

DYNAMIC INTERACTION OF FOCAL FIRM RELATIONSHIPS AND THE BUSINESS MODEL IN THE CREATION AND REALISATION OF VALUE

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ABSTRACT

This study examines the dynamic interactions occurring between the relationships of a focal firm and its business model over time. It shows how the two phenomena co-evolve, influenced by the anticipation and realisation of value by the actors involved. The business model focuses on a focal firm but extends beyond its boundaries, explaining how the firm, its customers, suppliers and partners, interact jointly to realise value. Value as interest motivates the actions of all actors in the pursuit of goals. Relationships constitute important resources for the enactment of the business model of the focal firm. Relationship partners commit resources to the business model according to the value they anticipate gaining. They continue to engage in interactions and with the focal firm's business model if sufficient value is realised through the actions undertaken in each activity cycle. They reduce their commitment to future interactions and to the business model of the focal firm if their anticipated value is not realised. The managers of the focal firm also change their view of particular relationships if they are not realising their anticipations of value. Anticipations and realisations of value therefore influence both the relationships engaged in by the focal firm and related actors, and the nature of its business model. Some relationships change character over time, expanding or constraining the scope of action by the focal firm, and these changes also influence the evolution of its business model. The study is based on a process analysis of the 20-year evolution of the business model of an Australian software company.

Acknowledgements:

The author would like to thank his PhD thesis research supervisor, Dr Gary Buttriss of the Research School of Management at The Australian National University, the founders, owners and managers of the case study company 'Z-SYS', for permission to use part of their story with details disguised, and an anonymous reviewer for the IMP Conference 2015.

INTRODUCTION

The purpose of this paper is to analyse the dynamic interactions occurring between the relationships a focal firm has with other actors and that firm's business model, and how these change over time, as the firm and its partners seek to realise value. It builds on recent work by Bankvall et. al. (2014), Clarke and Freytag (2011) and Frandsen et. al. (2014) which examines business models from a relationships and networks viewpoint, highlighting the interactive and interdependent character of business model evolution. The business model concept provides a useful frame of reference because it represents the viewpoint of a particular firm – the 'focal firm' – and also describes the relationships and interactions which that firm has with other actors. Changes occurring in the focal firm's relationships over time are accompanied by changes in the firm's business model (Clarke & Freytag 2011). Frandsen et. al. (2014) in particular, show the dynamic interrelationships between perceptions of value, relationship interactions and the continuous development of the focal firm's business model, while Ford and Mouzas (2013) and Bankvall et. al. (2014) highlight the interdependence of related firms' business models, how activities and resources combine through interaction to generate value, with the relationships evolving over time. The present paper builds on that work, applying the theory of 'value as interest' from the field of axiology (Perry 1914, 1926, Pepper 1958). The paper develops the concept of 'anticipated value' and argues that this motivates actors' interactions in relationships and networks and that it explains why they engage with the business models of other actors. 'Anticipated value' is proposed as an antecedent to interactions and business models. 'Realised value', which is a consequence of interactions, including the resource combinations and activities undertaken in accordance with a business model, explains why actors continue engaging and why they sometimes disengage. The paper starts by summarising the theory of the business model as a boundary-spanning object built on relationship interactions. The paper then reviews the theory of 'value as interest' and develops the concepts of 'anticipated' and 'realised' value. It then presents the evidence from two phases of substantial change in the relationships and in the business model of a case study company, showing how changes in anticipated and realised value triggered changes in relationships which in turn led to changes in its business model. The concepts of anticipated and realised value, as motivators of interactions, add to interaction-based explanations of how relationships and business models are sustained and evolve over time.

THE BUSINESS MODEL CONCEPT AND ITS RELEVANCE TO RELATIONSHIP INTERACTIONS

The business model is a unit of analysis distinct from product, firm, industry or network; it is centred on a focal firm but has boundaries wider than those of the firm. It describes the activities of the focal firm and its relationship partners as they seek to create and capture value (Zott et. al. 2011, p. 1020). Business models represent a particular set of strategic choices an organisation makes about policies, assets and governance, and these determine "the logic of the firm, the way it operates and how it creates value for its stakeholders" (Casadesus-Masanell & Ricart 2010, p. 201). Business models represent value-creating systems – 'bundles of practices' that become institutionalised in firms, in business networks and in markets, over time (Mason & Spring 2011, p. 1038). Zott and Amit (2010) develop the notion of the business model as an 'activity system', combining the activities undertaken by all the actors in a 'business model'. 'Activity' is defined as "the engagement of human, physical and/or capital resources of any party to the business model (the focal firm, end

customers, vendors, etc.) to serve a specific purpose towards the fulfilment of the overall objective” (Zott & Amit 2010, p. 217). The ‘activity system’ is “a set of interdependent organisational activities centered on a focal firm, including not only the activities conducted by the focal firm itself, but also those of its partners, vendors or customers etc. The firm’s activity system remains firm-centric to enable the focal firm to create value through interactions with its partners and also to appropriate a share of the value created (Zott & Amit 2010, pp. 217-218). Because of its boundary-spanning nature, the business model is increasingly being seen as an object that depends on the relationships between the focal firm and other actors, one that evolves through their interactions, and one that is affected by changes in the relationships and in the business models of other actors in the wider network (Clarke & Freytag 2011, Munksgaard 2011, Storbacka et. al. 2012). The business model of a focal firm is thus interactive and emergent over time (Bankvall et. al. 2014). Clarke and Freytag (2011) provide a multi-level analysis of changes in business models as schemas at the firm level, in schema couplings at the relationship level and in complex schema configurations at the network level (Clarke & Freytag 2011, pp.9-10).

The concept of ‘value’ is central to the business model concept (Frandsen et. al. 2014) and thus any analysis of business models presupposes a view about value and how value is created. Recent work by IMP researchers focuses on the nexus between interactions, business models and value. Westerlund (2004) extends the definition of value from that of transaction economics to include the value contributed by industrial buyer-supplier relationships, including economic, strategic and behavioural value, applying the ‘benefits minus sacrifices’ approach of Ravald and Gronroos (1996). Rajala and Westerlund (2004) extend this further to look at how relationship and network interactions enable the development of firms’ assets and capabilities, looking at a number of different business models in the software industry. Cantu et. al. (2008) explore the dynamic connections between increasing complexity in customer demand and in relationship and network interactions that lead to the identification of new opportunities and new value propositions, which in turn lead to the development of new business models (Cantu et. al. 2008, pp. 4-5). Frandsen et. al. (2014) analyse the links between relationships, different actors’ perceptions of value and the development of business models. Their starting point for value is also a benefits-costs approach (p. 5) which views ‘value’ as actor-specific, phenomenological and emergent (p. 7), though they note a need to recognise the role of a softer kind of ‘value’ as well. They associate attributes of the product/service offering with elements valued by customers on the one hand and by suppliers on the other (pp. 5-13), and they explain changes in the business model as a consequence of customers’ and suppliers’ intersecting perceptions of value (p. 7).

Storbacka et. al. (2012) take as their starting point the concept of ‘use-value’ in the manner defined by Gronroos (2011), where value is created by customers when they integrate the provider’s offering into their practices. The provider’s role is to facilitate and support the customer’s creation of use value through the customer–provider relationship (Storbacka et. al. 2012, p. 54). The value itself is then created in ‘value creating systems’ where value is a consequence of interactions, “co-created between various actors within the system” (Storbacka et. al. 2012, p. 53). Value is created through the integration of resources with the customer’s practices; increased ‘use value’ is associated with increased ‘density of resources’, which is achieved through interaction (Storbacka et. al. 2012, p. 57). The business model provides a framework for the activities and practices that integrate resources across the various actors and their value propositions. ‘Practices’ are “more or less routinized actions, which are orchestrated by tools, know-how, images, physical space and a subject who is carrying out the practice” (Storbacka et. al. 2012, p. 56). The business model is thus one of

the tools or mediating devices through which the practices of different actors are orchestrated (Doganova & Eyquem-Renault 2009, Jones & Holt 2008). Storbacka et. al.'s (2012) framework implies, though it does not state explicitly, that the same process of resource integration enables the other actors engaged in the 'value-creating system' – actors other than the customer – also to create some kind of 'use-value' for themselves through these interactions. Clarke and Freytag (2011) note the tendency of the earlier business model literature to focus only on firm level value and they show how interactions in relationships and networks create value, not only for customers and for the firm, but also for suppliers and other actors (Frandsen et. al. 2014, pp. 2-3). Zott et. al. (2011) note that business models create value for a wide range of actors, including customers, suppliers, and alliance partners, as well as for the firm itself, even extending to a broader set of stakeholder beneficiaries across an economy and society more generally (Zott et. al. 2011, p. 1029).

