control are more complex than has been described to date. Supporting this, other research has sought to identify the intraorganisational influences that operate along interorganisational exchange factors in influencing management control (for example, Mouritsen et al., 2001; Cuganesan, 2006).

Perhaps in recognition of this complexity, more recent studies have begun to adopt alternative perspectives to uncover the richness of interorganisational management control. Sandelin (2008) for example examines for possibilities of equifinality in management control configuration while Thrane (2007:256) attempts to introduce “a more complex system understanding [that] views the system as being in continual flux and change”. Overall however, the literature is deficient in that there is limited insight of the interplay between emergent interorganisational relationship problems and the evolution control design (Caglio & Ditillo, 2008: 867) and, more specifically, the processes that lead to change in the design of management controls (v. d. Meer-Kooistra & Scapens, 2008).

Building on the nascent systems research in accounting, this paper will initially focus on links between control problems and resultant solutions, an subject of keen interest in the interorganisational literature. The management control problem typology described in Caglio & Ditillo (2008) is used to examine the emergence of control problems. Accordingly, the three interorganisational problem constructs addressed are labelled as cooperation, coordination and appropriation. To explore the evolution of management control, the control mechanisms described in Dekker (2004) is adopted. As identified in Caglio & Ditillo (2008) this control typology is non-deterministic and does not denote ideal types.<sup>1</sup> Both control problem and types have been broadly identified with techniques described in the management accounting or organisation literature. For example, accounting concepts (e.g. budgets, standard operating procedures) in the case of formal controls (Dekker, 2008) and constructs from sociology or

---

<sup>1</sup> In addition, Dekker (2004) is broadly cited in the interorganisational literature and is broadly consistent with a number of recent control typology such as Malmi & Brown (2008).

organisation literature (e.g. trust, embeddedness, organizational norms) in the case of informal controls (Dekker, 2008). Given that the typology and mechanisms are detailed in Caglio & Ditillo (2008) and Dekker (2004) respectively, this paper will not describe them in detail here.

To adequately explore the dynamics associated with the emergency of control problems and the interplay with evolving control design, a framework that recognises the complexity and dynamism of interactions within an interorganisational relationship is required (Thrane, 2007). As mentioned in the Introduction, we explore interfirm relationships using a CAS perspective. This focus will allow a more detailed examination of the emergence of patterns associated with the co-evolution of control mechanisms and environment over time (Holweg & Pil, 2008). An overview of this perspective and, in particular, their resultant mapping of control changes are outlined in the next two subsections.

## **2.2 A Complex Adaptive Systems Perspective on Interorganisational Relationships**

Consistent with recent supply chain literature (Li et al, 2009), this paper also explores the domain of the interorganisational alliance based on the recognition of its properties as a Complex Adaptive System (CAS). Li et al (2009) suggest that recognition of the systems nature of supply networks is based on the need to understand the complex and evolving interplay between its internal mechanisms and the environment within which it operates. Thus, based on terminology in Boulding (1956) as cited by Thrane (2007), we emphasise four key differences from the static models favoured in the accounting literature. These key differences are the presence of a multi-centred contestable and value-based interorganisational space; a focus on context-driven patterns of change; porous organisational boundaries affected by ongoing interactions between actors (including the environment); and the emergent nature of control. Examination of these aspects is required in order to achieve the research aims listed in the Introduction section of this paper.

As the unit of analysis for this paper, outsourcing relationships are a form of supply network in terms of value creation based on substantive knowledge flows. As such, they involve interaction between the three generally accepted CAS foci of internal mechanism, external environment and co-evolution (Choi et al, 2001). Within these elements, the presence of meaningful agents, the emergence of structured collective behaviour and an operating environment that includes intrafirm as well as industry or market mechanisms qualifies the research sites explored in this paper within an accepted form of a CAS (Surana et al, 2005).

Recognition of system disruption or perturbation in the sense defined by Thrane (2007) is based on acceptance by both entities in an interorganisational relationship that a control problem conforming to the Caglio & Ditillo (2008) has emerged and the perturbation is recognised by focal actors in the interorganisational relationship as an underlying cause. A perturbation requires evolution of a control mechanism to mitigate its impact or a decision to allow a new state to emerge. Two sources of system perturbations are explored. The first source is in the form of management control problems identified using the problem typology described in Caglio & Ditillo (2008). The second source is germane to the environment in which the interorganisational relationship operates. Inter alia, seeks a greater understanding of alternate paths of control design developed in response to the emergence of these problems. Perturbations that do not appear to conform to this typology will be the subject of further exploration or a candidate for follow-up research. This approach is consistent with Caglio & Ditillo (2008), given their recognition that explanations of observed behaviour provided by the theories driving their typology “may be incomplete” (Ibid: 892).

Consistent with Thrane (2007), performance metrics are not analysed in this paper. Given that all three case studies achieved agreed cost levels for the duration of our analysis period and the exploratory nature of this analysis, we focus on resolution of control problems as a high level surrogate for successful interorganisational performance. This approach also applies to the performance of individual firms within the relationship, recognising that the nature of complex

systems may blur the boundaries between firms, making separation of intra- and interorganisational performance unproductive (Thrane & Hald, 2006).

To be consistent with a CAS perspective (Li et al, 2009), the interorganisational system explored in this paper would need to demonstrate the emergence of more than one system state in resolving emerging control problems, emphasising a holistic epistemology associated with general systems theory (von Bertalanffy, 1950). Such a result would support a self-organising rather than deterministic mode of enquiry, with the prospect of multiple context-specific system states. In addition, the presence of non-cyclical disruption and the emergence of change due to positive rather than exclusively negative interaction between firms would provide tentative evidence for the CAS perspective of interorganisational relationships, within the limitations of this paper described later. Differentiation based on these properties is consistent with the approach in Schneider & Somers (2006), adapted from Katz & Kahn (1978).

The next section summarises the scope of the research approach adopted in this paper.

### **3. Research and Sites**

Given the exploratory nature of this paper, a field study approach was adopted. The case studies reported in this paper comprise three separate outsourcing arrangements within the Australian residential home loan industry. Each of the focal buyer firms is a separate business unit with its own legal entity and Board, established as a profit centre within a larger financial services group.

This industry is a significant component of the banking sector, which, in turn, plays a vital role in the Australian economy (Euromonitor, 2003). The industry is also significant as it has a relatively rich history of utilising outsourced service providers. Residential home loans are an intermediate good, comprising the obtaining of a loan approval by individual customers and subsequent access

to funds as required to purchase residential real estate. Whilst description of the industry and its characteristics is beyond the scope of this paper, it is important to note that all three interorganisational arrangements were niche players in a highly concentrated industry where the top four institutions have consistently accounted for more than 65% market share, reaching more than 90% for most of the past half century (as it is currently the wake of the Global Financial Crisis). The niche common to all three cases is the potential customers with no or impaired credit history, traditionally ignored or rejected by the dominant institutions. Examples of the type of customer included self-employed workers engaged on a contract basis (I.T. professionals being an example of this type of customer, emerging in greater numbers in the decades leading to the beginning of the 21<sup>st</sup> Century). Other examples include first time borrowers with no previous customer history with home lending institutions and those with a prior history of credit card or personal loan credit default.

The unit of analysis for the purposes of this paper is the outsourcing relationship incorporating both the outsource buyer and supplier. The scope of these arrangements comprise business processes that are associated with lead generation and conversion including capture of home loan application details; for supporting home loan application acceptance, credit decisions and the advancing of funds to the borrower; and, for maintenance and support of an existing home loan (ranging from inquiries on loan balance and changing loan details such as the postal address for documentation through to requests for loan increases and discharging the loan). These arrangements commenced in the early part of the 2000 decade with one currently ongoing (Case Study C) and the other two terminated by 2006.

Case selection was on the basis of known characteristics indicating a potentially fruitful research site for the examination of control problems and how controls were used in response. While this approach results in a research site that ostensibly 'fits' the study' objectives, a by-product is one of limited access. Thus we are reliant on the accuracy and completeness of participants who were present at the time.

The selected cases also have similarities with two prior case studies conducted in a complex interorganisational relationship. Thrane (2007) examined a Danish consulting network and compare the dynamics of the network over a two year period. Sandelin (2009) examines a growth firm in the telecommunications industry across two time periods. Whilst there are similarities between the case studies (e.g. significant business growth for a small to medium size firm, product development as a conflicting functional demand), key differences of interest is the relative lack of direct influence of environment in Sandelin (2008) and the limited range of system perturbations. On balance, the similarities allow comparison between the studies to be of value, a topic addressed in the Discussion section of this paper.

Multiple research methods were utilised (Birnberg et al., 1990). First, document coding<sup>2</sup> was conducted on outsourcing contracts, governance meeting minutes and related performance reports associated with the relationships such as service reporting, service complaints tracking and one-off service issue escalation documentation. Document coding is an instrument to measure comparative positions and trends in the composition of documents and has been used extensively to assess reporting patterns and disclosures (as per Guthrie et al, 2004). It focuses on the semantic content of key documents (such as Outsourcing Agreements used to articulate the intent and governance of such arrangements) in order to derive inferences and/or gain understanding or draw conclusions from such documents.

Documents were analysed in terms of the extent to which they contained material evidencing changes in management controls. Management control categories were drawn from a review of the literature and comprised the following types:

- **Behaviour Controls** – Controls directed at guiding behaviour, excluding changes to contract terms associated with these items (Dekker, 2004);

---

<sup>2</sup> Based on the approach described by Krippendorff (1980)..

- **Outcome Controls** – Quantitative measures, standards and feedback processes, excluding changes to contract terms associated with these items (Dekker, 2004);
- **Socio-ideological Controls** – “Management control practices targeting minds, through norms, emotions, beliefs and values, are intended to affect behaviour indirectly.” (Alvesson & Karreman, 2004: 425; see also Dekker 2004 on social controls);
- **Contract Controls** – Clauses included in the design and modification to the terms of the outsourcing contract developed and formally agreed by both parties. Such controls “include formal rules, procedures and policies to safeguard, monitor and reward desirable performance that .. are codified in a contractual arrangement” (Vosselman & v. d. Meer-Kooistra, 2008: 3);
- **Market Controls** – Use of market alternatives to guide behaviour including credible threats of substitution with alternate suppliers for part/all of in-scope services.

The second method comprised interviews conducted with personnel at the respective buyer and supplier firms who were involved at both service delivery and relationship management levels. Interviews trace through events over the life of the relationship. The focus of interviewee’s recall was factors that influenced the success or otherwise of the relationship, how these changed during the course of the relationship and how each party responded to these changes during the relationship. A summary of coding analysis and interviews conducted is listed in the Appendix.

The next section presents the results of the case study.

## **4. Results**

### **4.1 Case Study A**

#### **4.1.1 Background to the Case - control at the commencement of the relationship**

The outsource buyer firm (hereafter referred to as Buyer A) is a start-up specialist consumer home loan lender, part of larger financial institution operating in the Australian market established in the first half of the 2000s decade. It engaged in a deliberate strategy of outsourcing “non-core” operational functions such as home loan application processing and Information Technology (IT), avoiding the required investment in operations staff, systems and the development of operational processes as a consequence. Given Buyer A was a start-up firm, a strategy of outsourcing was seen as leading to lower cost than if the activities were vertically integrated within the firm. This strategy did not change for the duration of Case Study A.

