

Outsourced supply chains as a complex adaptive system

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Abstract

Purpose – Firms in the early stage of their organisational lifecycle (ESFs) are subject to concerns founded on a requirement for strategic flexibility, prompting engagement in inter-organisational relationships such as outsourcing. However, studies of the management control dynamics of these relationships are rare. This paper aims to respond by empirically examining the influence of ESF managers on the ongoing management control of such relationships.

Design/methodology/approach – A single outsourcing case study is utilised to provide evidence in examining a multi-theoretical framework that adopts a complex adaptive system (CAS) perspective as a qualitative analytical framework, along with the existing accounting theory on control adoption.

Findings – Focused on management concerns with tensions between inter-organisational control and strategic flexibility, this paper identifies reasons for the adoption of management controls by an ESF. The inter-organisational system explored in this paper emphasises the importance of adopting a holistic epistemology in understanding changes in control adoption.

Research limitations/implications – This paper extends current theoretical perspectives on control adoption to consider the inter-organisational control concerns of ESF managers.

Practical implications – The insights identified in this paper provide a systemic framework to identify potential organisational and environmental influences on control problems, emphasising environmental co-evolution rather than achievement of ideal equilibrium states.

Originality/value – The intended contribution is to extend the management control literature to consider the effect of organisational lifecycle on the adoption of new inter-organisational management controls in the wake of ongoing trade-off between competing inter-organisational requirements.

Keywords Outsourcing, Management control, Complex adaptive systems, Early stage firms, Service supply chains

Paper type Research paper

1. Introduction

The link between strategy and management control is a seminal relationship, examined in a number of academic literatures such as accounting (Chapman, 2005) and supply chain management (Adamidis and Pomonis, 2009). In this research, the primary purpose of management control is identified as ensuring that the behaviour of individuals is consistent with organisational goals and strategies (Merchant, 1985).

Of particular interest to this paper, prior research indicates that newly established firms experiencing significant growth, sometimes referred to as “early-stage” firms (ESFs) (Davila, 2005) have distinct management control challenges that evolve within this dynamic business environment (Sandino, 2007; Marion and Sipahi, 2010, p. 5497). The dynamic



interaction between control and business environment uncertainty is particularly evident in knowledge-based firms (Ditillo, 2004)[1]. One notable strategic challenge is an ESF management preference for flexibility in organisational routines and practice (Feldman and Pentland, 2003), partly signified by a management predilection for product differentiation (Chenhall and Langfield-Smith, 1998).

In light of this strategic challenge, ESFs tend to be both innovative and selective, considering a wide range of controls but adopting a discrete number that co-evolve with the business environment (Reid and Smith, 2009). A typical response to these strategic challenges faced by ESFs, given limited cash flow and capacity to invest, is to enter into inter-organisational relationships such as outsourcing. As summarised by Davila *et al.* (2009, p. 296):

[. . .] startups are resource-constrained and rely to a much larger extent than large companies on partnerships and networks; however, little research has addressed the question of the design of control mechanisms for these relationships.

Inter-organisational relationships also create ongoing interdependencies within a network of ESF business relationships (Henneberg *et al.*, 2010). This necessitates consideration of the need to respond to fluid managerial concerns through the adoption of new controls over the life of these relationships whilst being selective about their adoption, given the time and costs relative to limited ESF resources (Granlund and Taipaleenmaki, 2005). Hence, a flexible approach to control within an inter-organisational relationship is needed (Surana *et al.*, 2005).

These considerations influence the adoption of controls to achieve inter-organisational objectives (Berry *et al.*, 2009). In this world, strategy and control are not static but operate as “[. . .] a matrix of interdependencies that connects the structure and process of a network and that confronts the existing with the evolving” (Ford and Mouzas, 2008, p. 64). In other words, the mix of control adopted changes not only in response to inter-organisational factors but also in response to intra-organisational influences. Whilst these factors also apply to mature firms (for example, the tension between organisational flexibility and formal controls as discussed in Frow *et al.*, 2010), the drivers and processes for change differ for ESFs (Silvola, 2008). The influence of agents, organisational structures and business environment that impact the mix of management controls tend to exhibit greater risks for and, thereby, influence on ESFs (Collier, 2005).

However, accounting studies of control have tended to study mature companies with established control systems (Auzair and Langfield-Smith, 2005). Within the accounting and supply chain literatures, there has been limited study of management control in an ESF context, selected exceptions being Rooney and Cuganesan (2013) in the accounting literature and Marion and Sipahi (2010) in the supply chain literature. In particular, whilst research on the broader context of small and medium enterprises and family firms is extensive, studies reaching across the accounting and supply chain literatures are rare (Jayaram *et al.*, 2014, p. 473), prompting calls for further study, despite empirical research challenges (Maloni *et al.*, 2017, p. 132). Thus, the adoption of new inter-organisational controls in response to evolving ESF management strategic and environmental concerns is the research context of interest to this paper.

In response, this paper builds on the research on supply chain (Li *et al.*, 2010) and accounting literatures (Thrane, 2007, p. 249) to explore how “order in inter-organisational relationships emerges, how the inter-organisational system changes and adapts, and the role accounting plays in these processes”. This necessitates longitudinal research examining the

ESF organisational context as part of an inter-organisational system of relationships aimed at addressing trade-offs between organisational flexibility and control.

To help explore interactions between agents, control structure and the business environment faced by ESFs, a complex adaptive systems (CAS) perspective is adopted, encompassing relations of reciprocity between managers, management accounting and the business environment (Holweg and Pil, 2008) within an inter-organisational relationship. Consistent with Chenhall (2003) and Cilliers (2000), adoption of a CAS perspective as an analytical framework allows study of individual controls as attractors for achieving inter-organisational strategy (Gresov and Drazin, 1997). In contrast to Thrane (2007), however, this paper incorporates a multi-theoretical perspective identified by Davila *et al.* (2009), synthesising prior research on both the role of and the reasons for adoption of new management controls within an ESF.

This paper contributes the management control literature by extending current theoretical perspectives on control adoption by ESFs to consider the inter-organisational concerns of ESF managers. Based on a multi-theory approach, the inter-organisational system explored in this paper is expected to demonstrate the emergence of different mixes of control mechanisms for similar inter-organisational requirements, explaining the presence of alternate control structures when comparing different ESF firms in the same industry (Gresov and Drazin, 1997). In particular, this paper highlights the processes associated with agent interpretation and the search for meaning in the pursuit of inter-organisational goals rather than deterministic resolution.

It is structured into five remaining parts. The next section reviews the relevant management control literature. This is followed by a description of the research site and methods. Empirical case study observations are presented next. Finally, the paper ends with a discussion of findings and conclusions.