HOW BUSINESS MODELS AND RELATIONSHIP INTERACTIONS CREATE VALUE

George and Bock (2011) note that 'value' is the least understood element of the business model concept (George & Bock 2011, p. 104). Frandsen et. al. (2014) also note that analysing 'value' is both interesting and difficult (Frandsen et. al. 2014, p.3). Amit and Zott (2001) define value as 'transaction value', which is made up of producer profit and consumer surplus (Amit & Zott 2001, p. 503, Brandenburger & Stuart 1996). Later studies extend the notion to include value creation for other actors (Zott & Amit 2010, Storbacka et. al. 2012). However, business research on 'value' has extended the concept substantially beyond the financial consequences of transactions. Holbrook (1999) describes consumer 'value' as an *interaction* between a subject and an object, a *relativistic* comparison of *preferences* amongst objects, a process that varies amongst individuals and contexts (Holbrook 1999, p. 6). It is the consumption *experience*, not the product itself, which is the object of value (Holbrook 1999, pp. 8-9). Consumer behaviour and service quality models note the role of expectations that precede purchase or service experiences (Howard & Sheth 1969, Parasuraman et. al. 1985). Ng and Smith (2012) note that an evaluative consciousness precedes and follows a phenomenological value experience. Gronroos (2004), writing about 'value' in the context of buyer-supplier relationships, refers to 'value' as a process that emerges over time through the interaction of the customer and the supplier (Gronroos 2004, p. 108). Clearly, there are forms of value that extend beyond those that can be described in financial or transaction terms and these involve relationships and interactions with many kinds of actors that continue over time – before, during and after any transaction (Ford et. al. 2010, Helkkula et. al. 2012, Storbacka et. al. 2012). Payne et. al. (2008) note both the complexity of what constitutes 'value' and the multi-layered nature of the interactions involved in value co-creation. If 'value' is experiential and multi-dimensional, if it is a process that can precede and follow interactions, if 'value' as a process can arise before any transaction is entered into, then it is possible that value may be a cause, as well as an effect, of the business model and its associated relationship interactions. Axelsson (2010) notes the importance of relationship and network interactions in creating the activity links and resource ties that facilitate the creation of value (Axelsson 2010, p. 13). Ford and Mouzas (2013) note the important role of the customer in 'service-seeking' to counterbalance the traditional supplier-side emphasis on 'service-offering', with substantial value-creating activities arising jointly through interaction. The role of interaction in value-creation is further highlighted by Bankvall et. al (2014) in discussing service relationships, where "joint problem-coping can be seen as the basis for the offerings/seekings developed through interaction in business relationships" (Bankvall et. al. 2014, p.45). These interactions evolve over time, and may lead to new forms of production

and use of offerings/seekings (Bankvall et. al. 2014, p.45). Frandsen et. al. (2014) note the phenomenological character of value; they focus on perceptions of value, noting the importance of a ‘softer dimension of value’, which includes the mindset of the supplier, transparency, honesty and professionalism (p. 11). These change over time for both customers and suppliers, as the focal firm develops (p. 12). The business model also develops over time as the focal firm adds new activities and changes how the activities are performed (Amit & Zott 2012).

The research reviewed above highlights the extent of the shift of emphasis that has taken place in marketing, from transactions to interactions and relationships (Ford et. al. 2010), in which customers increasingly play an active part in the value-creation process (Sheth & Parvatiyar 1995). Relationships between customers and suppliers and the interaction of producer and consumer processes are sources of value (Gronroos 1994, 2004, 2009, Ravald & Gronroos 1996, Sheth & Parvatiyar 1995). In the buyer–supplier relationship, value for customers ‘emerges’ through interaction levels and episodes, linked as a process over time (Gronroos 2004, p. 104). The value process connects the value proposition suggested by the firm with the value actualisation that occurs only when the customer uses the product (Gronroos 2009, pp. 353-354). Hallen et. al. (1991) note how firms involved in ongoing buyer-supplier relationships tend to adapt products, processes and procedures mutually, in order to meet their own and their counterparts’ needs better, creating additional value in the process (Hallen et. al. 1991 p. 30). IMP research also emphasizes the mutual adjustments that occur through relationship interactions over time and space (Ford et. al. 2010). Tsai and Ghoshal (1998) extend the customer-supplier dyad relationship model to show how value – specifically, in their case, product innovation – is created through social capital generated in intra-firm networks that enable resource exchanges and recombinations, leading to the creation of new value (Tsai & Ghoshal 1998, p. 466). Moller and Torronen (2003) further explore the value-creation potential of relationships with multiple suppliers in relationship networks, noting that relational value arises on a spectrum – higher in high-uncertainty contexts where the focus is on value creation in the future (Moller & Torronen 2003, p. 113). Cantu et. al. (2008) apply the Actors, Resources and Activities model (Axelsson 2010, Ford et. al. 2010) and note how network actor bonds contribute to learning, help in mobilising external resources and enhance companies’ capabilities, orienting the resources and activities towards new shared objectives (Cantu et. al. 2008, p. 6). They note that the increasing complexity in consumers’ needs triggers a requirement to define new value propositions, stimulating heterogeneous actors to engage in network interactions that enable them to devise new business models that will satisfy those needs (Cantu et. al. 2008, p. 5).

Bititci et. al. (2004) also build on the relationship and network model, combining it with the extended value-chain, to develop a theory of how value is created in collaborative networks. They show first of all how value is created cumulatively through a succession of ‘value propositions’ that are linked sequentially along a supply chain, and then broadened into multi-directional flows of ‘value propositions’ across an extended network of enterprises. Each ‘value proposition’ is “an implicit promise a company makes to its customers to deliver a particular combination of values” (Bititci et. al. 2004, p. 252). The ‘value proposition’ thus links “the customers’ expectations with the suppliers’ offer” (Bititci et. al. 2004, p. 253, Martinez & Bititci 2001). Frow and Payne (2011) develop a stakeholder perspective on the value proposition concept. Value creation is thus increasingly seen as a network-based phenomenon, where value-creating systems are organised as ‘value nets’ (Parolini 1999); and the value system of a business net is “a set of specific activities carried out by the actors constituting the net” (Moller & Rajala 2007, p. 898, also Moller & Svahn 2006). Palo and

Tahtinen (2013) also note the important role played by networks in the development of business models for emerging technology firms. The business model concept is thus central to understanding how value is created in networked markets, where ‘value’ is created for all stakeholders (Frow & Payne 2011, Zott et. al. 2011, p. 1029).

VALUE AS A PROCESS OVER TIME

Frandsen et. al (2014, p.17) note that ‘value’ is phenomenological and emergent and they observe the difficulty of analysing the ‘softer dimensions of value’ and how business models might develop to enable more of that kind of value. They also note that ‘value’ is actor-specific (Frandsen et. al 2014, p. 7). The field of axiology provides sound philosophical foundations for a view of ‘value’ as something experienced by every type of actor, not just customers or suppliers. In the late 19th Century, Alexius Meinong theorised that value was a process – a ‘value experience’, based on four central ingredients: (1) The *value subject* who experiences (2) a positive (or negative) emotion called the *value feeling*, which is directed at (3) a real (or a non-existent, but intentional) object – *the value object* – with the value feeling arising as a result of the value subject entertaining (4) a *judgment* about the realisation or existence of the value object (Rescher 1982, p. 51). Christian von Ehrenfels reversed the direction of the process – proposing that human subjects value something because they desire it, rather than the other way around (Rescher 1982, p. 53), providing the philosophical foundations for a ‘motor-affective’ or ‘psychological theory of value’ (Osborne 1933 p. xiii).