The focal interorganisational relationship is between a small to medium-sized specialized home loan lender (Buyer A) and a medium size focal (or lead) supplier (hereafter, referred to as Supplier A). In addition, a second tier supply network (Choi & Krause, 2006) provided selected operational sub-functions (namely, third party sales, property valuation/appraisal and legal documentation). These relationships although visible to Buyer A, were new to it, being existing contractual arrangements established earlier by Supplier A in supporting other buyers.

Selection of the outsource service provider did not involve a formal tendering process. Instead, the CEO and a board member with significant industry experience utilized home loan industry contacts in a search for potential outsourcing partners. Competitive cost, avoidance of investment expenditure by the buyer, “organisational cultural fit” and proven track record were key functional demands and, as a result, the key selection criteria. A series of discussions over a three to six month period, allowed negotiations to commence with Supplier A being seen as the closest fit of the potential suppliers evaluated. Negotiations focused on agreement to the scope of services outsourced as well as contractual terms such as duration and legal jurisdiction. The

negotiation process took three months, the main objective being finalisation of an outsourcing agreement to support the known needs of Buyer A as it entered the home loan market.

The outsourcing contract was simple in terms of scope and size. Coding shows that approximately one quarter of the clauses on the original agreement related to the collection and maintenance of operational records; a quarter related to governance in the form of reporting and independent audit; and approximately a fifth relate to compliance responsibilities. As only 3% of clauses reference service levels, enforcement of SLAs was not a key consideration in the initial phase of the interorganisational relationship in Case Study A. This lack of interest in contractual KPIs appears to be the result of a deliberate decision. There was a general view by Buyer A management that such formal measures were open to manipulation and unlikely to capture the dimensions of control considered important to them.

The closest the contract came to discussing service levels is to intimate the need for “reasonable” response, as indicated in the following original contract clause:

*“Each Servicer must perform its Servicing Functions in respect of the Mortgage Loan in accordance with this agreement and each Trust Document to which it is a party; and the standard which would be expected from an appropriately qualified, prudent and responsible servicer providing services of the type that Servicer is providing in respect of assets of a similar type to the Mortgage Loans.”*

Table 1 below summarises the coding analysis conducted on the original Agreement.

<b>Keyword Categories</b>	<b>Category Descriptors</b>	<b>Case Study A (# of clauses)</b>	<b>Case Study A (% of clauses)</b>
<b>Appointment</b>	Collection of Monies	1	3.8%
	Reconciliation	2	7.7%
	Records	7	26.9%
<b>Termination</b>	Termination Events	1	3.8%
	Material Clauses	0	0.0%
<b>Governance</b>	Reporting	3	11.5%
	Escalation	1	3.8%
	Reviews/ Audits	3	11.5%
<b>Responsibilities</b>	Compliance	5	19.2%
	Materiality	1	3.8%
<b>Service Levels</b>	Response Times	1	3.8%
	Errors		
	Tolerances		
	Penalties	0	0.0%
<b>Fees &amp; Charges</b>	Throughput/ Volumes	0	0.0%
	Set Off	1	3.8%
<b>Total</b>		<b>26</b>	

Table 1 – Summary of coding analysis of initial outsourcing agreement applicable to the Case Study A.

#### **4.1.2 Early indications of cooperation and task coordination problems**

In this period, business volume started to grow, along with the third party sales network being established by Buyer A. These trends are evidenced in a selected internal business reporting sourced from Supplier A as well as governance meeting documents created in the second year of the relationship. Two examples illustrate the extent of this growth. Firstly, using KPIs reports created by Supplier A but not shared with Buyer A, the number of new applications processed per month increased by 100% in the second half of the first year of the relationship. Secondly, another example of internal KPIs reporting sourced from Supplier A showing the number of

existing loan customer calls to the centralised call centre shows a 60% increase in calls received within a six month period (Figure 1 below).

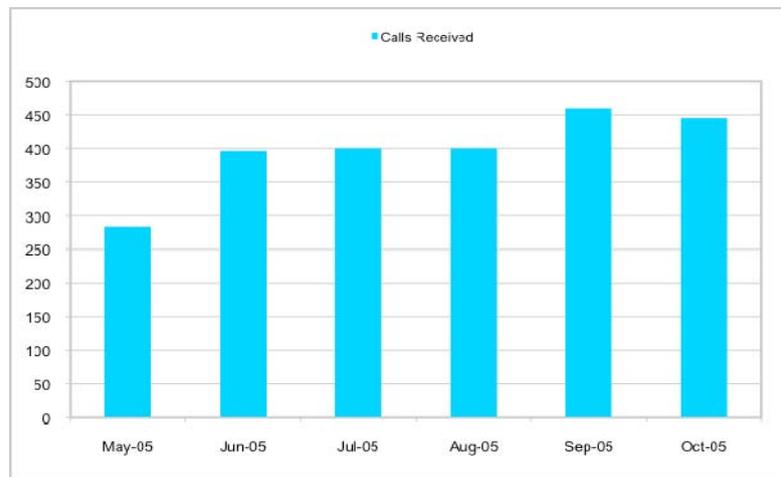


Figure 1: Example of internal use KPIs from Supplier A illustrating growth in volume.

Even allowing for the start-up nature of the Buyer A entity, business growth was significant, reflecting a measure of success in achieving Buyer A's strategy of exploiting gap in the residential home loan market at the time. In comparison, annualised industry growth at the same time was between 10% and 15%. Coinciding with this growth, a material change in perceptions of the required level of service delivery quality and timeliness had evolved over time. This perception and its consequences is explored in the following paragraphs and is encapsulated in the statement by the Buyer A Relationship Manager:

*“There was a high gap in expectations ..”*

Continuing from the first year of the interorganisational relationship, Buyer A developed additional product features and range not anticipated in the original contract, with a resultant increase in process complexity. Growing process complexity coincided with the increasing recognition of the need to address flaws in the governance process. In particular, the timeliness and effectiveness of communication between the focal entities were identified. Reflecting in the quality of communication Supplier A operations team leader concurs:

*“Communication has not been all that effective. Need to meet on a more regular basis, aside from emails, particularly now that there are 2 new teams actioning the settlements and servicing functions”*

Recognition of these interorganisational communication gaps was an important factor in the subsequent adoption of joint analysis activities to address control problems emerging in the second year of the relationship. From a Supplier A perspective, indications of the potential for these emerging problems was partly evidenced in Buyer A correspondence signalling increasing numbers of requests for additional Supplier A systems development support.

Examples of control problems identified in this period included errors in non-automated calculation of loan discharge payouts, recording of loan details and with data provided to Buyer A treasury staff.

It is worth noting that performance measures were not developed and shared at an interorganisational level as part of any control response to the ad hoc problems of this period. Given the precedents outlined above, additional control problems continued to emerge early in the second year, as discussed below.

#### **4.1.3 Changes to behaviour & social-ideological controls to address emerging problems**

The majority of problems emerging in the second year resulted in changes to management control aimed at better alignment of tasks and process handoffs within the interorganisational relationship. In most cases, recognition of the problem was made by Buyer A staff with new controls evolving as the result of joint analysis involving both focal entities. Proposed solutions were reviewed and approved by both entities before implementation. An example of this interplay, in the form of cooperation and coordination problems respectively, is outlined below.

There is also evidence that some Supplier A operations staff considered Buyer A representatives to be difficult to work with. At the same time, there is evidence of Buyer A perceptions of a lack of competence as well as commitment to perceptions of the required level of service excellence associated with individual staff as seen in comments by the Buyer A manager responsible for product development:

*“These guys probably didn’t know what they were doing .. whether that’s true or not .. it also comes back to accountability”*

An example of a coordination control problem relates to the performance of a documented, in scope procedure to establish automated and regular payments for individual loans by Supplier A staff. Data entry tasks associated with this process and carried out by Supplier A operations staff had been identified as being incomplete resulting service delivery problems recognised in the form of missed loan repayments by Buyer A customers and the subsequent need to initiate missed payment collections processes. The expectation, which was not documented in any form but considered by all parties to be reasonable, was that automatic payments would be correctly established in a timely manner for all loans. Remediation activities included joint analysis effort to establish the reason for missed payments followed by the implementation of new hindsight checking and review procedures on a sampling basis.

Focussing on new product development, problems were identified by Buyer A representatives on the basis of perceived delays in resolution of interdependencies between Buyer A product development tasks and Supplier A systems and operational change tasks. In particular, the apparent lack of accountability of Supplier A systems and operations staff for the quality (as defined by Buyer A product development staff) and timely completion of loan product development tasks was seen as a material coordination control problem. Supplier A staff adhered to processes and timeframes internal to their firm and, in the absence of any agreement or controls to reflect differences in Buyer A needs, rarely deviated from this level of performance.

Use of socio-ideological controls was deemed by both parties to an appropriate control type given the perceived criticality of successful product development to the continued growth of Buyer A. Use of this control solution was largely driven by the increased complexity of this evolving Buyer A demand which, in turn, was shaped by a competitive business environment. Where changes to these controls are implemented, imposition of Buyer A values were clearly favoured. An example of socio-ideological control was the varied attempts by Buyer A to encourage Supplier A staff to think like a Buyer A customer in the product development process. Behaviour conforming to such norms was rewarded with forms of social approval and related non-monetary rewards. Such rewards were often delivered in person with occasional email recognition.

Ironically, it appears that a significant level of trust had been built at an operational level during the middle phase of the relationship as a result of improved communication. This had been developed as a direct consequence of joint problem resolution and increased use of social controls. However, in spite of this increased trust, the outsourcing arrangement was terminated. The final state of this relation (i.e. termination), as well as a summary of the evolution of management control mechanisms is described below.

#### **4.1.4 Market controls and termination of the Relationship**

Summarising the control problem/control mechanism dynamics, Figure 2 provides a timeline view showing examples of the link between control problems and evolving control mechanisms. This includes socio-ideological controls used in response to cooperation and coordination problems specifically associated with new product development as highlighted in section 4.1.3 above. The final relationship state is highlighted in red.