2. Literature review – management control and complexity

2.1 *The dynamics of inter-organisational management control involving ESFs*

Inter-organisational relationships are multi-faceted and subject to change, leading to calls in the mid-1990s to investigate the use of management controls within inter-organisational relationships (Hopwood, 1996). Whilst offering important insights, two key dimensions require subsequent research. First, exploration of the use of management controls by ESF within a supply chain context is under-researched in the accounting literature. Second, whilst prior ESF studies identify the role of senior management appointments in formal control adoption (Davila, 2005; Davila *et al.*, 2009), they do not explain the process by which particular controls are identified by ESF managers as being required to achieve the strategic goals associated with an inter-organisational relationship.

Contrasted with mature firms, ESFs often lack established business operations and human capital (Bendickson *et al.*, 2017, p. 2) whilst also experiencing rapid growth in business activity. This may make it difficult to extrapolate demand with sufficient certainty for detailed contracting to occur. The implications of this context extend to the differences in strategic investment decision-making, particularly with regards management style (Carr *et al.*, 2010, p. 170). Whilst limited prior experience in outsourcing is acknowledged as a potential consideration (Mouritsen *et al.*, 2001), ESFs may be able to rely on prior experience of the owner/manager or hire selected experienced staff to address such strategic resource gaps. Hence, control adoption in ESFs may be driven as much by learning about managing the capabilities provided by outsourced relationships, as it is about attenuating control problems (Caglio and Ditillo, 2008) or risk (Langfield-Smith, 2008). Here, the development of shared values and inter-personal and inter-firm trust can substitute for formal control

mechanisms (Massaro *et al.*, 2017, p. 25). Hence, a range of strategic management controls may be adopted as a “package”, intended to guide behaviour towards strategic ends (Malmi and Brown, 2008).

Hence, the dynamic business environment within which ESFs operate necessitates a holistic approach to control use, akin to an integrated thinking approach to organisational governance identified in the literature on integrated reporting (Dumay *et al.*, 2017), arguably consistent with a preference for informal control mechanisms (Dumay and Dai, 2017). In this context, the challenge for ESF management is to balance adaptability to the business environment with flexibility in management control design. In this context, Collier (2005, p. 325) suggests “a ‘thin’ accounting role may be sufficient to ensure management control over the start-up firm operations”. Identified in the accounting literature as organic structural controls encouraging opportunity search and innovation (Bedford *et al.*, 2016, p. 20), this may apply especially where formal controls are costly and time-consuming to install and operate (Sandino, 2007). Limited research to date indicates that it is only after an ESF undergoes significant growth that management turns to formal control (Silvola, 2008). Hence, in relation to ESFs, understanding the configuration of management controls and how they change over time is needed (Bedford and Malmi, 2015, p. 3; Otley, 2016). Further, the role of individual agents may be more important than identified in the accounting literature to date (studies adopting an ANT perspective being one notable exception – see Thrane, 2007).

Consistent with an interest in the relationships between organisational lifecycle and control dynamics (Samagaio *et al.*, 2017), Davila *et al.* (2009) identified six reasons for control adoption by ESFs. These were categorised as follows: external influences, being either to legitimise the firm or contract with external parties; proactive internal reasons, due either to the appointment of key managers who would implement or import controls based on their prior experiences or support an explicit focus on goals in response to emerging need such as coordination; and reactive internal reasons, to control chaos created by unexpected events or facilitate organisational learning.

In the absence of prior theoretical development in this accounting context of inter-organisational relationships involving ESFs, this paper embraces the theorising described in Davila *et al.* (2009).

Exploration of the dynamics of this ESF context can be facilitated by recognition that management control practices interact and influence each other. The implication is that a holistic understanding of control adoption may be elusive if studied as independent organisational structures (Chenhall, 2003; Bedford and Malmi, 2015, p. 2). In particular, understanding of ESF control dynamics requires examination of the interaction between control mechanisms when used in combination to address the critique of prior contingency research as reductionist (Grabner and Moers, 2013). However, whilst Davila *et al.* (2009, p. 323) identified examples of control techniques (such as project budgets), their focus was reasons to adopt a control rather than the selection of, and interaction between, individual controls adopted as a result. As argued by Dekker (2013, p. 918), detailed examination of this aspect of inter-organisational relationships “... offers an important way to enhance theory development and empirical testing”.

For this purpose, the descriptive management control typology identified in Dekker (2004) addresses a range of mechanisms identified in the accounting literature and highlights controls as both complements and substitutes for each other within an inter-organisational relationship (Dekker, 2008). This typology is aligned with the focus of this paper, “emphasising the objects of control: people, their actions and outcomes” (Anderson *et al.*, 2012, p. 8). In Table I below, the terminologies for management controls described by

Table I.
Analytical
framework

Reasons to adopt control	Contractual controls	Behaviour controls	Outcome controls	Social controls
<i>External</i> Legitimise	Use of terms and conditions in an outsourcing contract to symbolise buyer management competency to address appropriation and dependency concerns	Adopted to specify non-contractual actions or processes within the relationship to symbolise management control competency	Specify measurable, non-contractual outcomes to be achieved as a symbol of management control competency	Engage or plan to engage in social practices aimed at goal congruence and recognisable by external stakeholders as symbolising management control competency
Contracting	Imposition of contractual terms and conditions to impose monitoring of cooperation and task coordination within the inter-organisational relationship	Imposition of specific non-contractual actions or processes to enhance monitoring of cooperation and task coordination within the relationship	Imposition of measurable, non-contractual outcomes to enhance monitoring of cooperation and task coordination within the relationship	Imposition of social practices aimed at goal congruence to enhance monitoring of cooperation and task coordination within the inter-organisational relationship
<i>Internal</i> Proactive Manager background Need to focus	Use of contractual terms and conditions to promote accountability and focus consistent with the experience of buyer management and/or on explicit goals	Use of specific non-contractual actions or processes to promote accountability consistent with the experience of buyer management and/or on explicit goals	Use of measurable, non-contractual outcomes to promote accountability consistent with the experience of buyer management and/or on explicit goals	Use of social practices aimed at goal congruence to promote accountability consistent with the experience of buyer management and/or on explicit goals
Reactive Chaos Learning	Use of contractual terms and conditions to manage emerging control problems and code past learning over the duration of the relationship	Use of specific non-contractual actions or processes to manage emerging control problems and code past learning over the duration of the relationship	Use of measurable, non-contractual outcomes to manage emerging control problems and code past learning over the duration of the relationship	Use of social practices aimed at goal congruence to manage emerging control problems and code past learning over the duration of the relationship

Source: Adapted from Davila *et al.* (2009)

Dekker (2004, 2008) and adopted in this paper are listed across the columns and matched with the descriptions of reasons for control adoption identified by Davila *et al.* (2009) in the relevant rows.