Within the psychological school, the American philosopher Ralph Perry (1914) describes value as an expression of “bias or interest” (Perry 1914, p. 149), resulting from irrational, ‘motor-affective’ processes (Perry 1926, p. 27; 1954, Ch. 2). Anything that is an object of interest comes to be invested with value, just as anything becomes a target the moment anyone aims at it (Perry 1926, pp. 115-116; 1954, p. 3). “To like or dislike an object is to create that object’s value. To be aware that one likes or dislikes an object is to cognize that object’s value” (Perry 1914, p. 153). On this view, any organism with consciousness, capable of forming purposeful intentions, can ‘create value’. Perry (1926) develops a view of value as the result of ‘purposive action’ towards an ‘object of interest’, mediated by the ‘expected effects’ of those actions (Perry 1926, pp. 180-212). Purposive action is taken in pursuit of the goal (or interest) in anticipation that it will be effective (Perry 1926, p. 209). Perry’s theory is neutral as to specific value content, allowing different subjects to attribute different ‘value’ to the same object and for the ‘value’ to vary in different contexts. He thus introduces the idea that an object can be invested with ‘value’ in anticipation, and that ‘valuing’ motivates action, thus allowing the initial valuing process to precede any action, interaction, exchange or transaction process. Stephen Pepper (1958, pp. 33-34) builds further on Perry’s foundations, proposing that the core of the valuing process lies in a ‘mediating judgment’ – the judgment that the goal object will, in fact, produce satisfaction (Pepper 1958, p. 72). The goal object continues to be invested with value only so long as the ‘mediating judgment’ is believed to be true. The ‘mediating judgment’ may, in fact, be false; the goal object, once attained, might not lead to a resolution of the tensions triggering ‘interest’. The subject doing the valuing may have to adjust his or her mediating judgment through learning and experience; they may need to adjust their expectations, perhaps redirecting them to a different goal object, before the purpose can be achieved (Pepper 1958, p. 64 & Ch. 5). This provides a mechanism for judgments of value to arise in anticipation, for the anticipation to motivate action towards a goal, and for the judgment of value to vary upwards or downwards, in the light of experience, without any change in the properties of the object itself (Pepper 1958, Ch. 5). Perry (1914,

1926) and Pepper (1958) thus shift the emphasis from ‘value’ as a substantive or property of objects to ‘valuing’ as an action or process, an approach taken further in Aschenbrenner’s (1971) philosophical study of ‘value’ language, which treats the word ‘value’ primarily as a verb – something that *people do* (Aschenbrenner 1971, p. 37, p. 61, p. 66, p. 384). David Stark (2009) similarly observes the way valuing, prizing and appraising are motivators of actions (Stark 2009, p. 9), reintegrating the dichotomy of ‘value’ and ‘values’, which has been drawn as a boundary between economists and sociologists, into a unitary concept of ‘worth’ (p.11).

The Meinong-Ehrenfels ‘motor-affective’ theory of value (Rescher 1982), which Perry (1926) and Pepper (1958) developed further, thus underlies much of the current theory of value as an experience, as a process continuing over time (Helkkula et. al. 2012, Holbrook 1999), and provides a robust and parsimonious framework for analysing how value experiences affect many different kinds of actors’ relationships, including those that form the basis of business models. Once it is accepted that value as interest arises in anticipation (Perry 1926), that this anticipation of value motivates human actions (Pepper 1958), and that the outcomes of those actions confirm or contradict the beliefs on which the interest is based (Pepper 1958), it is possible to conceptualise the multifaceted value perceptions of multiple actors as processes over time and to see these as both drivers and consequences of relationship interactions and therefore also of the business model of a focal firm.

The following definitions of terms clarify the relationship between the actors’ experiences of value, their commitment to action and interaction in relationships with other actors, and to the business model of the focal firm.

ANTICIPATED VALUE

‘Anticipated value’ is the value an actor hopes or expects to receive as a result of an action or interaction they are about to undertake as a consequence of interest (Perry 1926, Pepper 1958). Anticipated value applies to all actors, and not just customers or the founders of firms. Every actor who engages in any action is therefore motivated by ‘anticipated value’ – a form of value that derives from their belief that performing the action will achieve a goal (Pepper 1958, Woodruff 1997). Anticipated value is specific to the subject who experiences the interest. One actor’s anticipated value is largely invisible to other actors until they begin to act. For a prospective customer engaged in service-seeking (Ford & Mouzas 2013), anticipated value involves the anticipation that their goals will be achieved with the use of the service (or product) being offered. For a supplier, anticipated value may involve the hope that the other actor’s business will become a useful distribution channel, leading to further business. For a prospective employee, anticipated value may be the thought that the work will be interesting and will pay them well. Value can be positive (‘attraction’) or negative (expressed by ‘aversion’ or motivation away from the object) (Pepper 1958).

REALISED VALUE

‘Realised value’ is the value actually received by a subject, as a consequence of an action or interaction. Value realisation is the process by which the suggested value is fulfilled or actualised by the customer and other actors involved (Bititci et. al. 2004, Bowman & Ambrosini 2000). Realised value may differ from anticipated value. Actors learn to adjust their anticipations of value based on experience (Pepper 1958). Some of the realised value might not be recognised immediately (Perry 1914); it might be fully recognised only in the light of further experience (Perry 1914, Pepper 1958). Realised value is also specific to an individual subject. The realised value of one actor may therefore not be visible to another

actor, which causes uncertainty when actors attempt to understand each others' motivations. When realised value corresponds to or exceeds anticipated value, this motivates an actor to engage in a repeat cycle of the activity, consolidating any associated interactions into patterns of relationships. Similarly, if the anticipated value is not realised, or is insufficient, the actor will most likely refrain from repeat cycles of the activity, weakening or terminating any associated relationships.

APPLYING ANTICIPATED AND REALISED VALUE TO RELATIONSHIPS AND BUSINESS MODELS

Perry (1926) and Pepper's (1958) theory of value, by being simple, applicable to any kind of actor and neutral as to specific value content, makes it easier to discuss all the different kinds of value that relationship interactions and business models enable. It incorporates the effects of learning and adjustment over time. And the concepts of 'value anticipation' and 'value realisation' make it possible to analyse what motivates actors to engage in relationship interactions, in a particular business model, and what keeps them engaged. Furthermore, using the terms 'value anticipation' and 'value realisation' in place of the more conventional terms 'value creation' and 'value capture (or appropriation)' (Bowman & Ambrosini 2000, Leepak et. al. 2007) achieves two other useful purposes: first, it places the value experience – before, during and after – wholly within the realm of the human subject who is *doing the valuing*; and second, it avoids the implication that somehow a fixed quantum of 'value' comes to be created in any action or interaction, that this quantum is somehow stationary in time, and that the actors are always in competition with each other to capture or appropriate a share of it.

In the business context, entrepreneurs launch new ventures in the hope of gain (Penrose 2009), which is an anticipation of value. They design a future promise of value to customers in the form of a value proposition before engaging with them (Gronroos 2009), and the business model emerges as a cognitive framework for delivering that value proposition (Doganova & Eyquem-Renault 2009, Tikkanen et. al. 2005). Interactions in relationships and networks constitute the mechanism through which value propositions are tested and adapted, actors begin to commit resources, and real activities are undertaken (Bankvall et. al. 2014, Rajala & Westerlund 2004, Westerlund 2004). Value is realised when the customer integrates the offer into their processes and practices (Bititci et. al. 2004, Gronroos 2009, Storbacka et. al. 2012). Both the customer's and the entrepreneur's anticipations of value may be confirmed as true (Pepper 1958) through their engagement processes and interactions (Payne et. al. 2008). This process applies equally to the other actors involved: suppliers, resource owners, employees and other stakeholders, each of whom is motivated by their own individual anticipation of value. Business models integrate the resources, activities and practices of multiple actors (Storbacka et. al. 2012). They frame the interactions of the various actors which enable the creation of value (Mason & Mouzas 2007, Munksgaard 2011). These networks of business activity are thus motivated by complex intersecting flows of value anticipations, value propositions and value realisations facilitated by the relationships and interactions occurring amongst all the actors (Bititci et. al. 2004, Mason & Mouzas 2007, Normann & Ramirez 1993, 1998, Parolini 1999). Future-oriented intentions and expectations play an important part in the formation and evolution of interactions in business relationships (Ford et. al. 2011). Building on these foundations, the present paper proposes that each actor's prospective judgments of value determine the nature and degree of their willingness to enter into relationships with other actors and to engage in the actions and