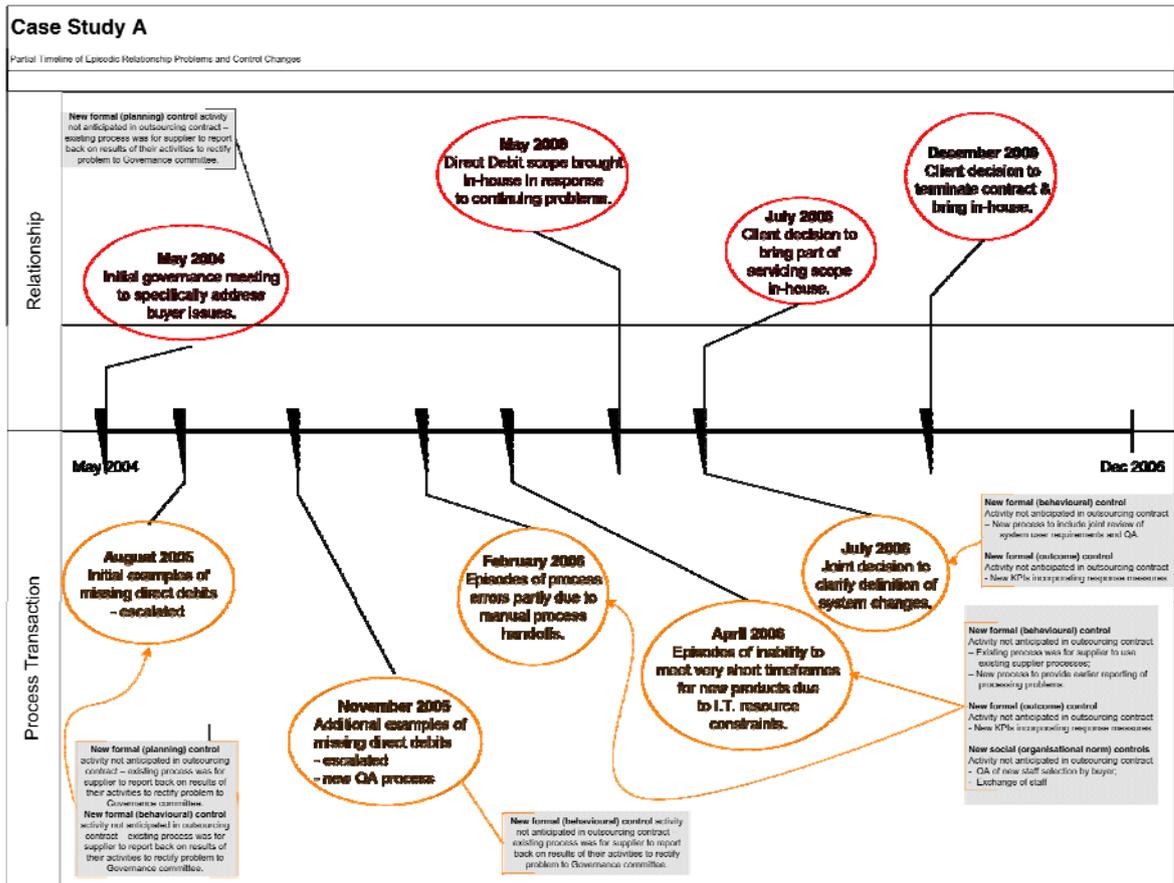


Figure 2: Key constructs and relationship problems linked to control types in Case Study A.

Prior to this decision, informal evaluation of market options by selected Buyer A management was conducted without notifying or consulting with Supplier A management that such an option was being considered. The termination clauses of the original contract were used to provide formal legal notice of Buyer A's intent and manage the relationship until the final completion of the insourcing/migration project. Action plans created to manage this migration process were within the terms of the contract and did not constitute a change to management controls. The migration was completed with minimal migration costs.

The cumulative effect of these control problems is indicated in Table 2 below. This table indicates the path dependency of control problem emergence and inadequate evolution of controls in response.

\*\*\* Insert Table 2 here \*\*\*

Table 2: Summary of interorganisational problems and control pathways (Case Study A)

This path developed as a result of repeated cooperation and coordination problems over a number of years, affecting tasks and business outcomes considered critical to Buyer A's strategic success (namely, product development). Although this demand was not recognised at the commencement of the relationship, its emergence was a key driver of growing perceptions by Buyer A management that Supplier A was not delivering the quality of response required to support continued business growth.

The emergence of this pathway eventually resulted in a belief by Buyer A management that an unreasonable proportion of relationship benefits were being appropriated by Supplier A. The perception was that whilst Supplier A continued to receive contractual payment of servicing fees, the opportunity cost of delays in new product launches and subsequent delay in business growth were being disproportionately borne by Buyer A.

## **4.2 Case Study B**

### **4.2.1 Case and management control at the commencement of the relationship**

Case Study B involves a medium-sized home loan lender (part of larger financial institution) as the focal outsourcing buyer (hereafter referred to as Buyer B) and a medium-sized focal (or lead) service provider that is "an outsourcing industry specialist" (hereafter, referred to as Supplier B). A second tier supply network of service providers listed in Appendix 3 does not appear to be a material influence on the performance of this relationship. The key driver for the initial decision to outsource was cost reduction in operations and information technology and the avoidance of investment in technology. Both firms had been operating for some years prior to the establishment of this interorganisational relationship.

The evaluation of potential outsourcing partners was accomplished using industry contacts with a selection decision made after informal evaluation of existing industry alternatives. The key selection criteria were two-fold – achievement of target reduction in processing cost; and prior outsourcing track record in the provision of outsourcing services for the targeted operational functions. Supplier B was seen as the closest match to the stated selection criteria.

Contract negotiation was completed within three months using external legal support. Whilst simple in scope, a number of clauses were contingent on future development of a comprehensive service level agreement. Table 3 summarises the coding analysis of this initial contract.

<b>Keyword Categories</b>	<b>Category Descriptors</b>	<b>Case Study B (# of clauses)</b>	<b>Case Study B (% of clauses)</b>
<b>Appointment</b>	Collection of Monies	1	1.9%
	Reconciliation	1	1.9%
	Records	1	1.9%
<b>Termination</b>	Termination Events	11	20.4%
	Material Clauses	0	0%
<b>Governance</b>	Reporting	7	13.0%
	Escalation	2	3.7%
	Reviews/ Audits	6	11.1%
<b>Responsibilities</b>	Compliance	11	20.4%
	Materiality	2	3.7%
<b>Service Levels</b>	Response Times	6	10.8%
	Errors		
	Tolerances		
	Penalties	5	9.3%
<b>Fees &amp; Charges</b>	Throughput/ Volumes	0	0%
	Set Off	1	1.9%
<b>Total</b>		<b>54</b>	

Table 3– Summary of coding analysis of initial outsourcing agreement applicable to Case Study B.

As summarised in the table above, the contract focussed on compliance (26% of clauses), service scope (19% of clauses), and governance reporting (12% of clauses). Interim, legally enforceable performance measures were included in this initial contract. An example of the KPIs and associated reporting illustrates the nature of initial contractual controls:

“For each of the following activities, the monthly self-certification statement should contain positive confirmation that standards were met in all cases or details of exceptions.”

#### **4.2.2 Coordination problems in the first year**

Material control problems were identified within the initial 12 months of the relationship. The key problem from a Buyer B perspective was failure to consistently achieve agreed interim post-contract service levels and a customer experience that is less than Buyer B expectations. It is useful to explore a specific problem associated with less than expected levels of customer experience in delivering basic loan details in response to Buyer B customer enquiries over the telephone.

This control problem was manifest in the difference between the service response associated with standard Supplier B processes and the “customer-friendly” requirement of Buyer B to include a more expansive service beyond the initial reason for the call. The focus of the “standard” Supplier B delivery standard was on providing the requested details within standard call response times documented in the initial contract as being acceptable to both parties. In this example, complaints from both loan customers and Buyer B sales staff identified delays in responding to phone calls. In spite of the lack of documented SLA, for this specific requirement this instance was identified as a control problem by Buyer B management.

The apparent lack of industry and legal compliance knowledge of Supplier A operations staff was seen as contributor to these early control problem, resulting in the introduction of subject

matter expert resources sourced from Buyer B:

*“.. Buyer B introduced .. an expert in (business) transformation .. who worked with Supplier B .. to develop (operations) .. tied back to key metrics and drive towards fact based review.”*

#### **4.2.3 Response to change in buyer outsourcing strategy and renegotiation of the relationship**

After identifying a control problem, the resultant control response typically consisted of two distinct actions initiated at a relationship level:

- Joint analysis activities attempts to discover the cause of the problem and agree solutions;
- Implementation of agreed management control mechanism to address specific problem.

The use of joint analysis activities as a significant component in the evolution of management control mechanisms was a deliberate strategy by Buyer B to help drive greater cooperation and coordination between the parties and closer alignment with more specific customer focused business strategies. These activities were never documented but became an accepted practice within the relationship:

*“We took a lot of time in developing it (and) in engagement, making sure it was right... “*

Buyer B management initially decided that the addition of specific output controls were required to address some of the recurring coordination problems and, furthermore, to ensure that their perspective on “improved customer focus” in enshrined in new performance KPIs. After approximately two years into the relationship, Buyer B was able to incorporate “more rigorous” service level reporting following comprehensive discussions on the nature of customer service required:

*“There was more strength .. around the behaviours that we were seeking.”*

As an example of these agreed KPIs, Figure 3 summarises 15 months of inbound call centre response service level (the target was 80% of inbound calls answered within 20 seconds as indicated by a red line).

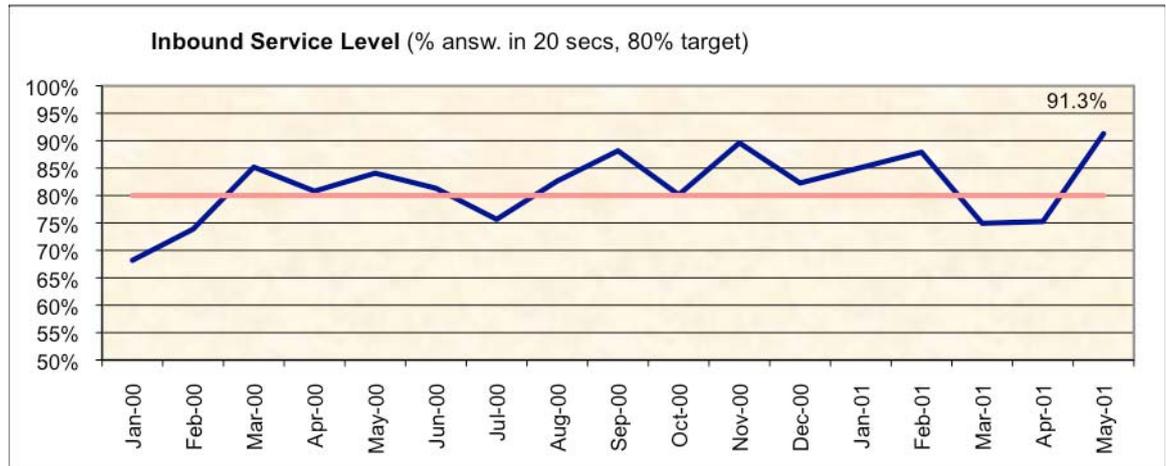


Figure 3– Example of performance metrics (call centre response service level) shared in Case Study B

In addition to specific metrics associated with achievement of service levels, some quality measures were also introduced and monitored, as illustrated by Figure 4 below, being the first week of a reporting month.