The controls mechanisms identified in Dekker (2004, 2008) used in the columns of Table I are listed in Table II, in Column 1, with an general description of each provided in Column 2.

Consistent with this approach, recent research has adopted (or rediscovered) holistic systems-based perspectives to uncover the richness of control choice within inter-organisational relationships (Thrane, 2007). However, studies adopting a systems framework also raise methodological concerns, including the absence of a theoretical framework to explain practice (Hopper *et al.*, 2001). Further, earlier systems perspectives focus on fit between systems, structure and environment with achievement of stability or equilibrium (Stacey, 2007). Recognition of these concerns led to a decline in open systems research on control in favour of qualitative methods.

One alternative approach is to adopt multiple theories (Caglio and Dutillo, 2008) to explore dynamic control contexts. This is also consistent with the approach to complexity studies described by King (2001). In response, this paper examines inter-organisational relationships using a CAS analytical framework described in Schneider and Somers (2006), combined with the theory identifying antecedents for the adoption of controls by ESF firms described by Davila *et al.* (2009) as outlined earlier. This framework is concerned with meanings and insights that are inter-related and ultimately used to inform practice. It is also a perspective that transcends the dichotomy between structure and agency found in the social sciences (Jackson, 2000), the absence of which is a critique of alternative approaches to systems thinking adopted in accounting studies (Stent and Dowler, 2015) such as autopoiesis (Lyon, 2004, p. 22). This approach also supports examination of patterns of interaction between control mechanisms and environment over time (Holweg and Pil, 2008). As a result, the inter-organisational networks studied here are represented in terms of relationships rather than formal constructs, as a complex rather than a closed system.

In terms of examining emerging inter-organisational controls, a CAS framework emphasises relational analysis of the struggles of agents in search of an achievable end. An individual agent, such as employees of an outsourcing firm, seeks to improve his/her fitness to achieve this end within the environment he/she operates (Kaufmann, 1993). However, given our adoption of the CAS perspective as a qualitative analytical framework, the focus of this paper is on interpreting meanings ascribed to change rather than a development of rules and a model of management control change, an alternative approach to complexity studies identified by Maguire *et al.* (2006). This leads to interpretive analysis of complex interactions (Broadbent and Unerman, 2011, p. 15) where a CAS framework has agency and,

Control mechanism	Description and source
Contract controls (formal)	Clauses included in the design and modification to the terms of the outsourcing contract developed and formally agreed by both parties (Vosselman and van der Meer-Kooistra, 2008)
Behaviour controls (formal)	Controls directed at guiding behaviour, excluding changes to contract terms associated with these items (Dekker, 2004)
Outcome controls (formal)	Quantitative measures, standards and feedback processes, excluding changes to contract terms (Dekker, 2004)
Social controls (informal)	“Management control practices targeting minds, through norms, emotions, beliefs and values, are intended to affect behaviour indirectly” (Alvesson and Karreman, 2004, p. 425; also Dekker, 2004)

Table II.
Summary of management control mechanisms

as adopted in this paper, agents achieve goals by means of interactions and connections within the inter-organisational network.

Finally, a CAS perspective may be more applicable to outsourcing relationships, given the presence of non-cyclical disruption in the form of the realisation of exogenous business risks and the emergence of change due to positive rather than exclusively negative interaction between firms (e.g. business volume growth). Differentiation based on these properties that focuses on interactions between firms within a business network is consistent with the complex systems approach adopted in [Schneider and Somers \(2006\)](#).

An overview and more detailed rationale for adopting a complex systems perspective are discussed next.

2.2 Application of a CAS framework to inter-organisational relationships

As an object of study in this paper, [Li et al. \(2010\)](#) suggest that recognition of the systems nature of supply networks is based on the need to understand the complex and evolving interplay between the internal mechanisms of buyer firms and the environment within which they operate. Expressed in these terms within the post-contractual operation of the inter-organisational relationship, controls aim to achieve a balance of performance against competing functional requirements, structure and the business environment within which the relationship operates. Studying influences on perceived underperformance against a specific functional requirement or environmental disturbance is critical ([Gresov and Drazin, 1997](#)).

Using a CAS framework, there was an ongoing ability to trade-off functional requirements and structure to determine the mix of management control mechanisms used to achieve strategic and environment goals. Whilst such an observation is unremarkable in a general sense, the manner in which this trade-off evolves is instructive. Performance depends on timely control interventions to either deterministically reduce the scope of independent action for agents or to allow for emergence of autonomous behaviour as circumstances provide.

Consistent with the above dynamic, the paper emphasises four key differences from the static models favoured in the accounting literature, based on terminology in [Boulding \(1956\)](#) as cited by [Thrane \(2007\)](#). These key differences are:

- the presence of a multi-centred contestable inter-organisational space;
- a focus on context-driven patterns of change;
- porous organisational boundaries affected by ongoing interactions between agents (including the environment); and
- the emergent nature of control.

Examination of these aspects is required to achieve the aims of the research outlined in this paper ([Surana et al., 2005](#)). Hence, evidence for, and the implications of, the presence of these four characteristics in the inter-organisational system involving an ESF buyer is explored in this paper.

There are important implications arising from the adoption of a CAS perspective as a qualitative framework. First, consistent with [Thrane \(2007\)](#), the achievement of quantitative performance measures (a form of outcome management control) associated with the inter-organisational arrangement are not analysed here. Given that the case study achieved target cost reductions for the duration of our analysis period, focus is on resolution of disruptions or problems (collectively labelled as perturbations in [Thrane, 2007](#)) as a representation of successful inter-organisational performance. Agent recognition of system disruption or

perturbation in the sense defined by Thrane (2007) is based on acceptance by both entities in an inter-organisational relationship that a reason to adopt a new control mechanism conforming to Davila *et al.*'s (2009) has emerged and is recognised by decision-making agents in the inter-organisational relationship as an underlying cause. This approach recognises that the nature of complex systems may blur boundaries between firms, making separation of factors affecting intra- and inter-organisational performance unproductive (Thrane and Hald, 2006).

Second, this framework recognises that performance can vary within inter-organisational relationships over time. In particular, inter-organisational performance can be sub-optimal even where functional requirements–structure combinations are considered to be “successful”. Recognition that different combinations of functional requirements and mix of controls can achieve inter-organisational goals indicates there may be more than one way to achieve desired inter-organisational performance (Schneider and Somers, 2006). Consistent with this approach to systems investigation, the focus of the paper is on the trade-off made by managers within buyer firms to address the stated functional requirements.