interactions suggested by the business model. ‘Value’, in the sense of an anticipation of value, is therefore an input to the formation of relationships and interactions and therefore also to the business model, motivating the actions that bring it about and sustain it. Individual actors’ anticipations of value motivate them to offer resources, to engage in activities, and thus to create inter-actor relationships. ‘Value’ is also an outcome, in the sense of a realisation of something that an actor values. Realised value confirms (or disappoints) the anticipated value and thus motivates either a continuation of the interactions or a disengagement by the actor in question, depending on how each actor adjusts his or her ‘mediating judgment’ (Pepper 1958). The ‘mediating judgment’ may be sticky; it may take several cycles of disappointment for an actor to change their judgment about an interaction from which they anticipated value. This same process can be applied equally to every kind of actor: to customers, to firm founders, to shareholders, to employees, to suppliers, to alliance partners and so on. The only thing that varies is the specific content of each actor’s personal valuing process, a process that is only visible to other actors when observable behaviour follows (Pepper 1958). For the relationship interactions (and therefore the business model) to be sustained, every actor must be realising something that they value from the process. The joint mechanism of anticipated and realised value thus functions as the glue that motivates and binds the relationships on which the business model depends.

RELATIONSHIP INTERACTION PATTERNS AND BUSINESS MODELS EVOLVE OVER TIME

Business models develop and evolve through a mixture of deliberate and emergent processes. They rarely emerge, complete and perfected, in a single moment of inspiration; they are more usually the end result of a process of discovery and refinement aimed at replicating successful business formulas in large scale to achieve growth in new environments (Winter & Szulanski 2001, pp. 730-731). Business models may be discovered (McGrath 2010), developed and exploited through processes of trial-and-error learning (Andren et. al. 2003, Morris et. al. 2005, Winter & Szulanski 2001) and experimentation (Sosna et. al. 2010). Business models may also be the result of an intentional and deliberate design process (Osterwalder & Pigneur 2010, Storbacka et. al. 2012, Zott & Amit 2010). It is also clear that firms’ ‘activity systems’ evolve over time (Zott & Amit 2010, p. 218). This may be because the inherent complexity of the actor networks and interrelationships makes it impossible for entrepreneurs and managers to anticipate or comprehend all of the relevant considerations at the outset (Andren et. al. 2003, Ford et. al. 2011). Business interactions are also conceptualised as processes evolving over time, where the outcomes of one interaction flow seamlessly as inputs into the next through joint activities and practices (Andersson & Mattsson 2010, Bankvall et. al. 2014, p. 45, Ford et. al. 2010, p.86). The business models which result from relationship interactions therefore also evolve continuously over time (Bankvall et. al. 2014, Frandsen et. al. 2014, p.16).

Business models may be ‘co-designed’ or ‘co-produced’ through relationship and network interactions evolving over time, a process common to situations of high complexity (Clarke & Freytag 2011, Frandsen et. al. 2014, Storbacka et. al. 2012, Tikkanen et. al. 2005, Wilkinson & Young 2002, p. 129). Entrepreneurs learn and adapt their start-up business models in real-time as they realise their vision of the desired business (Andren et. al. 2003). Business models are dynamic – they constantly evolve as “managers and frontline workers learn new and better ways of doing things” (Mason & Leek 2008, p. 774). Demil and Lecoq (2010) show how business models evolve as a fine-tuning process, including both intended

and emergent changes between and within the core components of the firm's business model, in response to both external environmental triggers and deliberate decisions made by managers (Demil & Lecoq 2010, p. 235). They suggest that firms need to have the capability to change and evolve their business models while at the same time building and maintaining a degree of 'dynamic consistency' based on their core sources of competitive advantage (Demil & Lecoq 2010, p. 230). Clarke and Freytag (2011) show how business models are co-created through resource-embedding interactions that take place at the firm-level, through inter-firm connections at the relationship-level, and through complex configurations at the network level (Clarke & Freytag 2011, p. 10).

Entrepreneurs embarking on a new business venture leverage their existing close relationships and develop new ones, interacting across an expanding network of other actors (Dubini & Aldrich 1991, Hoang & Antoncic 2003), thereby increasing their access to customers, resources and new information (Birley 1985, Yli-Renko et. al. 2001). Relationship interdependencies develop amongst the collaborating actors over time (Ford et. al. 2011), particularly in complex project-based businesses (Forsstrom 2005), and give rise to multiple opportunities for the co-creation of value, many of which may be initiated by actors other than the focal firm (Lusch et. al. 2010, Prahalad & Ramaswamy 2004a, 2004b, Ramirez 1999, Vargo & Lusch 2004). Through interactions and resource exchanges, self-interest broadens to mutual interest as actors begin to anticipate the effects of their actions on network partners (Anderson 1995). The interlinkage of multiple actors' value propositions and resource exchanges (Frow & Payne 2011, Storbacka et. al. 2012, Wilkinson & Young 2002) through these interactions constitutes a mechanism of value co-creation (Saarijarvi 2012) which facilitates the development of the new business.

As the focal firm interacts with resource owners, customers and other partners, its business model becomes linked to theirs through mutually aligned activities and practices (Brennan et. al. 2003, Mason & Spring 2011, p. 1038, Walter & Ritter 2003, Wilson 1995, Wilson & Vlosky 1998, Wilkinson & Young 2002). Interacting business models are thus co-created by actor networks (Nenonen & Storbacka 2010, Storbacka et. al. 2012, pp. 65-68, Storbacka & Nenonen, 2011, p. 66). Mutual interlinkage creates structural bonds (Ford et. al. 2011, Wilson 1995) that may help to stabilise the interacting business models; the parties adjust mutually and iteratively "until a sufficient degree of configurational fit has been achieved" (Storbacka et. al. 2012, p. 65) through a "mutually compatible ecology of theories and practices" (Wilkinson & Young 2002, p. 126). Some degree of stabilisation is "a prerequisite for efficient operations, enabling long production runs and learning curve effects" (Storbacka et. al. 2012, p. 67). However, mutual interlinkages also create dependencies, which mean that any changes affecting one actor may trigger changes in the activity patterns of other actors (Ford et. al. 2011, Hallen et. al. 1991), and thus in their business models. Dependencies also constrain the nature and direction of changes (Ford et. al. 2011, Wilson 1995). Changes in the patterns of network interaction thus trigger evolutionary changes in the firm's business model (Araujo & Easton 2012, Hite & Hesterly 2001, Munksgaard 2011). The networks thus evolve over time (Hite 2005, Hite & Hesterly 2001), with consequences for all the actors engaged in them (Slotte-Kock & Coviello 2010). Business models are thus co-developed through interaction and knowledge exchanges amongst actors (Demil & Lecoq 2010, Mason & Leek 2008, Munksgaard 2011, Storbacka et. al. 2012). Network interactions thus cause continual mutual adaptation (Hallen et. al. 1991) throughout the subsequent life of the business (Demil & Lecoq 2010).

The next section presents empirical evidence for these processes from the 20-year history of an Australian software company – ‘Z-SYS’ – whose relationship interactions and business model evolution illustrates the processes described above.

METHOD

The empirical data was collected iteratively from interviews with the company’s founders and key personnel, from original company documents and from general business media reports between 2004 and 2014. A preliminary version of the study was developed as a teaching case for a graduate course analysing the growth dynamics of high-tech SMEs, in 2004. The teaching case was workshopped with classes of graduate students in 2004 and 2005, with the permission of the company. Informal follow-up interviews were conducted in 2005 and 2006 after the company was acquired by one of its international competitors. In 2009, permission was obtained from the company’s founders to conduct more detailed interviews for the purpose of case study research. Multiple interviews were conducted with the two founders of the company, both of whom were actively engaged in day-to-day operations from the first concept of an opportunity, to the formal creation of the company in 1985, through its development and growth, and up to its acquisition in 2005. Multiple interviews were also undertaken with two early-stage (pre-1996) employees of the company (former PhD students of the founders) and also with four later-stage (post-1996) employees of the company (none of them being former students of the founders). All eight informants held shares in the company at the time it was sold in 2005. Interview data was cross-checked against contemporary company documents and general business media in a forensic approach consistent with the methods recommended for company case analysis (Eisenhardt 1989, Pettigrew 1990, Yin 2009).