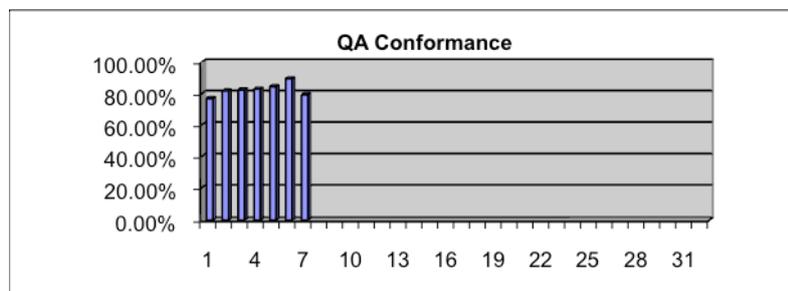


Figure 4 – Example of Quality metrics shared in Cases Study B

At about this time, there was informal recognition that Buyer B outsourcing strategy was evolving to focus on improved customer service with some willingness to trade-off

improvements in customer service for low cost delivery. This evolution was in response to changing customer requirements identified through marketing focus groups and regular customer surveys conducted by Buyer B over time. In the continued evolution of management control, Buyer B management saw the increasing use of socio-ideological controls as important to addressing problems as well as supporting greater alignment with the evolving customer-focussed outsourcing strategy:

*“We made it a point of treating the employee of Supplier B as if there were our employees. .. there’s a fine line but we thought it was very important that we didn’t have a them and us relationship.”*

As a result, there is evidence of increased levels of cooperation, particularly at a management level.

*“a strong understanding by Supplier B of what our strategy was .. and the way in which we wanted to have the interaction with our customers”*

In summary, control problems were not the key driver for the termination of this relationship. This change, in the form of a decision to insource all business functions provided by the focal supplier, is discussed below. Note that the second tier suppliers were simply novated to (ex-) Buyer B as part of the insourcing transformation activities.

#### **4.2.5 Termination of the Relationship**

As outlined in the previous section, a mix of behaviour, outcome and socio-ideological controls were implemented in response to cooperation and coordination control problems. This mix was a result of negotiation through these joint analysis activities, initially driven by Buyer B’s goal to

implement a more customer-centric service. Figure 5 below highlights typical evolution of control mechanisms. Events highlighted in green indicate positive relationship signals.

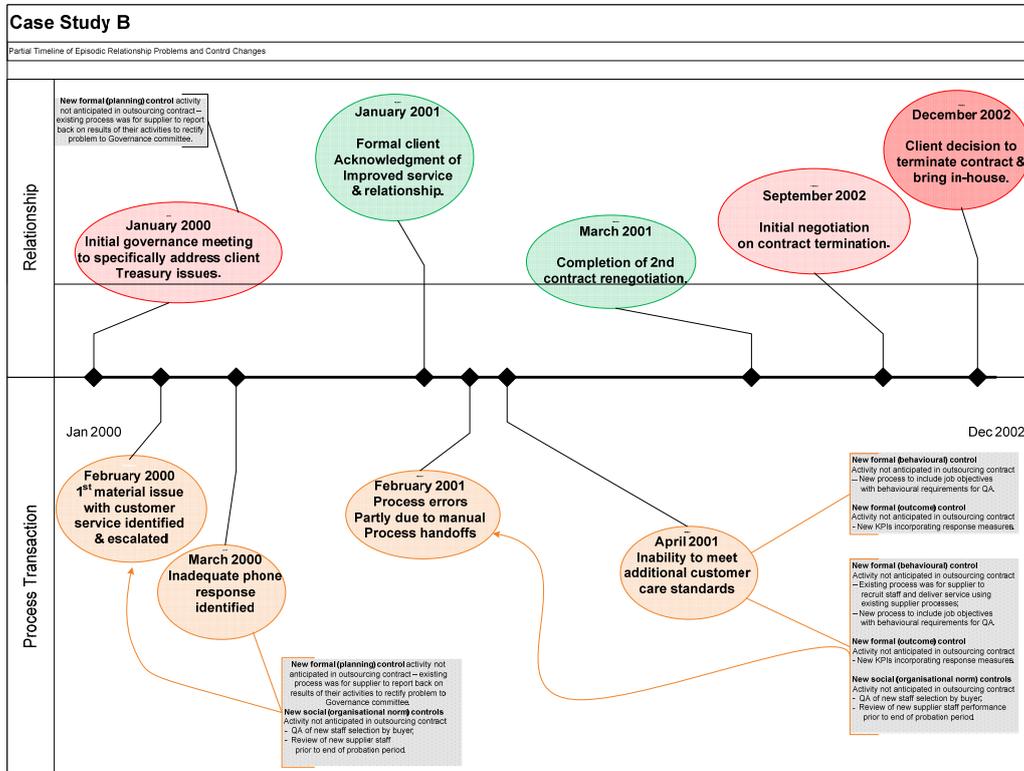


Figure 5 Key events linked with critical control changes (Case Study B).

The cumulative effect of these control problems is indicated in Table 4 below. This table indicates the path dependency of control problem emergence and inadequate evolution of controls in response. In summary, It describes key emergent influences that appear to be driving coordination problems that lead to significant evolution of management controls. In the case of Case Study B, cooperation and coordination problems were the material form driving the evolution of control mechanisms. Following a series of joint analysis activities and resultant control changes, these control problems were perceived by both focal entities as being effectively addressed.

\*\*\* Insert Table 4 here \*\*\*

Table 4: Summary of interorganisational problems and control pathways (Case Study B)

The preceding table highlights the path dependency between problems and the subsequent evolution of control mechanisms in response. The key aspects of this evolution can be explained in two phases. Firstly, starting within initial 12 months of the relationship, the emergence of cooperation and coordination problems, leading to a mix of additional behavioural, outcome and socio-ideological control mechanisms.

Secondly, whilst there was a change in selected supplier personnel and the assignment of an operations and compliance expert by Buyer B, evolution of consumer preferences for new loan products was also occurring within the residential home loan market. This prompted co-evolution of a new Buyer B functional demand on the relationship – additional product development to meet evolving market needs. Socio-ideological controls tended to be favoured, being largely in the form of organizational norms.

Finally, the cumulative effect of the evolution of effective controls in response to control problems was a mutual agreement that outsourcing objectives, evolving to be more customer focussed over time, were being met. As expressed by Case Study B Manager:

*“The only time we needed to look at the contract is when we got to that final decision  
.. to bring it back inhouse.”*

However, in spite of resolution of control problems and subsequent building of trust between the focal relationship entities, the termination of this relationship was initiated for Buyer B strategic reasons at a group rather than business unit level. It was a Buyer B group-level decision (i.e. a decision made at a higher level of authority in the Delta organisational hierarchy) to change business strategy to one of capturing the entire transactional value of service operations across the entire group and, through economies of scale, invest this captured value in technology and the further development of customer-focussed Intellectual Property specific to the group. Clauses

contained in both the original and renegotiated contracts were enacted to initial and manage the relationship termination process.

### **4.3 Case Study C**

#### **4.3.1 Background to the Case and control at the commencement of the relationship**

Case Study C involves a focal outsourcing buyer (hereafter, referred to as Buyer C) and a network of service suppliers. The focal interorganisational relationship is between Buyer C (a medium-sized home loan lender, part of larger financial institution operating in the Australian market) and a medium-sized focal (or lead) service provider that specialises in providing outsourcing services (hereafter, referred to as Supplier C). The key driver for the decision to outsource was the need to achieve of a mixture of strategic business objectives namely, reduction in operational and IT costs; the avoidance of future investment in IT infrastructure; and a recognition that home loan operations/IT were not strategic competencies for this institution. The second tier supplier network does not appear to be a material influence on the emergence of control problems or the evolution of control mechanisms.

The key buying criteria were significant reduction in operating and IT costs; commitment to future technology upgrades; and demonstrated experience in providing outsourced services for functions nominated by Buyer C. Potential focal suppliers were identified and ranked in order of lowest transaction cost. Cultural fit or, at least, compatibility was also seen as an important selection criteria and was an influence in the decision, resulting in the elimination from the evaluation process of at least one of the potential suppliers with global outsourcing experience.

Selection of the focal supplier was based on a formal tendering process managed by a representative committee consisting of Buyer C stakeholders with significant industry experience. Personal industry contacts were utilized as the basis of the initial search for potential outsourcing partners. As a result of a formal Request for Tender and subsequent evaluation over a six month period, Buyer C was able to commence negotiations with Supplier C, being selected

from a shortlist of two established outsourcing vendors. These negotiations focused on obtaining agreement on the scope and control of the services to be outsourced as well as terms of the outsourcing arrangement, including formal service level targets and penalties. The negotiation process took approximately six months, the main objective being the finalisation of an outsourcing agreement with the selected focal supplier (Supplier C).

The outsourcing contract was complex in terms of scope and size, requiring the use of external legal support. It contained a full range of contractual clauses, including detailed and legally enforceable performance measures. An indication of its range and scope is shown in the coding analysis of the original outsourcing contract summarised in Table 5 below.

<b>Keyword Categories</b>	<b>Category Descriptors</b>	<b>Case Study C (# of clauses)</b>	<b>Case Study C (% of clauses)</b>
<b>Appointment</b>	Collection of Monies	1	1.0%
	Reconciliation	2	2.0%
	Records	2	2.0%
<b>Termination</b>	Termination Events	4	5.0%
	Material Clauses	1	1.0%
<b>Governance</b>	Reporting	11	15.0%
	Escalation	9	12.0%
	Reviews/ Audits	22	30.0%
<b>Responsibilities</b>	Compliance	2	2.0%
	Materiality	0	0.0%
<b>Service Levels</b>	Response Times	15	21.0%
	Errors		
	Tolerances		
	Penalties	2	2.0%
<b>Fees &amp; Charges</b>	Throughput/ Volumes	0	0.0%
	Set Off	0	0.0%
<b>Total</b>		<b>71</b>	

Table 5 – Summary of coding analysis of initial outsourcing agreement applicable to Case Study C.

The coding results summarised in Table 5 show that approximately 25% of the original agreement addressed keyword references related to the collection and maintenance of operational records; almost 60% of clauses relate to governance of the relationship and 20% of coding references relate to service level reporting. As indicated in the above table, other clauses do not appear to be material, the following quote being an example from the initial contract:

“Where it is provided in Schedule x (Combined Services) or otherwise agreed between the parties that a particular matter is to be provided or performed within a specific timeframe or date, Supplier C shall ensure that it meets such timeframe or date (as the case may be) unless the parties agree otherwise. ”

#### **4.3.2 Early appearance of coordination problems in the first year**

There were a set of interim service levels for the initial six months of the relationship, based on a recognition that the outsource transition process takes a period of time to impact service delivery. However, at the expiry of this interim 6 month period, the contract specified more onerous performance targets that assumed to completion of a list of largely IT enhancements.

The key problems from a Buyer C perspective focused on failure by Supplier C to consistently achieve these more onerous post-contract service levels. This failure was most apparent for call centre, loan application and existing loan increase processes – an example being procedures associated with providing confirmation of application details prior to the loan application approval subprocess. An example of the performance metrics associated with the call centre function is provided in Figure 6 below.