Finally, to explore processes of trade-off between functional requirements and controls within a CAS framework, the paper adopts an agent-based approach to help with understanding mechanisms and processes likely to drive emerging patterns of inter-organisational control behaviour (Surana *et al.*, 2005). This approach is adapted from the three-phase typology outlined in Heiskanen *et al.* (2008) describing to agent recognition of system disruption as being one of acceptance, equivocation or rejection[2]. Recognition is not pre-determined but remains to be revealed. A perturbation, therefore, requires emergence of a new control mechanism to mitigate its impact, emergence of a new functional requirement or a decision to allow existing controls to resolve it. As identified above, inter-organisational success is based on resolution of a perturbation to the system.

The next section outlines the research methods and site used to explore inter-organisation relationships as a complex adaptive system.

3. Research site and methodology

3.1 Research site

As a methodology considered appropriate to exploratory qualitative studies into the uses of management accounting (Ahrens and Chapman, 2006), a case study approach is adopted. Flyvbjerg (2006) identifies this approach as also according with the research focus of complexity studies with an emphasis on relations-interactions, context-dependency and meaning rather predictive theorising. By viewing accounting practices as socially constructed phenomena, a case study enables understanding of social practices in a specific context (Hopwood, 2007). In turn, this supports “a holistic orientation to study accounting as part of a unified social system” (Scapens, 1990, p. 268).

This supports exploration of processes, episodes of change and other interactions from an agent perspective (Schurr, 2007). It necessitates examination of events, activities and choices, as they emerge and are sequenced (Van de Ven, 1986), identifying how and why phenomenon unfolds over time (Bizzi and Langley, 2012). By studying cognitive practices, this methodology will focus attention what agents accept as information, how they will process and store it and how they use it. This recognises “[...] that much of the actual doing of strategy in organizations, takes place in the form of talk, text and conversation [...]” (Fenton and Langley, 2008, p. 4). Further, it is an approach that contrasts with deterministic studies focused on co-variation between independent and dependent variables.

3.2 Research methodology

Six potential cases were initially identified on the basis of known characteristics of an ESF buyer with a subsequent history of high business volume growth during the term of an outsourcing relationship. The respective firms are high growth, entrepreneurial entities established to operate in the home loan industry with different start-up history as well as different inter-organisational boundaries, governance structures, controls and relationship success. Each of the buyer firms is a separate business unit with a separate legal entity and board. They have similar functional requirements expected of their respective inter-organisational relationship, addressing the same customer market segments. The list of potential cases was reduced to three based on the author's expectations about the information content of each case in relation to the possible range of reasons for ESF managers to adopt new management controls. [Table III](#) summarises the high-level dimensions for these three cases.

A single case (listed as case #1 in [Table III](#)) was selected based on the author's expectations about the information content of each case in relation to the possible range of reasons for ESF managers to adopt new management controls. These expectations were based on the industry experience of the author. The case study firm was engaged in an outsourcing arrangement within the Australian home loan industry over the period 2002 to 2006. It was part of a publically listed diversified financial institution based in Australia, operating on a national and international basis. Only the Australian entity was studied.

The product niche for this ESF was home loan customers with no or impaired credit history (e.g. self-employed contractors, first-time borrowers), traditionally ignored or rejected by the dominant industry institutions. This is a significant segment of the banking sector in Australia with an annualised GDP of AU\$1,095bn, the measure of household debt (home loans being the major component of this figure) of around 100 per cent of Australian national income is an indication of the importance of home loans at the time of this study ([Euromonitor, 2003](#)). Firms within this industry have a history of utilising outsourced service providers. The product design implemented by the case study firm in response to ESF growth requirements within this market segment were low documentation or self-certifying loan products requiring personal attestation of stated income by the loan applicant in return for quicker loan approval.

The selected case has similarities with two prior case studies conducted on a complex inter-organisational relationship. [Thrane \(2007\)](#) examined a Danish consulting network and compared the dynamics of the network over a two-year period. [Sandelin \(2008\)](#) examined a growth firm in the telecommunications industry across two periods. Whilst there are similarities with the case examined here, there are also key differences: the relative lack of direct influence of environment in [Sandelin \(2008\)](#) and the limited range of system perturbations for both.

The buyer firm had up to 200 employees with a range of skills and experience. These skills included all major functions usually present in a firm operating at a head office level within this industry, including treasury, risk, accounting, human resources (HR), legal, market/product and sales. The firm had a home loan portfolio value in the range of \$AUD5bn to \$AUD50 billion (a range provided to protect the anonymity of the firm). The object of research also includes networks of service firms in addition to the prime outsource supplier, providing specialised outsourced services such as real estate valuations and home loan contracts. The outsourcing relationship is ongoing as at the year data collection ceased for this study.

Dimension	Firm #1	Firm #2	Firm #3
Success of collaboration Renewed and current?	Successful	Unsuccessful	Unsuccessful
Key activities outsourced	Yes <i>Lead generation, retention, valuations, loan contract, settlement, document printing, sales (partial)</i>	No – insured <i>Originations, valuations, loan contract, settlement, servicing document printing, sales (partial), IT</i>	No – alternative outsourcer <i>Originations, valuations, settlement, servicing, document printing, sales (partial), IT</i>
Term of outsourcing contract	2 years	At party's discretion	At party's discretion
Governance documentation	Meeting minutes, service-level reports, complaints registers, issue notes, emails	Meeting minutes, service-level reports, complaints registers, issue notes, emails	Meeting minutes, service-level reports, complaints registers, issue notes, emails
History of change in controls	Yes	Yes	No
Number of service levels	9	32	7
Number of periods of operational data	12	9	12
Availability of budget data	✓	✓	✓
Financial performance	Successful	Successful	Unsuccessful

Table III.
Case study dimensions (outsourced activities analysed for this paper in bold)

3.3 Data collection

Empirical data comprise interviews conducted with personnel at the respective ESF and lead outsourcing firms directly involved at both service delivery and relationship management levels. The range of roles includes firm and outsourcer executives, relationship managers and service delivery managers. This comprised the entire population of individuals in these roles for this case study. In addition, four specialist operations staff (two from the ESF and two from the lead outsourcing firm). A total of 20 interviewees across buyer and supplier organisational levels were included. The semi-structured interviews will be conducted to identify and understand the following questions:

- *What factors are regarded as important to the success of the relationship? How did these features change as the relationship developed? Why did changes occur?*
- *Was/is the relationship successful and what criteria are used to determine this view? How has it changed as the relationship has continued?*
- *What are the important operational factors contributing to improved performance? How did these factors change as the relationship developed? Why did changes occur?*

Interviews trace through events over the life of the relationship. Interviewees described 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. Interviews were conducted on business premises of the respective outsource buyers and suppliers.