From a detailed analysis of the company interviews, key events in the history of the company were identified, sequenced and plotted by date on an Excel matrix. Dates were validated by reference to company documents contemporary with the events. Events were sequenced and ‘chained’ based on multiple informants’ accounts of antecedents and consequences (Bairstow & Young 2012), and ‘contingent relationships’ between the events were established (Abbott 2001, Griffin 1992). Event sequences and contingencies were also checked with informants via several rounds of follow-up discussion and correspondence. Major periods were identified through interviewees’ accounts of discontinuities (Langley 1999) expressed in forms such as: “X was a major turning point for us, because...”, cross compared with objective company data such as growth in revenues, profits, average project size, staff numbers, the relative proportions of domestic and international work, and explicit statements in strategic plans and other company documents. Chained sequences of events were then plotted with causal linkages indicated by arrows connecting the events in accordance with Sterman’s (2000) approach to business dynamics. Significant events were enchainned according to temporal and logical contingency (Abbott 1990, 2001, Abell 2009, Griffin 1992, Pentland 1999). Event sequences were then analysed using theories explaining evolutionary change over time (Dubois & Gadde 2002, Nelson & Winter 1982, Van de Ven 1992). Overall, 15 episodes of substantial changes in the company’s business model were analysed. The case study which follows analyses two of these episodes of substantial discontinuity (Langley 1999, Bairstow & Young 2012) in the business relationships of Z-SYS and consequential changes in the company’s business model, motivated by anticipations and realisations of value – (1) the transition from consultancy services to software development and (2) the transition from domestic customer focus to strategic international business.

CASE EVIDENCE: THE EVOLUTION OF THE BUSINESS MODEL AND RELATIONSHIPS OF AN AUSTRALIAN SOFTWARE COMPANY

Z-SYS was founded in 1985, initially as a part-time applied mathematics consultancy, by two academics at 'Technology University of Australia' (TUA). The founders believed they could apply their mathematical skills to solve operational problems in large organisations in the public and private sectors. In the late 1990s, the company expanded rapidly beyond Australia and in 2005 it was acquired by one of its international competitors. Over its 20-year history, Z-SYS evolved through three distinct business models: 'Applied mathematics consultancy', 'Specialty software developer', and 'International systems supplier.' In each of these major phases, both the company's business model and the patterns of relationship interactions with other actors changed substantially. The discussion below focuses on two significant changes in key business relationships that occurred during Z-SYS' two major business model transitions, triggered by changes in anticipated and realised value.

FROM APPLIED MATHEMATICS CONSULTANCY TO SOFTWARE DEVELOPER

Over the first ten years, the founders of Z-SYS undertook a large number of consultancies applying mathematical solutions and computer code to operations research problems for clients. As their reputation grew, computer systems companies began inviting them to participate in consortium bids for government contracts, anticipating that having these smart mathematicians on the team would help to differentiate their project bids. The commercialisation arm of the University, 'TUAC', also actively promoted their offerings. A major breakthrough came in 1992 when, as part of a consortium bid led by 'TUAC', Z-SYS was involved in developing a software system for A-CORP to optimise its call-centre operations. This project, which lasted over several years, involved the creation of new relationships involving not only 'TUAC' and the customer A-CORP, but also specialist service providers, computer systems companies and A-CORP's Government stakeholders. Z-SYS worked closely with the customer, with an ISO-accredited quality management company, 'QualSys', and with 'Jay-Computer Systems'. The work involved less mathematical analysis and more software development, and Z-SYS hired more people with computer software skills to do this work. Up til that time, Z-SYS' code had comprised problem-solving routines only suitable for use by trained specialists. Now they had to develop software that could be used reliably by semi-skilled call-centre operators via simple screen interfaces, 24/7. This involved an order of magnitude increase in software sophistication. When the developed system was rolled-out at A-CORP, Z-SYS also became involved in training the call-centre operators.

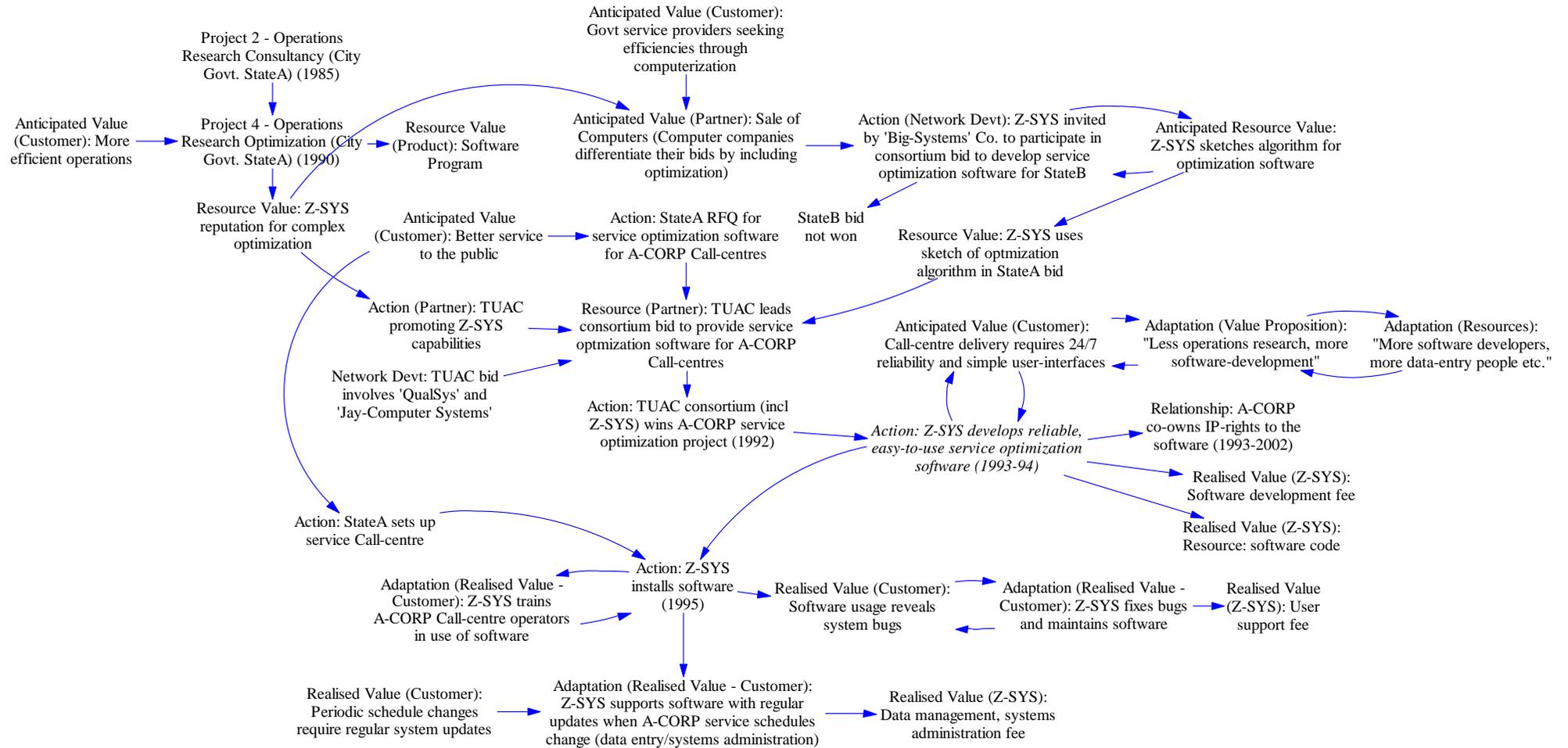
The founders' reputation and their relationship with 'TUAC', the value anticipations of those actors, led to Z-SYS' involvement in the project, and the nature project work itself further transformed the actors, resources and activities required. The project for A-CORP differed substantially from the consulting projects the company had done previously; it was so complex that it required the continuous deployment of Z-SYS staff in ongoing interactions to support and maintain the software. The technical relationship was so close during the development period that A-CORP claimed a share of the intellectual property rights in the final software. From Z-SYS point of view, this relationship was motivated not only by the anticipated (and realised) fee revenue, but also by the founders' anticipating that A-CORP would be a valuable reference site for the still young company; this anticipation was indeed realised. It was also anticipated that A-CORP would make a significant contribution to the

ongoing development of the software. Further, to ensure ongoing operations, Z-SYS set up a permanent team to support and maintain the software on behalf of A-CORP.