## Transition Service Level Reporting (July 200x)

SLA Ref #	Category	Description	Required Time	Minimum Service Level Required %	Actual Service Level Achieved %								
					Nov-0x	Dec-0x	Jan-0x	Feb-0x	Mar-0x	Apr-0x	May-0x	Jun-0x	Jul-0x
2.4	Contact Centre												
2.4.1	Responsiveness	Ability to answer call in a timely manner.	20 Secs	50% to Apr; 80% from May	65.1%	61.5%	60.7%	64.3%	76.1%	67.2%	67.7%	55.5%	57.1%
2.4.2	Abandon Rate	Call Abandon Rate.	N/A	8% to Apr; 5% from May	3.6%	3.1%	3.2%	3.4%	2.0%	1.9%	2.6%	2.9%	2.7%
2.4.3	Time to Call Back	Time to Call Back after a voice message	4 Bus Hours	90%	100.0%	100.0%	100.0%	96.8%	100.0%	100.0%	100.0%	86.4%	69.8%
2.4.4	Time to Answer	Time to provide first feedback	1 Bus Days	99%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.3%	97.8%

Figure 6– Example of coordination problem (interim call centre service levels) in Case Study C

To illustrate the approach used within Case Study C to address emerging control problems, a specific problem episode is explored in the following paragraphs. This episode is associated with the appearance of less than expected levels of telephone-based service response to Buyer C customer enquiries on basic loan. To some degree, customer experience in delivering the response was also an issue. This particular example is chosen in order to compare the control problem and response pathway enacted by Buyer C with that of Buyer B, the relevant control problem being of a similar nature.

The problem was initially identified in regular governance meetings as a failure to meet call centre SLA targets. SLA reporting identified delays in responding to phone calls. The initial response to the emergence of this problem consisted of three distinct relationship level actions:

- Imposition of contractual penalties and remediation activities to address service level issue (not discussed further – did not require or result in control changes, so outside the scope of this paper);
- Joint analysis to discover the underlying causes of the problem and reduce the future risk.

- Additional processes (i.e. behavioural controls) to incorporate handoff and service escalation procedures after clarifying the scope of services required and associated responsibilities. No other types of control mechanism were utilised in resolving these problems.

This trend of emerging coordination control problem and resultant management control evolution are typical of Case Study C over the life of the relationship and is discussed below.

#### **4.3.3 A change in relationship personnel and increased use of outcome controls**

In examining the performance of Case Study C across the life of the relationship, the trend has been largely for the implementation of behaviour controls as an initial response to the emergence of control problems. This choice of controls was largely driven by the nature of the problems being at least partly caused by gaps in operational procedures not identified at the start of the relationship. In the first year of the relationship, a key relationship level response to the early appearance of control problems also involved a change in Supplier C personnel. This action was seen as a complementary response by Buyer C management to additional behavioural control mechanisms. Selected use of additional outcome controls was also seen by both parties as being complementary to the implementation of other, largely behavioural, control types given the perceived importance of adequate customer service to the continued growth and profitability of Buyer C as well as perceived ambiguities in the contractual KPIs.

Other factors played a significant part in the emergence of new control mechanisms. One of the key aspects of Case Study C was the relative perspective of key stakeholders at different roles and organisational levels, reflecting the results of deliberate efforts to work towards common service goals:

*“At a staff level there was a .. bit of those within the Buyer B organisation saying that we have one view of the world and those guys at Supplier B had another view. Towards the end, we had closed that gap ..”*

There was also recognition that Buyer C outsourcing strategy was evolving post-contract, to focus on improved customer service. However, there was very little willingness to trade-off low cost delivery for improvements in customer service. As a result, Buyer C entered into extended discussions on revised KPIs that were more customer focused towards the end of the first year post-contract. As part of these negotiations, more complex service levels were agreed based on the performance on individual components of the previous metrics. Figure 7 illustrates with an example.

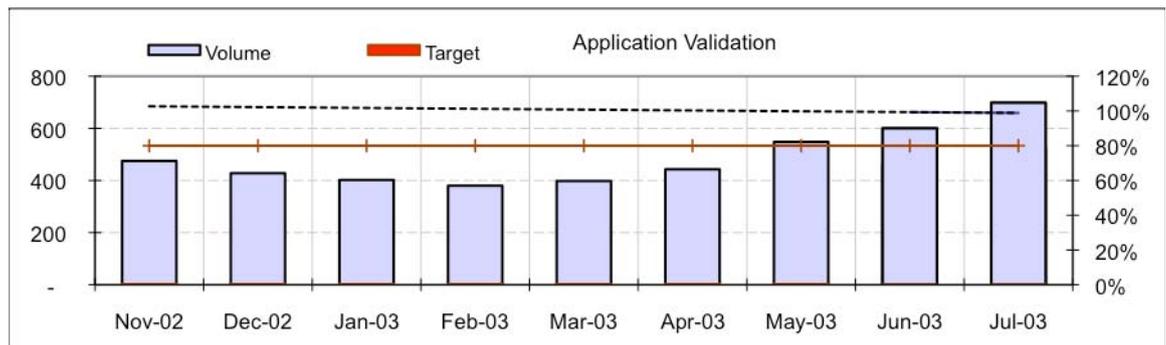


Figure 7– Example of refined performance metrics (loan application service level) shared in Case Study C

This additional metric was used to monitor the key sub-processes that form part of the overall loan application processing function supplementing the range of KPIs already developed and implemented as part of the original contract negotiation. An example of these initial higher, process-level measures is those shown in Figure 8 below, this being an example of KPIs with 8 months of loan application processing metrics (target is 70% of applications processed within 48 hours of receipt).

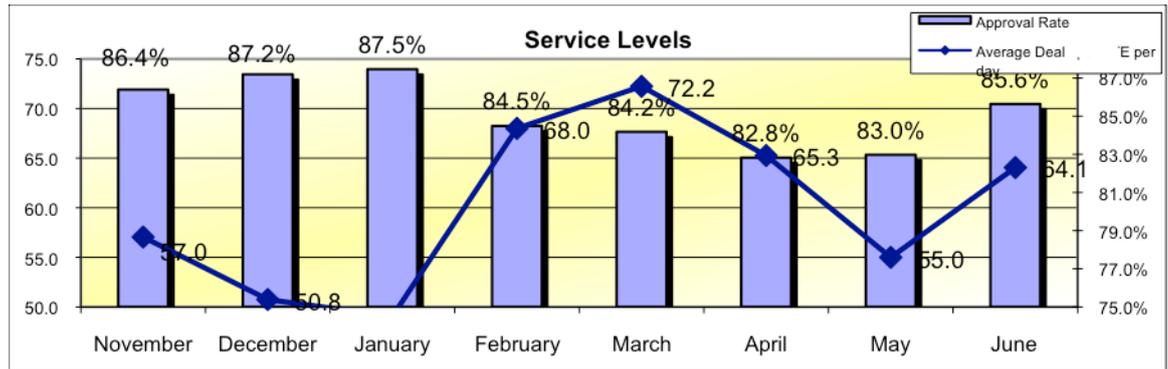


Figure 8 – Example of interim performance metrics (loan application service level) shared in Case Study C

Thus, after approximately two years into the relationship, Buyer C was able to incorporate “more rigorous” service level reporting following comprehensive discussions on the nature of customer service required by Buyer C. Some of these additional outcome controls were eventually incorporated into a revised contract following detailed contract renegotiations. As a result, there is evidence of material levels of cooperation, particularly at a management level:

“It was then driven by the .. evolution of .. key performance indicators that Buyer C gained buy-in to and were assimilated into both businesses.”

In summary, supported by the working environment encouraged by the respective Relationship Managers, the service level and contract negotiation process complemented by the evolution of socio-ideological control mechanisms appear to have resulted in a building of trust whilst expanding on the use of a mix of others management control mechanisms involving outcome controls as well as some additional contract and behavioural controls. The cumulative effect of continued alignment of control mechanisms to address emerging control problems appears to support the continued development of the Buyer C relationship, including the continued achievement of most, if not all, of the agreed performance metrics.

### 4.3.4 Current ongoing status of the Relationship

In conclusion, this relationship is ongoing as at the date of this paper with no indication of material control problems affecting the relationship.

The emergence of control problems, the evolution of control mechanisms along with the co-evolution of the business environment within which this interorganisational arrangement operates over the life of the relationship is summarised in Figure 9 below.

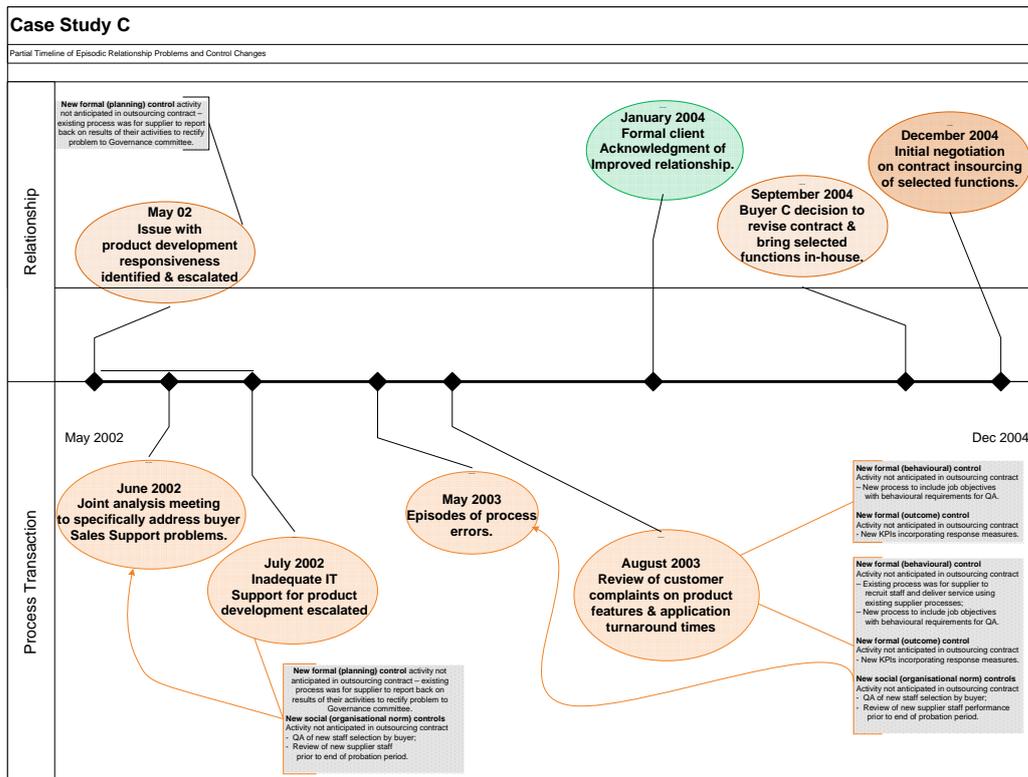


Figure 8- Key events linked with critical control changes (Case Study C).

Reinforcing this co-evolution pathway, one of the key aspects of the Case Study C was an existence of cooperative and coordinated efforts to:

*“.. do the right thing by the customer ..”*

As a result, Buyer C opinion was that a balance of potentially competing interests had been achieved, namely:

*“There is always a risk to Supplier C that they fall into the hole that Buyer C is always right. .. If Supplier C is not prepared to say to Buyer C that we can’t .. or won’t do that .. then, in longer term, the whole relationship gets devalued because something else has to give.”*

An alternate form of representing the material linkages between relationship problems leading to control changes is highlighted in Table 6 below.