The next section presents an overview of the results for the case study, identifying the initial and new controls adopted over the term of the inter-organisational relationship.

4. Results

4.1 Contract controls at the commencement of the relationship

The ECF (the outsource buyer firm in the relationship “Buyer”) was initially established in the late 1990s as part of a diversified entrepreneurial finance group. The outsource relationship commenced in 2001, involving a medium-sized specialist outsourcing service provider (“Supplier”). The outsourcing decision aimed to achieve a mix of strategic business objectives: reduction in operational and IT costs, avoidance of future investment in IT infrastructure and a recognition that home loan operations are not strategic competencies in the pursuit of business growth. Given its entrepreneurial parent, buyer was prepared to take greater business risks to achieve functional requirements.

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.

A timeline of key events during the term of the outsourcing relationship studied for the purposes of this paper is summarised in [Figure 1](#) below.

4.2 Buyer growth and control changes emerge with time

The contract specified interim service levels for the initial six months of the relationship, based on previous internal operations performance and recognition that outsource transition takes a period of time to impact service delivery. At the expiry of this interim period, the contract specified more onerous performance targets that assumed the completion of a list of IT enhancements and related outsourcing transition activities to improve service response.

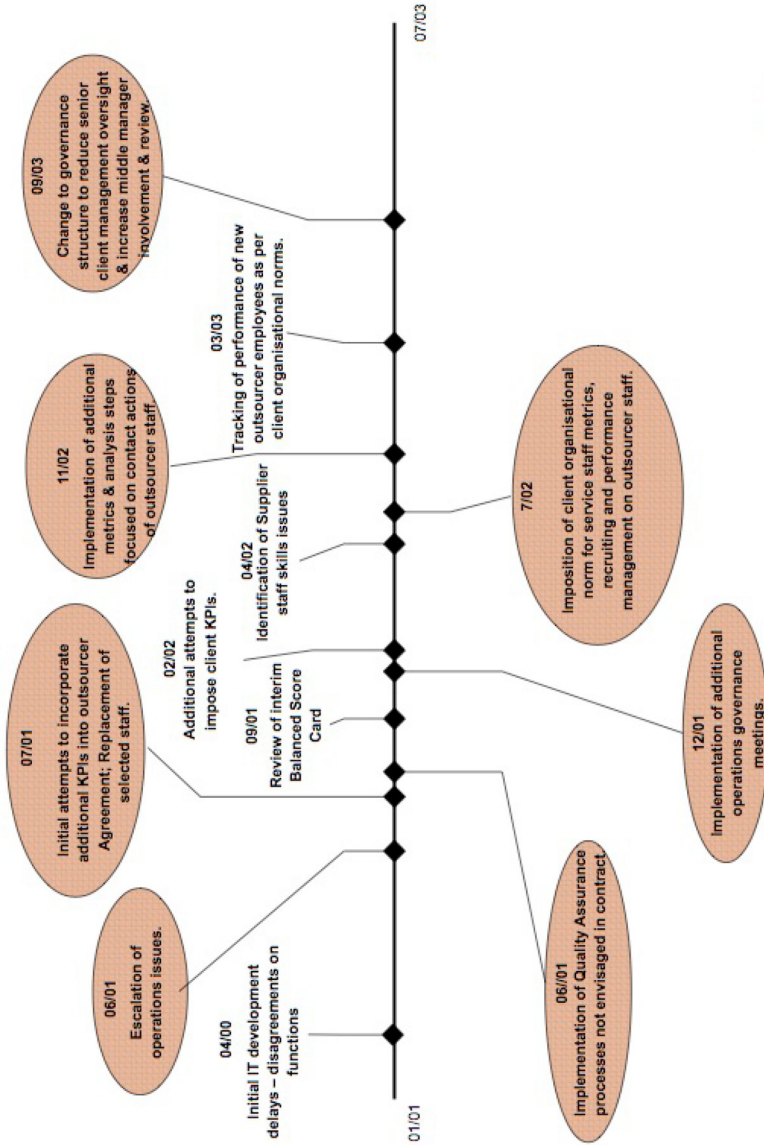


Figure 1. High-level timeline of events

The key problems from a buyer perspective focused on failure by the supplier to meet the IT enhancement milestones or consistently achieve the more onerous post-contract service levels that relied on the delivery of the agreed IT enhancements. 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 sub-process. Performance metrics associated with the call centre function in this period are provided in [Table IV](#) above.

A trend of emerging supplier service problems and resultant management control evolution are typical experiences over the life of the relationship, as discussed below.

In the first year of the relationship, the choice of control was mostly driven by the nature of the service problem, caused largely by failure to achieve technology enhancements and dependent improvements in service delivery times. The early appearance of control problems precipitated a change in the supplier personnel, aimed at improving the likelihood of completing the delayed automation as soon as practicable. Buyer management regarded this action as a complementary response to additional behaviour controls to address gaps in automation due to the delay mentioned above. However, co-operation was not consistent at across the organisational levels at this early phase of the relationship, as identified by the buyer relationship manager:

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

The addition of a limited number of outcome controls associated with the additional behaviour controls was also complemented by the implementation of other control types. An example of the additional outcome controls was a new KPI to measure the time taken on a new loan application between a final credit decision and the issue of loan contracts, a process due to be automated now requiring the use of outsourced legal staff. Linking new behaviour and outcome controls, along with additional staff, was the desire to achieve more onerous service levels, whilst the delayed automated service was being developed.

With the delay in enhanced automation outlined above, the reason for adoption of new controls evolved post-contract to focus on non-automated ways to achieve improved customer service. However, there was very little willingness to trade-off low-cost delivery for improvements in customer service. Further, there were perceived ambiguities in the contractual KPIs. As a result, buyer entered into extended discussions on more complex KPIs that reflected the risks associated with less automation, based on performance of individual components of the previous metrics. [Figure 2](#) illustrates with an example of the increased volume above contractual targets for the loan application verification sub-process. Given delays in automation, a manual service escalation process with differential SLAs was implemented.

The additional KPIs were used to monitor 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 process measures is those shown in [Figure 3](#) below, based on eight months of loan application processing performance (target is 70 per cent of applications processed within 48 h of receipt). Here, an additional KPI to measure average number of loan applications per credit approval officer was added to help understand the variation in contracted service levels.