By 1995, when the software went live at A-CORP's call centres, Z-SYS' relationships and its business model had changed quite fundamentally. Figure 1 illustrates the events in this transition. Over several years, through a number of incremental changes, the original applied mathematics consultancy which undertook discrete projects, sometimes providing specialist software code in exchange for fees for hours spent, had been transformed into a software company, developing, deploying, training, supporting and maintaining software in continuous interaction with a prime customer in exchange for software development fees and ongoing monthly maintenance and support fees. In addition, that customer had also become a strategic partner, bound to Z-SYS via shared IP rights in the software. Each of the events in the process are marked to show how anticipated value motivated action, which resulted in resource commitments or in the creation of new resources which helped to realise value, as well as the value realised by each of the actors as outcomes of each of the actions and activities undertaken. The overall process graphically illustrates a significant transformation of the relationships and the business model of the focal company.

For most of the next decade, every deployment of the software involved Z-SYS sharing licence fees and royalties with A-CORP. As events turned out, however, A-CORP contributed little to the ongoing development of the software and Z-SYS experienced dis-value in having to negotiate and share revenue with A-CORP every time the software was to be deployed by a third party. After multiple cycles, Z-SYS judged (anticipated) that it would realise greater value by buying back A-CORP's share of the software rights and reverting from a partner relationship back to an ongoing customer-supplier relationship. For the founders of Z-SYS, their software projects were now realising such substantial value that they decided to leave 'Technology University' and work full-time on building the company. Just prior to this, the university's commercialisation arm 'TUCO' was restructured and, from 1996, it ceased to have any interest in software ventures. 'TUCO' thus ceased to value the relationship with Z-SYS and stopped promoting its business. Additionally, Z-SYS had by then obtained its own ISO quality certification, and so the anticipated value of working with consortium partners was reduced from its side also. These three events together resulted in Z-SYS terminating its agency relationship with 'TUCO', and increasingly bidding and winning software development projects in its own right.

Figure 1. Relationship Linkages Leading Z-SYS from Operations Research Consulting to Software Products and Services



(Note: Item in italics links to events in other process diagram.)

FROM DOMESTIC TO STRATEGIC INTERNATIONAL BUSINESS

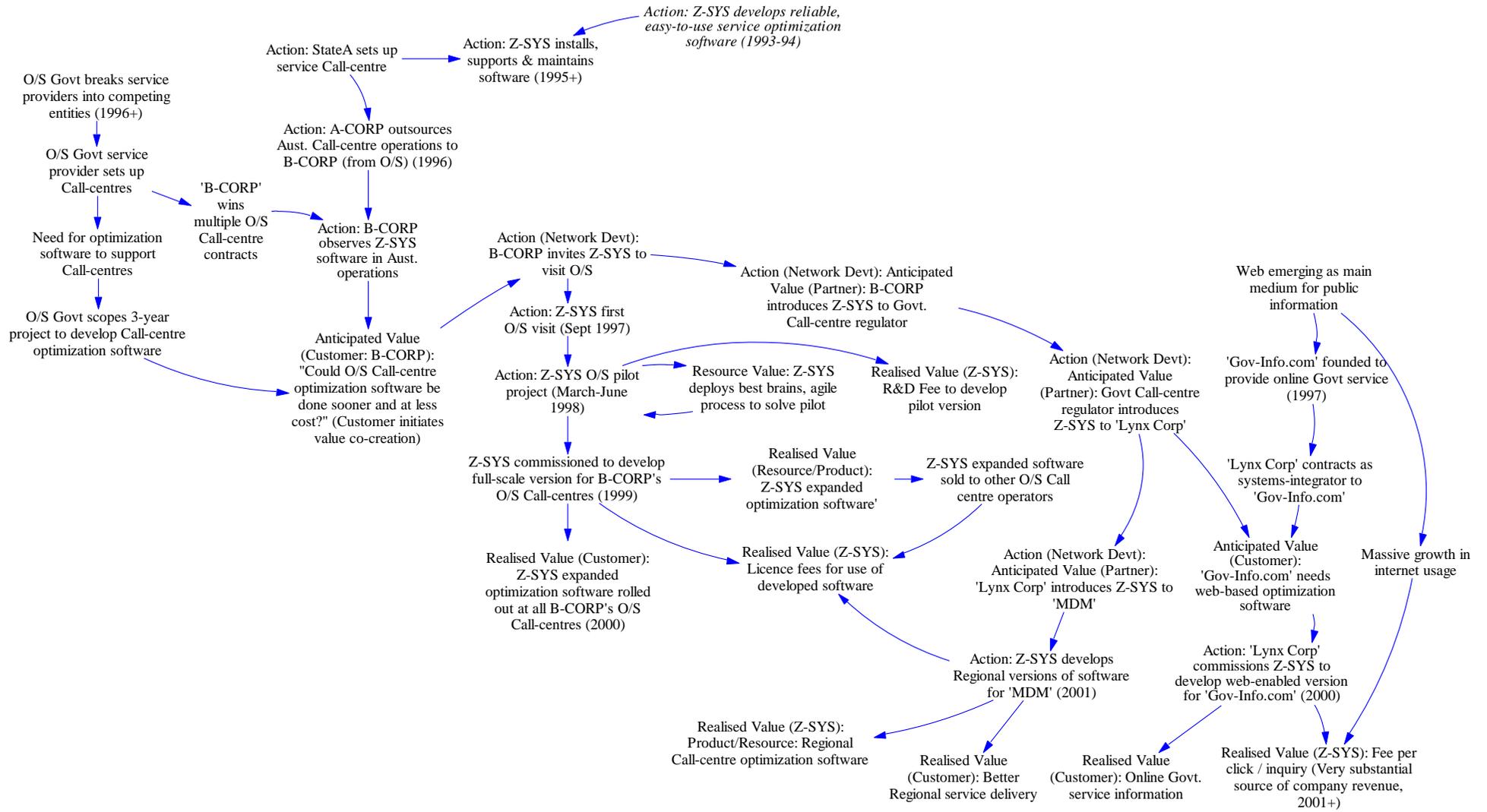
In 1996, two unrelated external events happened: (1) The Government of 'Overseas' (O/S) decided to break up the provision of government services into several competing entities, each of which set up call-centres to support service delivery, many of which came to be operated by B-CORP under outsourcing contracts; and (2) A-CORP in Australia decided to outsource the operation of its call-centres to B-CORP also. B-CORP was aware of the complexity of optimizing call-centre services and the Government of 'O/S' agreed to fund a 3-year project to develop optimization software for use by its service providers. However, when B-CORP took over the operation of A-CORP's call-centres in Australia, they discovered that Z-SYS software was already solving the optimization problem there. B-CORP anticipated that Z-SYS software might give them an edge over their 'O/S' competitors, who would have to wait 3 years for something similar to emerge from 'O/S' Government's project. B-CORP then invited the founders of Z-SYS to visit 'O/S' to observe their operations and see whether their system could be expanded and applied there. From early 1996, these interactions led Z-SYS to begin looking upon B-CORP as a potential marketing partner for its expansion into 'O/S'. Armed with B-CORP's introductions, Z-SYS founders visited 'O/S' in September 1997, where they called on B-CORP and on the Government's call-centre regulators. In December 1997, Z-SYS went again to 'O/S' and in March 1998, they wrote a proposal to develop a pilot version of the software for one of B-CORP's larger call-centres. B-CORP funded the pilot project as an R&D venture, which was developed between March and June 1998. After the successful pilot in July, B-CORP commissioned a full-scale expansion of the software to support all its operations in 'O/S'. This contract entailed another change in the payment model; B-CORP did not pay for the development of the full scale system, but it agreed to license the software if Z-SYS would build it. Z-SYS would retain the IP and could sell the system to other operators. (This was one of the triggers to Z-SYS ending its strategic partnership with A-CORP in Australia.) The software development work was done in Australia during 1998-1999 and the software went fully operational at B-CORP call-centres in 'O/S' in 2000. The system was then successfully sold to a number of other government-sponsored call-center service providers.