\*\*\* Insert Table 6 here \*\*\*

Table 6: Summary of interorganisational problems and control pathways (Case Study C)

The use of interorganisational cooperation is a significant component of change in overall management control design post-contract was a deliberate strategy by Buyer C to help drive greater cooperation and coordination between the parties. Thus, additional, particularly outcome controls, tended to reflect evolving Buyer C requirements, focusing on improved measurability.

Consequently, Tables 6 above highlight the path dependency applicable to Case Study C between problems and the subsequent response starting with joint analysis, leading to additional formal controls in the form of evolving behavioural and outcome controls. Some outcome controls, in turn, evolved into additional contract controls during subsequent contract renegotiation. Over time, increasing use of socio-ideological controls facilitated a material measure of trust-building within the relationship. Market controls were considered for a limited number of tasks but not

used in this relationship. The common view between Buyer C and Supplier C Relationship Managers was that the joint trust-building initiatives of the two focal parties had, with significant effort and the mutual development of additional formal and informal controls by both focal entities over time, facilitated continuation of the relationship.

## **5. Discussion and Conclusions**

This paper has explored the emergence of control problems and resultant management control mechanisms within three case studies in order to investigate the design of management control mechanisms in an interorganisational business environment. This was undertaken using a complex adaptive systems perspective to help understand the complex nature of change in management controls over time. In summary, the paper makes contributions to the accounting literature on management control and interorganisational relationships in terms of a greater understanding of the applicability of systems perspective as enumerated below.

### **5.1 Patterns of Control Problem Emergence and the Evolution of Control Mechanisms**

The first key finding provides evidence linking management control problems and emergent control mechanisms throughout the life of an interorganisational relationship. By way of empirical triangulation, evidence of control problems was found along with changes in control mechanisms using interview narratives as well as coding analysis of governance documents and semi-structured interviews. For discussion purposes alone, the relationship between control problems and control mechanisms are the focus of this subsection, with the next two sub-sections recognising the systems nature of this interaction including the environment within which interorganisational relationship operates.

As all three relationships developed over time, a pattern of post-contractual control problems emerged. In the early stage of these post-contractual relationships, all three cases exhibited

coordination control problems types. Importantly, in all three cases, behavioural controls were introduced as a result. This pattern is highlighted in Table 7, summarising the results of a coding analysis of all documentation that identified either changes to existing control mechanisms or the introduction of new controls over a significant part of the respective relationship.

<b>Control Mechanisms</b>	<b>Case A</b>	<b>Case B</b>	<b>Case C</b>	<b>SUM TOTAL</b>
<b>Behaviour Controls</b>	74	46	37	49
<b>Outcome Controls</b>	8	11	35	9
<b>Contract Controls</b>	15	6	20	11
<b>Market Controls</b>	3	-	-	0
<b>Socio-ideological</b>	-	37	8	31
<b>Total</b>	17	60	22	100

Table 7 – Coding of Control Changes (Percentage of Total)

With approximately 50% of the changes being behavioural controls, it indicates a focus within all three relationships on the use of updated business procedures and related administrative devices to address coordination problems in particular. This confirms the importance of understanding the coordination requirements in explaining control structures (Dekker, 2004) and specifically its use as an ex-ante mechanism to align processes across buyer and supplier such that problems arising from inter-dependence are attenuated. It is also consistent with Groot & Merchant (2000) where choice of control mechanisms are largely driven by partner trust and the object of control within the relationship. In all three cases, having established service delivery costs commitments within the initial contractual controls, an immediate post-contractual focus on increasing the tightness of procedural controls is rational given that cost reduction was a key initial objective.

Table 7 also highlights the importance of socio-ideological controls, particularly for Case Study B. Such mechanisms were used to address the emergence of both coordination and cooperation

problems. This trend is evident in the figures mapping the path dependences in each Case Study, again driven to a considerable extent by the object of control associated with interorganisational objectives as they evolve and interact with patterns of emerging control problems. In other words, examining the use of accounting controls across all three relationships requires attention to intra-firm and inter-organisation changes along with their external and internal environments. This intrafirm/interorganisational/environment dynamic is discussed below.

## **5.2 The Importance of Path Dependency**

The second finding relates to the formation of diverse path dependencies observed across the three cases and summarised in figures 2, 4 and 6. Further, the manner in which this co-evolutionary path impacted management control mechanisms is instructive as it highlights the need to focus on adaptive processes rather than the search for equilibrium states that are fleeting, if they exist at all in such a “non-linear dynamic system” (Thrane, 2007: 257).

Thus, consideration of a complex adaptive system framework provides illumination of a range of evolutionary influences on the interorganisational arrangement. Whilst the effect of landscape fit on control problems appears to have a major effect in the evolution of new post-contractual functional demands, control mechanisms were also evolving in response to influences that were driven by both interorganisational and intrafirm processes. Accordingly, the combination of control problem/control evolution, business environment evolution and ongoing landscape fit has resulted in path dependencies that are consistent with the three foci of complex adaptive systems research namely, internal mechanisms (i.e. control mechanisms), environment (i.e. the micro operations ecology of home loan lending) and co-evolution (i.e. mechanisms and micro operation environment evolving simultaneously, at times influencing each other).

In the post-contractual operation of the interorganisational relationship, management controls aimed to achieve a balance of interorganisational performance against competing demands as mentioned in the results section. Recognisable in the form of inadequate performance against one

or more of these demands, evolution in control configuration was required. This is recognisable predominantly as a change in the mix of control mechanisms. Within each of the three case studies, control mechanisms **evolved to create different end states in terms of the mix of management controls and relationship fate.** This path divergence appears to be driven to a considerable extent by the respective relationship preferences attached to individual control mechanisms, as well as organisational structure in Case Study B. The underlying causes of emerging underperformance against a specific strategic or environmental demand are also critical (Gresov & Drazin, 1997) when comparing Case Study A with Case Studies B and C.

In particular, Case Study B would appear to illustrate emergence through the interaction of systems components such as intrafirm (or group-driven in Case Study B) change in strategy (a tag or rallying point in CAS terminology) with environment co-evolution. This process of evolution initiated at a local level. It suggests that negative entropy, the process whereby energy is sourced from the interorganisational environment in order to sustain and/or renew the interorganisational relationship (Schneider & Somers, 2006), does not always drive systems transformation. In this case, the transformation being the insourcing of selected operations previously performed within an interorganisational arrangement. Thus, differentiation between the buyer firms was capable of being driven by intra- as well as inter-system events or processes. Bear in mind that all three Buyers (Case Studies) operate as competitors in the same industry serving a similar subset of customer needs namely, those seeking home loans with a credit history that is either non-existent or impaired. Whilst Case Study B started its service differentiation path to addressing these evolving needs when the interorganisational arrangement was in place, it was an intrafirm change in strategy that directly lead to the emergence of an internal, insourced structure. This transition was made in order to address the structural preferences of Buyer B's controlling organisational stakeholder, the Group executives to whom Buyer B management were accountable. As stated in the Results section, this was not a decision that Buyer B management would have made in the absence of the Group preference for in-sourcing.

### **5.3 Exploring Alternate Perspectives of System Interaction**

In addition to the influence of interorganisational control problems, management control mechanisms in all three cases also evolved in line with shifts in the environment within which the exchange partners operated. This had concomitant implications for the interorganisational and internal firm (intrafirm) dynamics (Kauffman, 1993). Indeed, evolution in control problems and mechanisms responded at least partly to changes in consumer demand and industry competitors (McCarthy, 2004). The influence of the interorganisational environment was found to be less applicable at a macro or economy-wide level as all buyer firms operated within the same industry and national economy. The results of empirical investigation for this paper emphasise evolution at a micro operation ecology level that “specifies the demand, the supply, the price, the lead-time and the competitors for each individual firm.” (Li et al, 2009: 842) appears to influence control evolution.

The prominent instance of environmental evolution in the case studies examined was the evolution of customer preferences for new product features. Whilst detailed explanation of this market phenomenon is beyond the scope of this paper, there was increasing demand affecting all three relationships for loans that allowed prospective customers with no or impaired credit history to access home loan products. Each buyer addressed this emerging demand with different product responses. An example of these new products is the low documentation (also known as self-certifying) loan requiring personal attestation of stated income by the loan applicant in return for removal of income confirmation tasks and quicker loan approval. Whilst co-evolution based on product niches applied to all three case studies, involving different product or service solutions, it affected Case Study C in particular. The product design adopted in the other Cases Studies resulted in different responses namely, risk-adjusted pricing (Case Study A) and differentiated service targeted at alternate market segments such as self-employed borrowers (Case Study B). Some detail on this differentiation is outlined in the Research and Sites section earlier.

Exploring the co-evolutionary phenomenon in just one case (Case Study C), as Buyer C started to achieve business growth by addressing this emerging need with its low documentation loan product, its success prompted competitors to introduce imitative products, increasing market visibility of the benefits to consumers. These benefits included faster loan approval and higher approval rate for applicants with “less proven or stable” income patterns such as the self-employed. Along with business growth, Buyer C profitability increased as a result of the higher profit margin (driven by higher rates to recognise potentially higher credit risk; reduction in operating costs due to the elimination of income confirmation tasks; and low payment default in a buoyant economy prevalent over the period his Case was explored). To better understand the impact of this co-evolution involving the interorganisational relationship and its environment, we must examine both the relevant literature and the case to identify respective influences over time.

Evidence of the co-evolution outlined above exists in the accounting literature, albeit not always described in using a CAS perspective. For example, Cuganesan & Lee (2006), in an actor-network study of an online procurement network, found that changes in management control design influence the attributes of the outsourcing transaction, parties and experiences and that the influence is bi-directional. Germane to Case Study B, they found both intrafirm and interorganisational forces at work.

Alternate theoretical lens have been applied in the supply chain literature to understand complexity in supply chains, a recent example being a comparison of Resource-Based-View (RBV), CAS and Adaptive Structuration Theory (AST) by Holweg & Pils (2009). For the purposes of this paper, RBV is incorporated through use of the Caglio & Ditillo (2008) control problem typology as discussed earlier in this paper. AST was not considered relevant to the case studies explored here due to the lack of substantive differences in relative power and the apparent lack of differences in unintended use of technology identified as key insights of this approach (Holweg & Pils, 2009). This also justifies the absence of dependency as a control problem type identified by Dekker (2004).

In addition, recent studies have begun to adopt alternative perspectives to uncover the richness of interorganisational management control. Sandelin (2008), for example, examines for possibilities of equifinality in management control configuration. In brief, this principle has tended to focus on explaining why an equivalent business result or performance can be achieved using different combinations of organisational structures and function, especially when the same business contingencies apply (Gresov & Drazin, 1997). The following paragraphs explore this alternative perspective.

In this open systems model, the chosen performance criteria are the absence of control problems, incorporating the achievement of contractual performance targets. In particular, emergence of these control problem types are defined in terms of disruptions to equilibrium states consistent with a three phase typology describing actor interactions as defined in Heiskanen et al (2008), being “acceptance, equivocation, rejection”. Acceptance of the manifestation of a control problem conforming to the Caglio & Ditillo (2008) framework by both focal entities in an interorganisational relationship would signal emergence of disequilibrium. A disequilibrium state, in turn, would require evolution of a control mechanism to force a return to equilibrium or a conscious decision to allow equilibrium to emerge. The approach builds on the definition of episodic provided in Weick & Quinn (1999: 365) that “.. occur during periods of divergence when organisations are moving away from their equilibrium conditions ..”. A contingency view of performance is applied based on the classification scheme of Gresov & Drazin (1997) with a high degree of conflict in functional demands and unconstrained structural options. This view recognised that performance can vary between firms and be sub-optimal even where function-structure combinations of an individual arrangement is considered to be “successful”. These choices are guided by the results of the field studies described in the earlier results section.