Approximately two years into the relationship, the buyer was able to incorporate additional service-level reporting to that envisaged in the initial contract negotiations. Some of these additional outcome controls were eventually incorporated into a revised contract following detailed renegotiations. A summary of the reasons for adopting these additional controls is provided in [Table V](#) above. By this time, there is evidence of cooperation,

SLA Ref #	Category	Description	Required time	Minimum service level required %	Transition service-level reporting (July 200x)											
					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 s	50% to April 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 April 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 h	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 day	99%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	97.3	97.8			

Table IV.
Example of a service problem (interim call centre service levels) in Case Study 1

particularly at a management level, as emphasised by the buyer relationship manager, reporting to the COO:

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

The result was an expansion of the mix of management control mechanisms involving additional contract, behavioural, outcome and social controls. The relationship between functional requirements (listed as the four outsourcing objectives in the top-left corner) and control adoption (in the lower half) is summarised in Figure 4 below. The initial control package consisted of contract controls with some limited behaviour controls (top-right side).

The latitude of the buyer to change controls was limited as a consequence of the parent company's outsourcing strategy aimed at improving the chances of a successful initial public offering (IPO), should it occur in the future. Changes in the control package consisted, in the first instance, of behaviour controls. Over time, new social and outcome controls were introduced to the initial control package. The emergent control package included a full range of mechanisms in a control package supporting a continuation of the relationship.

The use of a range of inter-organisational management controls as a significant component of change in overall management control design post-contract was a deliberate strategy by the buyer to help drive improved service levels. To a lesser extent, additional outcome controls tended to reflect evolving buyer requirements, focusing on improved measurability. Exploring this phenomenon by way of an example, Table IV highlights the adoption of new controls initially prompted by systems delivery and related service problems (chaos).

The subsequent response involved joint problem analysis, leading to additional formal controls in the form of evolving behavioural and outcome controls. Resultant

Figure 2.
Example of refined and shared performance metrics (loan application service level)

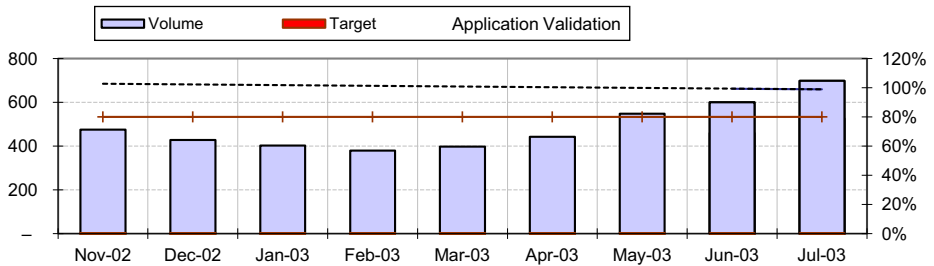
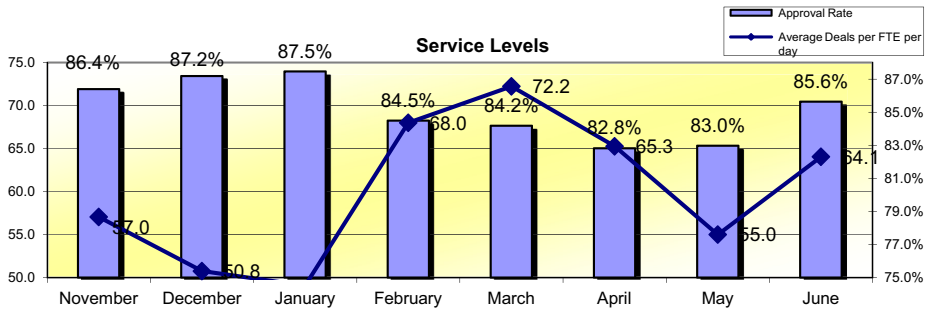


Figure 3.
Example of additional KPIs (loan application service level) shared in the case study



Functional demand	Reason for adoption	Reason for adoption control changes
Supplier selection	Service problems (chaos) Errors due to lack of clarity of responsibility for tasks (e.g. scope of call centre service)	Behavioural controls New procedures to confirm completion of process steps, addressing service outside scope of contract (e.g. IT response; answering product queries) Joint analysis of problems to arrive at agreed control changes
Avoid investment	Procedural, IT and inter-organisational scope gaps in original contract controls	
Cost reduction	Practices not aligned with ESF needs to meet growing customer service demands	
Strategic competencies		Outcome controls Additional KPIs to ensure help focus on customer service Social controls
New market entrance	Common goal/focus Gaps in selected skills not addressed by supplier management	Articulation of buyer focus on responsiveness to customer service needs
Business volume	Buyer A clearer on trade-off between service cost and demand for customer service experience	Assignment of ESF subject-matter expert in operational compliance and procedures Social recognition of required behaviour via email and personal commendation
Leverage existing group sales network		
Increased demand for service as ESF grows		
Supplier selection	Learning Clearer operational view of required service	
Reduced cost	Availability of viable alternate suppliers	

Table V.
Functional requirement/reasons for adoption/control package linkage

outcome controls, in turn, evolved into additional contract controls during subsequent contract renegotiation. Over time, increasing use of social controls facilitated a material measure of trust building within the relationship. As a result, the opinion of the supplier operations manager was that a balance of potentially competing interests had been achieved, namely:

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

The relationship is ongoing as at the conclusion of analysis for this paper, with no indication of material relationship or control problems affecting the viability of relationship. The cumulative effect of continued alignment of control mechanisms to address emerging control problems appears to support the continued development of the buyer relationship, including the continued achievement of all of the functional requirements.