Functional equivalence is defined in terms of the maintenance of an equilibrium state in achieving agreed functional demands specific to an interorganisational relationship. In the early phase of the cases studies explored in this paper, these demands relate to outsourcing goals such as

reduction in operational costs and avoidance of future IT investment. By, over time, these demands can evolve to include or substitute with other demands such as an increased level of customer service. How an interorganisational relationship responds to evolution in functional demands with different function-structure configurations is a focus of this paper. This focus also applies to disequilibrium states caused the emergence of control problem types described earlier in this section. Existence of different management control configurations in achieving equifinality and homeostasis (i.e. a return to equilibrium) would provide tentative evidence for an open systems perspective of interorganisational relationships

Applying this open systems perspective to the Results section of this paper, the establishment of the three interorganisational arrangements saw a dominant functional demand for reduced operational costs. However, as highlighted above, there were multiple and conflicting functional business demands based on evolving consumer preferences and the ongoing focus on cost, with no single demand being dominant. In each case, this condition forced a singular control mechanism or structure that best fits an emerging dominant demand to the detriment of others (Gresov & Drazin, 1997). In other words, using an open systems perspective, there was an ability to trade-off function and structure to determine the mix of management control mechanisms employed to achieve strategic and environment fit. Over time, conflict between these demands emerged at a functional level with performance against some of these demands being identified as inadequate and requiring an evolution in function-structure configuration. When considered in terms of both range and, more particularly, relative importance of each management control type implemented, configurations evolved differently within each of the three case studies. Further, the mix of controls was driven by respective weighting of importance attached to these functional demands which, in the case of Case Study A, may have been a material cause of the emerging underperformance against a specific strategic or environmental demand (Gresov & Drazin, 1997).

At this point, the situation is consistent with the principle of equifinality (Doty et al, 1993; Gresov & Drazin, 1997). If our analysis was halted at this point, ignoring the group-level strategic

intervention in Case Study B, we could argue that a focus on open systems and a search for equifinality has some considerable merit in understanding interorganisational control. Consistent with Sandelin (2008) and contrary to Contingency Theory and other static perspectives, Case B and C have similar contingencies being fast-growing, established but relatively immature institutions with similar initial and evolving functional demands. The key was that they had differing management responses to these conflicting demands. The resultant difference in mix of controls can be expressed in terms the primary mode of control, consistent with the interpretive approach adopted in Sandelin (2008). In Case Study B, the primary mode of control was social whereas, Case Study C placed greater emphasis on additional formal controls in the form of KPIs and related performance measures. The end result, after approximately five years into an interorganisational relationship, is a similar equilibrium state in terms of consistent achievement of functional demands with mutual agreement that goal were being achieved at an interorganisational level.

However, we argue that Case B demonstrates intrafirm evolution, in the form of Buyer B change in strategy, did not allow the establishment of an equilibrium state. This was not evidenced in the form of a control problem as defined by Caglio & Ditillo (2008) but it changed the fate of interorganisational relationship. Thus, in Case B, controls evolved in the absence of disequilibrium. Exploring this finding for a moment, the key to this argument is that the difference in relationship fate between Case B and C is driven by intrafirm co-evolution in the face of similar interorganisational functional demands and industry contingencies. In other words, expressed in terms of an open systems perspective, assimilation or importation of energy (Grasov & Drazin, 1997) is not sufficient even when alternate function-structure combinations are equivalent at an interorganisational unit of analysis as suggested by the empirics in this paper.

Thus, based on our empirical analysis, co-evolution in control mechanisms is a complex adaptive phenomenon not conducive to equilibrium states but, instead, induced by the interdependence of system components, only part of which is environmental (McCarthy, 2004). An open systems

perspective is insufficient to explain the complexity of interorganisational relationships. The next subsection expands on the implications of the above finding.

#### **5.4 Conclusion and Further Research**

In summary, the results of the field study described in this paper support the divergent evolution of path dependencies. These results emphasise the benefits of a CAS perspective. Further, the exploration of path dependencies within such a system is a more fruitful explanation of analysis than an open systems approach for investigating management control in interorganisational relationships. Indeed, given mixed findings and the inconclusiveness of prior research (Caglio & Ditillo, 2008), and the proposition that “an equally good final state can be achieved by various control system designs in the face of similar contingencies (Sandelin, 2008, p.324)”, it is argued that interorganisational management controls are better understood not by adding to a list of contingent variables but through attention to the path-dependent nature of multiple emergent influences.

As a consequence of these findings, the Authors believe that this paper has improved understanding of the complexity of control evolution in an interorganisational environment. Consistent with Schneider & Somers (2006), it has illustrated the applicability of Complexity Theory to changes in social institutions through the emergence of management control problems and the co-evolution of control design and the environment within which the interorganisational relationship operates. It has also examined the role of component interaction within this complex system, identifying the impact of individual firm culture and market trends. Inter alia, it provides a measure of empirical support for an emphasis on the complex adaptive nature of interorganisational relationships. In addition, it highlights the need for multi-theory explanations of management control design when applied to the ongoing management of interorganisational relationships. As a result, this paper adds to the growing literature on the applicability of CAS as a useful lens to understand such arrangements, extending the work of Thrane (2007).

In addition, there are implications for practitioners, often ignored in the management control literature. These insights include the use of a CAS model to provide a comprehensive analysis of interorganisational control in order to holistically identify potential control problems, intra- and inter-organisational and environmental influences; the need to focus on emergent control problems and environmental co-evolution rather than the achievement of ideal equilibrium states; and recognition that alternate mix of management controls can address control problems and environment evolution (i.e. there is no 'one right way' to control).

As expected, there are a number of limitations that need to be addressed in future research, focusing on potential methodological improvements in particular. Firstly, only three selected outsourcing agreements within the same industry were examined for the purposes of this paper. This places limits on the generalisability of the findings. There is a need to incorporate a more diverse range of interorganisational relationships and environments across the key dimensions studied in this paper, allowing more detailed exploration of patterns of emergence and co-evolution associated with management control practice.

A second limitation of this paper is the lack of investigation of the linkages between organisational design, management control and financial performance (Fritsch et al, 2007). This paper did not address the quantitative performance implications of evolving control mechanisms. Further, the financial impact of identified control problems as well as the value added by the evolution of control mechanisms in response was not examined. A quantitative CAS model was not developed and is a subject for further research. Future development of quantitative modelling, highlighted in Schneider & Somers (2006), would facilitate the use of sensitivity analysis and other techniques such as neural networks to identify uncertainties and emerging patterns of performance, providing opportunities for sustainable risk management. These are opportunities to provide future practitioner support.

Finally, there are limitations with the use of the interview methodology adopted in this study, principally associated with the reliance on memory and recollection in the interviews with key representatives of the parties participating in the outsourcing relationship. Whilst this is partly mitigated by the analysis of governance documents and the use of semi-structured interview technique to reduce the effects of recall biases, there is an opportunity to use alternate methodology such as action research to help address this limitation.

## Appendix - Summary of Data Gathered

The following pages provide detail on the data gathered for the purpose of this paper and is referred to in the body of the paper above. As such, this appendix addresses the two methods used – firstly, the quantitative results of coding analysis followed by an overview of the semi-structured interviews.

Table A2-1 summarises the sources and related dimensions of the governance documentation analysed.

Document Type	Case A	Case B	Case C	Average	TOTAL
Minutes of Meetings	25	7	19	17	51
Reports	1	-	1	1	2
Emails	11	-	-	4	11
Other	-	-	-	3	9
<b>Total</b>	<b>37</b>	<b>7</b>	<b>20</b>	<b>24</b>	<b>108</b>

Table A1: Case Study dimensions – Summary of Governance document scope

The following table summarises the interview sources associated with this study.

Interviewee Category	Case A	Case B	Case C	Average	TOTAL
C-level Executives	2	2	1	2	5
Relationship Managers	2	2	1	2	5
Service Delivery Managers	2	1	1	1	4
Other	2	1	1	1	4
<b>Total</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>6</b>	<b>20</b>

Table A2: Case Study dimensions – Summary of interview coverage.

## References

- Anderson SW & Dekker HC, 2005, "Management control for market transactions: The relation between transaction characteristics, incomplete contract design and subsequent performance", *Management Science*, 5 (12:1734-1752).
- Birnberg J.G., M.D. Shields & [Young](#), S.M., 1990 "The Case for Multiple Methods in Empirical Management Accounting Research (With an Illustration from Budget Setting)", *Journal of Management Accounting Research* vol. 2.
- Boulding, K. E., 1956. General systems theory: The skeleton of science. *Management Science*, 2(3), 197–208.
- Caglio, A. & Ditillo, A, 2008, "A review and discussion of management control in inter-firm relationships: achievements and future directions", *Accounting, Organizations and Society*, doi:10.1016/j.aos.2008.08.001.
- Chenhall, R.H., 2003. Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Acc. Organ. Society* 28 (2/3), 127–168.
- Choi, T., Dooley, K., & Rungtusanatham, M., 2001. Supply networks and complex adaptive systems: Control versus emergence. *Journal of Operations Management*, 19(3), 351–366.
- Choi, T.Y., Krause, D.R., 2006. The supply base and its complexity: implications for transaction costs, risks, responsiveness, and innovation. *Journal of Operations Management* 24, 637–652.
- Cuganesan, S., 2006. The Role of Functional Specialists in Shaping Controls within Supply Networks, *Accounting, Auditing and Accountability Journal*, Vol 19 (4), pp.465-492.

Cuganesan, S. & Lee, R., 2006. Intra-organisational influences in procurement network controls: the impacts of information technology, *Management Accounting Research*, 17: 141–170.

Dekker, H.C., 2004, “Control of inter-organizational relationships: evidence on appropriation concerns and coordination requirements” *Accounting, Organizations and Society*, 29: 27-49.

Dekker, H.C., 2008, “Partner selection and governance design in interorganisational relationships” *Accounting, Organizations and Society*, 33: 915-941.

Doty, H., Glick, W. H., & Huber, G. P., 1993. Fit, equifinality, and organizational effectiveness: a test of two configurational theories. *Academy of Management Journal*, 36, 1196–1250.

Fritsch, M., Hackethal, A., Wahrenburg, M. & Wuellenweber, K. 2007, ‘The Impact of Business Process Outsourcing on Firm Performance and the Influence on Governance: A Long Term Study in the German Banking Industry’. Available at SSRN <<http://ssrn.com/abstract=1076422>>.

Gerdin, J. & Greve, J., 2008. The appropriateness of statistical methods for testing contingency hypotheses in management accounting research, *Accounting, Organizations & Society*, 33: 995–1009.