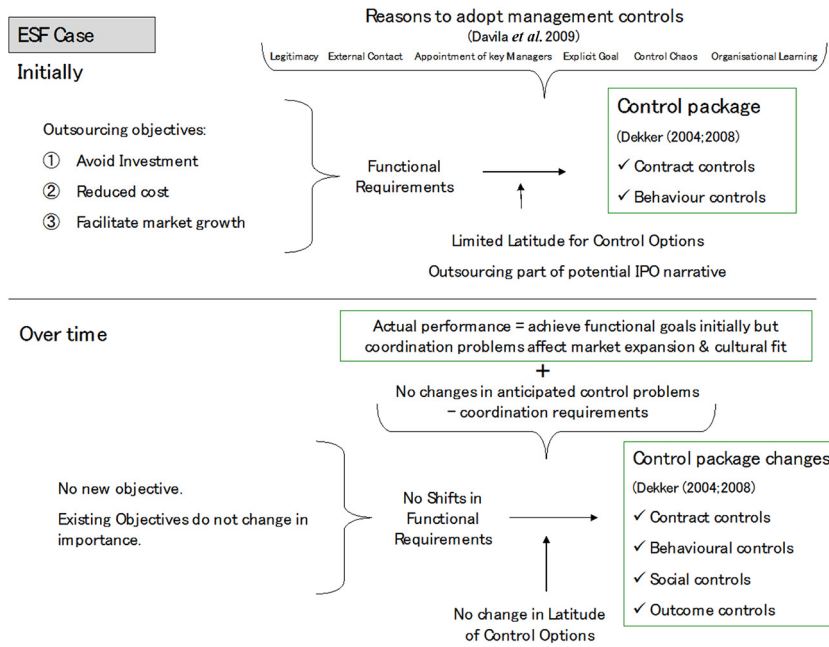


Figure 4.
Functional
requirement/control
package linkage
initially and over time

5. Discussion

Whilst prior accounting studies on the ESF context highlight a preference for limited formal control adoption within the firm, engagement in an inter-organisational relationship may create other performance concerns that emerge over the life of the outsourcing relationship. These emergent concerns may prompt consideration of formal controls early in the term of the arrangement, contrary to theoretical expectations in the ESF management control literature. To date, management control and related ESF research has yet to consider how ESF control challenges interact with inter-organisational control concerns to influence the adoption of specific control mechanisms within an inter-organisational relationship. Consistent with prior academic interest in relationships between flexibility and control, this section discusses patterns of management control adoption resulting from interactions between emergent agent understanding of ESF goals, inter-organisational requirements and the effects of new control adoption.

5.1 Patterns of functional requirement elaboration and the adoption of new controls

As summarised in Figure 3 above, the ESF initially implemented contract controls based on, in the words of Davila *et al.* (2009), the need to ensure external legitimacy (an external reason for control adoption).

Over time, emergent agent understanding of inter-organisational requirements became more apparent. This understanding interacted with post-contractual service delivery problems and emergent demands of the business environment. As indicated in Figure 3, the social actions required in response resulted in changes consistent with internal reasons for control adoption described by Davila *et al.* (2009). These reasons included chaos (reactive), organisational learning (reactive) and an explicit focus on goals (proactive).

The pattern of control adoption indicates a focus on updated business procedures and related administrative devices. For example, interview data indicate that a number of new behaviour controls were introduced in response to chaos associated with inter-organisational task coordination resulting from, in the words of an ESF relationship manager, “[...] a high gap in expectations”. The subsequent behaviour control was additional and formalised service performance meetings, regarding detailed remedial action plans above agreed contractual requirements. As an ESF operations team leader identified, “Communication has not been all that effective. We needed to meet on a more regular basis, aside from emails [...]”.

Agents recognised adoption of new behaviour controls as an *ex ante* mechanism to align processes across buyer and supplier firms to attenuate problems arising from co-dependent tasks. This corroborates the importance of understanding functional requirements (in this example, coordination) in explaining new control structures (Dekker, 2004, 2008). It is also consistent with Groot and Merchant (2000), where choice of controls is partly driven by partner trust and partly by the object of control within the relationship. Having established and achieved service delivery cost commitments (a key inter-organisational functional requirement) within initial contractual controls, the focus of post-contractual control adoption was on clearer and more effective coordination procedures (a behaviour control).

At the same time, using the terminology of Davila *et al.* (2009), inter-organisational learning was an important reason for the adoption of new reactive internal controls. As highlighted in the example of additional service delivery meeting cited above, the process of control change had occurred to codify and capture learning about outsourced processes. Behaviour controls were not just about enhancing coordination or countering contracting problems, but were also adopted to enable learning from past experience and the development of organisational capabilities (Nelson and Winter, 1982; Lundberg, 1995). In particular, the pattern observed here is consistent with the notion of behaviour controls as enabling “organisational members [to] experiment with different ways of executing processes until a satisfactory solution is found, which is then codified” (Davila and Foster, 2005, p. 27). Note that, whilst this reason for control adoption also applies to mature firms (Simons, 1995; Ferreira and Otley, 2009), the importance of learning codification has been especially identified with new product development (Davila, 2000) and, more specifically, new firm sustainability in knowledge-intensive business environments (Branzei and Vertinsky, 2006).

As shown in the results section of this paper, over the duration of the outsourcing relationship, the different choices available and adopted by meaningful agents within the case study were consistent with the reasons for control adoption articulated by Davila *et al.* (2009). Recognisable in the form of inadequate performance against one or more of these requirements, evolution in the mix of controls was required. This leads to a discussion of the role and effect of actors on the adoption of new controls.

5.2 The complex adaptive nature of control adoption

In the post-contractual operation of the inter-organisational relationship studied in this paper, management controls aimed to achieve a balance of inter-organisational performance against competing inter-organisational requirements. Recognisable in the form of inadequate performance against one or more of these requirements, evolution in management control was required. This recognition manifests as either a change in an existing control mechanisms or adoption of a new control.

Examined within a complex adaptive systems framework, emergence of a reason to adopt new controls is defined as a system disruption consistent with a three phase typology describing agent interactions as defined in Heiskanen *et al.* (2008), being “acceptance,

equivocation, rejection". Hence, agent acceptance of the manifestation of a reason to adopt new control conforming to the Davila *et al.* (2009) framework signals emergence of a system disruption. A disruption, in turn, would require adoption of a new control or modification to an existing control mechanism to ensure the achievement of agreed requirements or a conscious decision to allow a sub-optimal mix of controls to remain.

Control mechanisms evolved to create different (expressed in systems terms) organisational structures (i.e. mix of management controls) as shown in Figure 3. As highlighted earlier, this appears to be driven to a considerable extent by the agent preferences attached to adoption of specific control mechanisms. The underlying causes of emerging underperformance against a specific strategic or environmental requirement are also of interest (Gresov and Drazin, 1997).

Due to ESF agent recognition of functional requirement for business growth early in the inter-organisational relationship, ESF management had a need to access expert industry resources to assist with start-up of the firm in the home loan lending industry. This need was met initially by outsourcing to an established supplier. At various times in the life of the relationship studied in this paper, service delivery performance was considered insufficient for ongoing expansion, despite the achievement of the other stated functional requirements. Given eventual achievement of the growth requirement, the relationship was eventually seen as successful, illustrating emergence through the interaction of systems components such as system requirements and emerging reasons to adopt intra-organisational controls (a tag or rallying point in CAS terminology) with environment co-evolution. Whilst control change was often in response to the environment (external reasons to adopt controls identified in the typology of Davila *et al.*, 2009), this process of evolution was sometimes initiated within the ESF firm (internal reasons). It suggests that negative entropy, the process whereby energy is sourced from the inter-organisational environment to sustain and/or renew the inter-organisational relationship (Schneider and Somers, 2006), does not always drive inter-organisational systems or, in particular, management control transformation.