Groot, T. L. C. M., & Merchant, K. A., 2000. Control of international joint-ventures. *Accounting, Organizations and Society*, 25, 579–607.

Gresov, C., & Drazin, R., 1997. Equifinality: functional equivalence in organization design. *Academy of Management Review*, 22, 403–428.

Heiskanen, A., Newman, M. & Eklin, M., 2008. Control, trust, power, and the dynamics of information system outsourcing relationships: A process study of contractual software development, *Journal of Strategic Information Systems*, 17: 268–286.

Holweg, M. & Pil, F.K., 2008, Theoretical perspectives on the coordination of supply chains, *Journal of Operations Management* 26: 389–406.

Katz, D. & Kahn, R. L., 1978. *The Social Psychology of Organizations*, 2nd edn (New York: Wiley).

Kauffman, S. A., 1993. *The origins of order: Self-organization and selection in evolution*. New York: Oxford University Press.

Krippendorff, K, 1980. *Content Analysis: An Introduction to its Methodology*, SAGE, Newbury Park CA.

Li, G., et al., 2009, The evolutionary complexity of complex adaptive supply networks: A simulation and case study. *International Journal of Production Economics*, doi:10.1016/j.ijpe.2009.11.027

Malmi, T. & Brown, D.A, 2008. Management control systems as a package—Opportunities, challenges and research directions, *Management Accounting Research*, 19: 287–300.

McCarthy, I. P. (2004). Manufacturing strategy: Understanding the fitness landscape. *International Journal of Operations & Production Management*, 24(2), 124–150.

v. d. Meer-Kooistra, J. & Scapens, R.W., 2008. The governance of lateral relations between and within organisations. *Management Accounting Research*, doi:10.1016/j.mar.2008.08.001

Mouritsen, J, Hansen, A & Hansen, C.O., 2001, Interorganizational controls and organizational competencies: Episodes around target cost management/functional analysis and open book accounting, *Management Accounting Research*, 12(2), 221–244.

Reuer, J.L., Arino, A. & Mellwig, T., 2006, "Entrepreneurial alliances as contractual forms", *Journal of Business Venturing*, 21: 306–325.

Sandelin, M, 2008, Operation of management control practices as a package—A case study on control system variety in a growth firm context, *Management Accounting Research*, 19 : 324–343

Schneider, M., & Somers, M., 2006. Organizations as complex adaptive systems: Implications of complexity theory for leadership research. *The Leadership Quarterly*, 17: 351–365.

Surana, A., Kumara, S., Greaves, M., Raghavan, U.N., 2005. Supply chain networks: a complex adaptive systems perspective. *International Journal of Production Research* 43 (20), 4235–4265.

Thrane, S., 2007, The complexity of management accounting change: Bifurcation and oscillation in schizophrenic interorganisational systems, *Management Accounting Research*, 248–272.

Thrane, S. & Hald, K.H., 2006. The emergence of boundaries and accounting in supply-fields: the dynamics of integration and fragmentation. *Management Accounting Research*, 17: 288–314.

von BertalanHy, L. 1950. General system theory. New York: Braziller

Vosselman, E.G.J. & Meer-Kooistra, J. v. d., 2008, "Accounting for control and trust building in interorganisational transactional relationships", *Accounting, Organisations and Society*, 34: 267-283.

Weick, K. E., & Quinn, R. E., 1999. Organizational change and development. *Annual Review of Psychology*, 361-386. Retrieved from <http://www.questia.com/PM.qst?a=o&d=5001249962>.

Table 2 - Case Study A

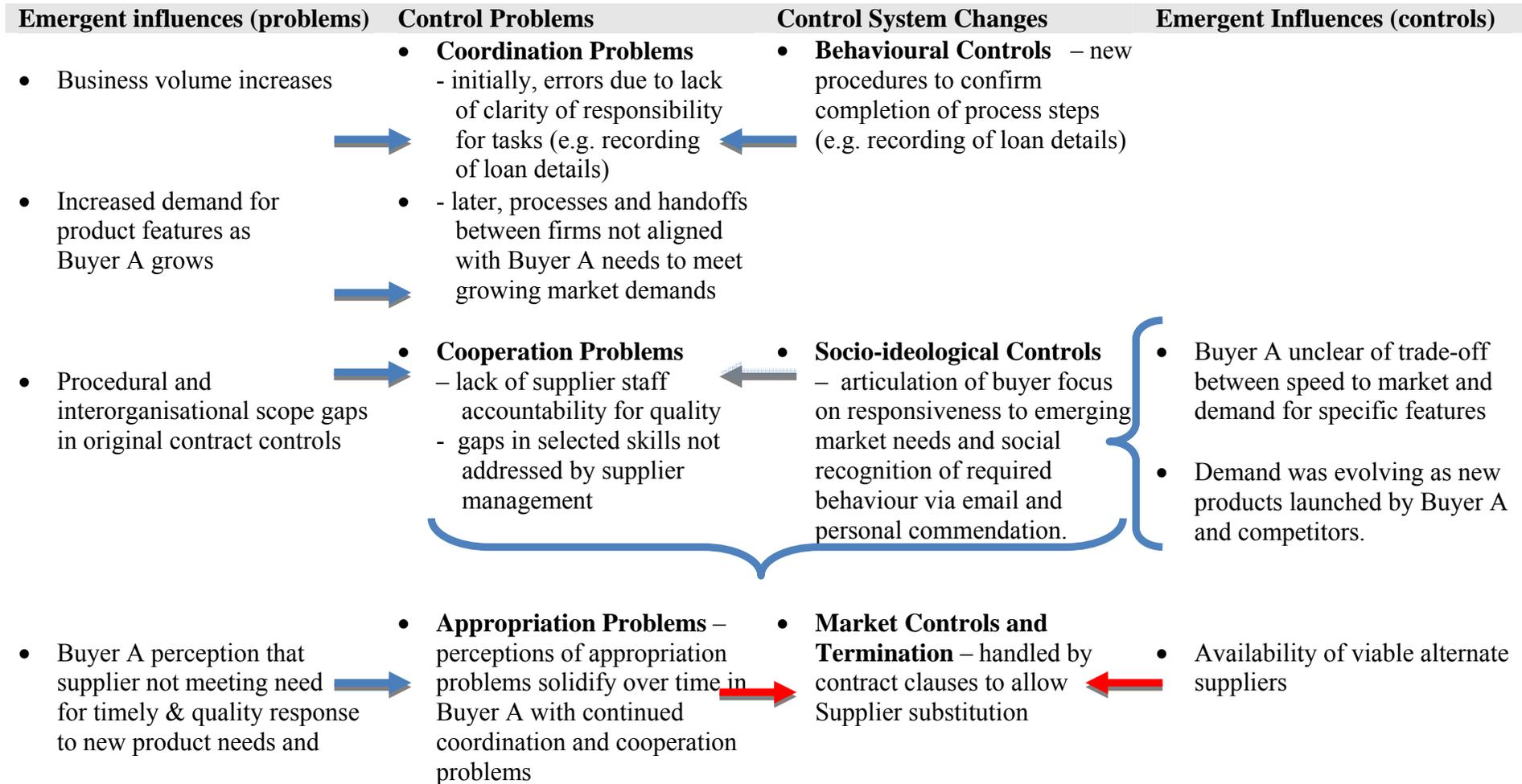


Table 4 - Case Study B

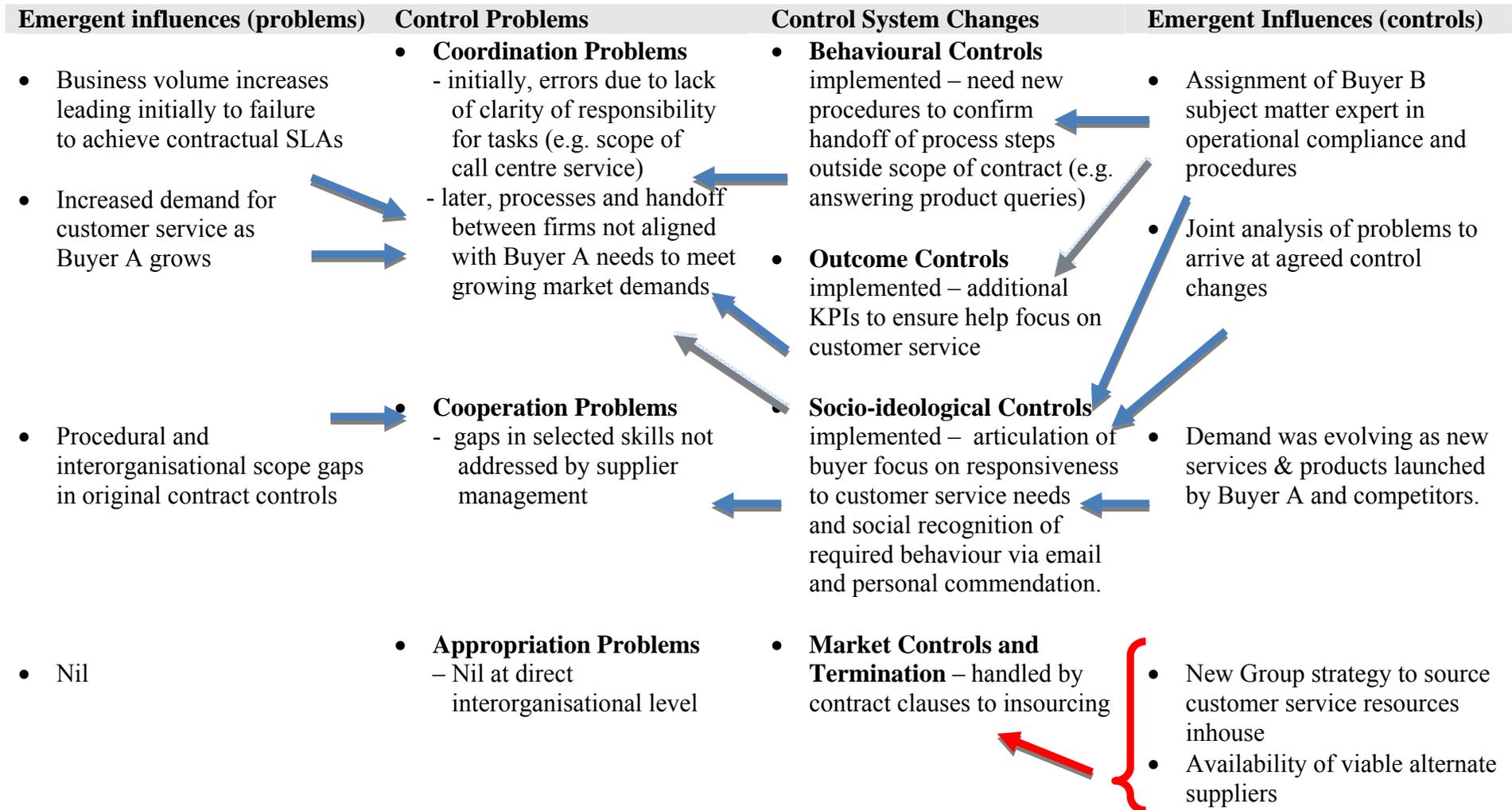


Table 6 - Case Study C