These findings suggest that there was an ability to trade-off function (i.e. business goals) and structure (i.e. management controls) to achieve strategic inter-organisational requirements. In the initial post-contractual transition period, contractual controls aimed to achieve a control mix to manage these trade-offs. The aim was to balance inter-organisational performance against competing functional requirements largely identified during outsource supplier selection and contract negotiation phase of the relationship. Over time, conflict between these requirements emerged with performance against some of these demands being identified as inadequate. This required an evolution in the inter-organisational function-structure configuration. Control mix continued to evolve, driven by respective weighting of importance attached to requirements and, over time, the cause of the emerging underperformance against a specific requirement.

In addition to the influence of intra- and inter-organisational control considerations, management control mechanisms also evolved in line with shifts in the environment within which the exchange partners operated. This had concomitant implications for the inter-organisational and internal firm (intra-organisational) dynamics (Kaufmann, 1993). Adoption of new controls responded at least partly to changes in consumer demand and industry competitors (McCarthy, 2004). The prominent environmental influence in the case study examined was the evolution of customer preferences for new product features. These results 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, p. 842). In this regard, the case study illustrates the co-evolutionary nature of control.

Whilst detailed explanation of this market phenomenon is beyond the scope of this paper, there was increasing consumer demand for loans that allowed prospective customers with no or impaired credit history to access home loan products. An example of 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. As the ESF started to achieve business growth by addressing the emerging consumer need outlined above with its low-documentation loan product, its success prompted competitors to introduce imitative products, making the benefits more visible to other 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, ESF profitability increased as a result of the higher profit margin (driven by higher interest 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 this case was explored).

To understand the importance of this co-evolution involving an ESF engaged in an inter-organisational relationship and its environment, examination of the nature of the systems interactions at play is important. Based on the empirical analysis outlined in this paper, an open systems perspective is insufficient to explain the complexity of inter-organisational relationships. Whilst these results provide evidence that “an equally good final state can be achieved by various control system designs in the face of similar contingencies” (Sandelin, 2008, p. 324), the inter-organisational system did not find a steady state in the period of observation covered in this paper. The system was always in flux. In particular, this finding conforms to four characteristics of a complex system described in Thrane (2007).

Hence, it is argued that inter-organisational management controls 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). Change in control mechanisms is understood through directing attention to the nature of the range of emergent influences. Consistent with Schneider and Somers (2006), the results outlined in this paper have illustrated the applicability of the complexity theory to changes in social institutions (such as ESF firms) through the emergence of reasons to adopt new or modified management controls and the co-evolution of control design and the environment within which the inter-organisational relationship operates as a result of actor trade-offs between inter-organisational requirements.

It also highlights the need for multi-theory explanations of control design when applied to the ongoing management of inter-organisational relationships.

6. Conclusions

In the post-contractual operation of the inter-organisational relationship, management controls aim to achieve a balance of performance against competing functional requirements. Hence, exploration of reasons to adopt controls with a CAS analytical framework is identified as a fruitful approach to investigate trade-offs between alternative mix of control mechanisms. In addition, ongoing consideration of changing business environment and buyer firm characteristics, including organisational lifecycle, on the adoption of new controls is also required. Given mixed findings and the inconclusiveness of prior contingency-based management control research (Caglio and Ditillo, 2008), it is argued that adoption of new controls is better understood not by adding to a list of contingent variables but through attention to the complex nature of multiple emergent influences on inter-organisational relationships involving an ESF buyer. Driven by emergent agent

perceptions and preferences in response to similar business goals and strategy, this multi-theory framework focuses attention on patterns of interaction between agents, organisational structures (namely, management controls) and business environment.

As a consequence, this paper has contributed to the ESF and inter-organisational management control literature by emphasising the interaction between actors (especially, their functional requirement and control preferences), controls and business environment. Combining a complex systems framework with existing theory that focuses in the reasons for new control adoption supports the exploration of influences that originate within the buyer firm. These influences include lifecycle stage and actor/institutional preferences. Hence, this paper adds to the literature on the applicability of CAS as a useful lens to understand such arrangements, extending the work of Thrane (2007) and the theorising of Davila *et al.* (2009) into the inter-organisational relationship context. It also adds to literature on the applicability of multi-theory frameworks as a useful lens to help explain management control change in practice.

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 inter-organisational control to holistically identify potential control problems, intra- and inter-organisational and environmental influences and environmental co-evolution rather than the achievement of ideal equilibrium states. Consistent with practice-oriented research, this study has provided concrete examples of control change that has identified “how [...] growing firms identify their need to adopt MCS” (Davila, 2005, p. 244), particularly within an inter-organisational relationship. For example, through the use of a CAS framework and Davila *et al.* (2009) typology of reasons to adopt new controls, we have been able to track how the requirement for adaptability and flexibility may impact inter-organisational arrangements over time. This may help decision-makers such as executives responsible for outsourcing strategy, as well as relationship and operations managers responsible for outsourcing arrangements, to clarify the functional goals and the reasons for control adoption. It may also help improve understand of relationship between changes in the business environment and subsequent emerging reasons to adopt new controls.

As expected, there are a number of limitations that need to be addressed in future research, focusing on potential theoretical and methodological improvements in particular. First, whilst predominantly static in focus, prior research has identified control change tied to more specific coordination concerns, namely, appropriation, coordination and/or dependence concerns (Dekker, 2004, 2008; Caglio and Ditillo, 2008). It has also identified a need to explore specific relational and performance risks (Langfield-Smith, 2008). These more specific and nuanced concerns were not specifically addressed in this paper. Second, only one selected outsourcing agreement was examined. There is a need to incorporate a more diverse range of inter-organisational 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. Third, there is limited investigation of interaction between organisational design, management control and financial performance (Fritsch *et al.*, 2007). Future development of quantitative modelling, highlighted in Schneider and Somers (2006), may facilitate the identification of emerging patterns of performance. 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 partly mitigated by examination of governance documents and the use of semi-structured interview techniques, there is an opportunity to use alternate qualitative research methodologies.

Notes

1. The relevance of this finding relates to the insight that outsourcing relationships are a form of supply network based on value creation derived from substantive knowledge flows (Li *et al.*, 2009).
2. Whilst originating from an open systems, equilibrium state approach, it is argued that this description is also pertinent to a CAS framework, provided the subsequent processes to achieve equilibrium state(s) are excluded.

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