Interactions with B-CORP and the 'O/S' Government call-centre regulator during the initial project in 'O/S' led to two other relationships that resulted in further valuable projects for Z-SYS. By 1997, web-based operators were beginning to compete to deliver government information services online and a startup web-based information services company 'Gov-Info.com' was formed. The Call-centre regulator introduced Z-SYS to 'Gov-Info.com's systems integrator, Lynx Corp, who were seeking optimization software to support web-based services. This led to a new contract for Z-SYS to develop a web-based version of its expanded 'O/S' software system. Lynx Corp also introduced Z-SYS to another company, 'MDM' who were seeking to develop region-specific subsets of the 'Gov-Info' service, and this led to further software development opportunities. Thus, between 1996 and 2000, through a steadily increasing chain of new relationships and expanding network linkages in 'O/S', Z-SYS incrementally expanded from an initial, opportunistic foray into servicing one particular customer in 'O/S' to having a viable and growing base of ongoing software and service customers there, sufficient to support the establishment of a wholly-owned subsidiary in 'O/S'. Between 1997 and 2000, Z-SYS' revenue from 'O/S' operations grew to exceed the company's revenue from its original Australian customer base. Between 2000 and 2004, Z-SYS continued to expand, using its subsidiary in 'O/S' to win additional software and service contracts in other neighbouring countries. Figure 2 illustrates the incremental steps in this transition, whereby Z-SYS developed from a purely domestic developer of optimization

software to become a strategic international player in this specialised domain. At each step, changes in anticipated value by particular actors motivated actions and the commitment of resources that led to realisations of value, which in turn confirmed the anticipated value, leading, in this case, to further new relationships, which led, in turn, to further expanded opportunities. Major changes in the relationships and network interactions were triggered by these incremental steps, which led also to substantial changes in Z-SYS business model. For example, the company's new relationships with web-based service providers led to a change in the revenue model whereby the company earned a 'fee-per-click' from its web-based versions of the software. As usage of the Internet expanded rapidly through the late 1990s and early 2000s, this became a substantial source of new value realisation to Z-SYS.

Throughout this period, the company grew dramatically under the momentum of new projects. Between 1997 and 2000, total employees grew from 18 to 32. The close interworking of Z-SYS software with clients' operations led to increasingly close management relationships, with the result that, in several instances, key customers transformed themselves into marketing partners, as happened with both B-CORP and with Lynx Corp. Each new relationship thus led to other introductions, new opportunities and further expansions and adaptations of the Z-SYS software, steadily broadening the product range and deepening the company's specific knowledge of the systems requirements of Government information service delivery. Through strategic relationships, and by successfully leveraging the learning from one project to the next, Z-SYS developed a strategic international business. Each international project triggered more 'trial-and-error learning' (Zahra et. al. 2006) and the development of additional resource value in the form of new routines, practices and software tools, bringing further substantial changes to Z-SYS' patterns of relationships and interactions and to the company's business model. In its later years, Z-SYS also engaged with internet-based technology start-ups targeting the sector with web and mobile applications of the company's core software. The international success of Z-SYS – still a very small company with only 50 employees by 2004 – through these expanding network ties, brought it to the attention of larger international competitors who suddenly found themselves losing government tenders to this relatively unknown company from Australia. Finally, in 2005, the founders/owners of Z-SYS sold the company to one of their competitors in a successful trade sale.

Figure 2. Resource Ties and Network Links Leading Z-SYS to Strategic International Business Operations



(Note: Item in italics links to events in other process diagram.)

DISCUSSION: DYNAMIC INTERACTION OF VALUE, FOCAL FIRM RELATIONSHIPS AND THE BUSINESS MODEL, OVER TIME

In 1985, the founders of Z-SYS identified an opportunity to apply their specialist mathematical expertise to solving real world problems (Alvarez et. al. 2013, Kirzner 1997, Klein 2008). The founders developed a conceptual business model which entailed anticipated value for the founders (Amit et. al. 2000), a potential value proposition for intended customers (“improved operational efficiency”), and preliminary ideas about resources they might need to carry out the business, many of which came from relationship partners such as their own post-graduate students (Bhide 2000). ‘Technology University’s Commercialisation Office’ (‘TUCO’) was an important initial partner, acting as the contracting agency for projects with external clients. The early projects realised value for customers, who gained new efficiencies. The founders realised value in the form of income, and also in new knowledge, some of which was published as research. The post-graduate student employees realised multiple forms of value: stimulus to research resulting from professional exposure to highly relevant issues, payment for the work, some of which was also published as research. The early projects thus confirmed many of the initial value anticipations, and motivated continued engagement with the business.

As Z-SYS developed, one project at a time (Lind 2006, Pisano 2000), the company’s activity links and resource ties with other actors steadily broadened, stimulating incremental changes to both its relationships and its business model (Mason & Spring 2011, Storbacka et. al. 2012, Storbacka & Nenonen, 2011). The company thus evolved by small steps over about ten years from an applied mathematics consultancy to a company that developed speciality software. Initially, the partnering relationship with ‘TUCO’ grew stronger on both sides through repeated interactions (Ford et. al. 2011). ‘TUCO’ led the company into its first major software development venture by involving Z-SYS in a consortium bid for a very large organisation – A-CORP. Major computer companies also began to recognise Z-SYS specialist expertise and involved them in other projects for their customers, motivated by the anticipated value that having a team of specialist mathematicians in the consortium would be a useful differentiator in competitive tender bids. As a result, new relationship interactions were formed and the company’s network ties and resource links became more complex, resulting in changes to Z-SYS’ relationship networks and its business model. This led, over time, to the gradual interlinkage of Z-SYS business model with those of other actors (Storbacka & Nenonen 2011).

The relationships with A-CORP and with ‘TUCO’ illustrate the dual character of actor bonds – as both enabling and constraining (Ford et. al. 2011). At one point in time, the founders of Z-SYS valued these relationships because of particular anticipations of value that were expected to follow from interacting with them. In the early stages of the relationship (1992-1996) these anticipations of value were confirmed by interactions that led to value being realised by the firms jointly. Later on, however (after 1996), in both relationships, changes affecting the actors, some initiated in the indirect network, led to the earlier anticipations of value not being realised. In the case of ‘TUCO’, after Z-SYS obtained its own ISO certification, it had less dependence on actor bonds for that resource, which reduced one of the anticipated sources of value from the ‘TUCO’ relationship. Further, an externally initiated restructuring of ‘TUCO’ changed its strategic priorities and it ceased promoting Z-SYS’ offerings. As a result of these two events, the relationship with ‘TUCO’ ceased to be valued by the founders of Z-SYS. In the case of A-CORP, Z-SYS realised value of a completely

unexpected kind, when B-CORP acquired A-CORP and discovered the capabilities of the Z-SYS call-centre optimization software. B-CORP's invitation to visit 'Overseas' then triggered a whole new series of relationships and new opportunities for Z-SYS. However, from 1998 onwards, as the 'O/S' projects began to offer new growth potential for the company, Z-SYS' founders anticipated that the earlier strategic partnership with A-CORP would become a source of dis-value because of the need to negotiate and share revenue with them every time they sold another deployment of the system, particularly since A-CORP was making no contribution to the ongoing development of the software. As a result, they negotiated to buy back A-CORP's share of the IP rights in the software. These interactions illustrate the dual role of actor bonds, also how particular relationships that are a source of value at one time may become a source of dis-value under other circumstances. They also illustrate how the anticipation of value (or in one case, dis-value) motivates actions (engagement/disengagement), and how the realisation of value motivates actors to continue engaging in the relationship. These event sequences illustrate how changes in the anticipations and realisations of value bring about changes in both the relationships and in the business model of the focal firm.

CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

This paper shows how patterns of relationships amongst actors and the business model of a focal firm co-evolve through dynamic interactions over time, driven by each actor's anticipations and realisations of value. The case shows how important it is for every actor, not only the customer and the focal firm, to be realising value, for the relationships and the business model to be sustained. The psychological or 'motor-affective' theory of value as interest (Perry 1914, 1926, Pepper 1958) provides a parsimonious theory of value that can be applied to every kind of actor – not just to the firm and its customers but also to the firm's founders as individuals, its employees, shareholders as well suppliers, strategic partners and any other actors on whom the business model depends. This theory is entirely compatible with IMP research on the interactive processes of value creation (Ford & Mouzas 2013) and on the emergent and interdependent nature of business models (Bankvall et. al. 2014, Clarke & Freytag 2011, Frandsen et. al. 2014); it contributes a process explanation of the motivations behind actors' interactions with each other and with the business models of other actors, why they engage and why they sometimes disengage, and how this process drives the evolution of the business model. It is also consistent with current theories of value as an experience continuing over time (Gronroos 2004, 2011, Helkkula et. al. 2012, Ng & Smith 2012, Parasuraman et. al. 1985, Sheth et. al. 1991, Woodruff 1997).

Contribution to theory

By building on Perry (1914, 1926) and Pepper's (1958) theory of 'value as interest', this paper shows how value processes can be explained for actors of all kinds, not just customers and the owners of firms. By applying equally to the value processes of any actor, this theory simplifies the discussion of value in relationship and network contexts, where the multiple intersecting interests of many kinds of actors need to be taken into account. IMP research has broadened the discussion of value by considering how the 'service-seeking' of customers is combined through interaction with the 'service-offering' of suppliers (Bankvall et. al. 2014, Ford & Mouzas 2013) to yield value propositions and valuable resource exchanges. The theory of value as interest enables a more general analysis of value processes that can be applied equally to actors of all kinds.

Pepper's (1958) process theory of value also simplifies the explanation of the conceptual relationships between value on the one hand, and interactions and business models on the other. Most research to date treats the relationship as unidirectional: value emerges as a consequence – of interactions on the one hand (Bankvall et. al. 2014, Ford & Mouzas 2013) and of business models on the other (Amit & Zott 2001, Clarke & Freytag 2011, Frandsen et. al. 2014). By applying Pepper's (1958) theory of value as a process, this research shows that 'value' may be an antecedent of interactions and of business models as well as being a consequence. The concepts of 'anticipated value' and 'realised value' make this clear. All actors anticipate value; the anticipated value is based on a 'mediating judgment' that the goal object will realise value for them; the anticipated value motivates them to act; after taking action, they reassess the 'mediating judgment' based on their experience; this may lead them to adjust their anticipation of value in subsequent activity cycles. The theory enables a dynamic analysis of value processes, explaining why actors change their judgments of value and what happens when they do. The paper proposes this ongoing process of value anticipation, action and value realisation as the central mechanism by which business relationships change and therefore also business models change, as the interactions confirm or disappoint each actor's anticipations of value, in repeated cycles of activity over time.

Implications for practice

There is an increasing range of practical tools available to help practitioners manage relationships and networks (Ford et. al. 2011) and design new business models (Chesbrough 2006, Chesbrough & Rosenbloom 2002, Johnson 2010, Osterwalder & Pigneur 2010). However, many of these tools tend to imply that relationships and business models come about as a result of a deliberate design process, and that, once they have been developed, they provide a more or less fixed template for value propositions, resource exchanges and interactions by the relevant actors. An alternative view suggests that relationships and interactions may be emergent and unpredictable (Wilkinson & Young 2002, Wilkinson et. al. 2005) and that business models are also emergent phenomena (Demil & Lecocq 2010, Mason & Leek 2008). Business models may initially be implicit (Casadesus-Masanell & Ricart 2010, Teece 2010), partial and incomplete cognitive maps (Mason & Leek 2008, Morris et. al. 2005, Osterwalder et. al. 2005), prospective mental representations of how a business idea might be made real (Doganova & Eyquem-Renault 2009). They are progressively made explicit through dialogue (Cornelissen & Clarke 2010, de Koning 2003) with close relationship partners (Dubini & Aldrich 1991). Through this dialogue process, patterns of interrelationships form and interacting practices emerge (Wilkinson & Young 2002); actors form their own meanings and judgments (Tikkanen et. al. 2005) about the potential value of engaging with others in a network, in which their value propositions become part of another actor's value process (Alves & Roque 2005, Bititci et. al. 2004, Parolini 1999).

The analysis presented here confirms the findings of IMP research that business models are emergent phenomena (Bankvall et. al. 2014), that they arise through interactions and relationships (Clarke & Freytag 2011, Frandsen et. al. 2014), and that they evolve over time (Bankvall et. al. 2014). This suggests that there are limits to the extent to which managers can formally and deliberately design a business model prior to enacting a new business. Uncertainty in the operating environment and the complexity of the actor networks and interrelationships (Ford et. al. 2011) make it impossible for managers to predict in advance exactly how a conceptualised business model will work in practice (Andren et. al. 2003, McGrath 2010). This places a premium on rapid learning and capability development by the

management team in the early days of any new venture (Eisenhardt & Martin 2000, Newbert 2005). The relationships and the business model continue to adapt and evolve flexibly through processes of trial-and-error learning (Zahra et. al. 2006), as the various actors engage with each other and develop their understanding of the value anticipations of other actors and the actions necessary to realise value for themselves and for others (Frow & Payne 2011).

There is still a role for formal business model design. It is important for managers to have a cognitive map to guide them (Mason & Leek 2008, Morris et. al. 2005, Sosna et. al. 2010), even accepting that it may be partial, incomplete, and subject to emergent adaptation, and shared across the related actors (Bankvall et. al. 2014). It becomes important to have an explicit account of the focal firm and how it operates when the founders need to access resources owned by other actors (Baker et. al. 2003, Jones & Holt 2008). The articulation of the business model in some durable form creates a business model artefact (Jones & Holt 2008) or mediating device (Doganova & Eyquem-Renault 2009) that helps to make the focal firm meaningful to other actors. Once there is an explicit, formal description of the business model, this begins to have independent agency (Mason & Spring 2011, Simmons et. al. 2013). Other actors use it to interpret the intentions of the focal firm and to judge the extent to which engaging with it will help them to realise their anticipations of value. However, explicit business model artefacts become fixed in time while the enacted business model continues to be subject to incremental, evolutionary changes as actors' anticipations and realisations of value influence their ongoing interactions. Managers therefore need to be alert to the incremental changes and regularly review the explicit business model artefacts they use to orient themselves and other actors. There is a balance to be struck between the evolutionary benefits of incremental business model evolution and the disciplined critical thinking involved in formal strategic adaptation in response to radical, discontinuous change events arising in the external environment (Bhide 2000, Johnson 2010, Sosna et. al. 2010, Teece 2010).

Most importantly, when conceptualising new interactions and new business models, managers need to understand not only the value sought by customers but also the kinds of value sought by every other actor with whom the focal firm will interact and to develop a business model through which every actor realises value (Frow & Payne 2011, Storbacka et. al. 2012, Zott & Amit 2007, 2010). They need to consider the service-seeking behaviour of these actors (Bankvall et. al. 2014, Ford & Mouzas 2013) just as much as they consider their own service-offerings; they need to decide how they will express their understanding of those actors' anticipated value in specific value propositions, and how they will enable those value propositions to be realised through joint actions. They need to be aware that the anticipated and realised value for other actors may not always be evident to them. Value co-creation approaches (Prahalad & Ramaswamy 2004a, 2004b) may help bring them to light. Each actor's anticipations and realisations of value will also evolve dynamically over time, based on their experience with the focal firm's business model. Actors may increase or decrease their level of engagement with the business model; they may withdraw their resources completely if they are not realising sufficient value of the kinds important to them. Other actors' judgments thus have a continuous incremental impact on the evolution of the relationships and of the business model.

Limitations

This research focuses on the world view of the focal firm, as bounded by the business model concept. Accordingly, the concepts of anticipated, proposed and realised value are explored primarily from the viewpoint of the focal firm, its owners and employees, and only indirectly from the viewpoints of other actors such as customers, suppliers, resource providers and other partner firms. The value anticipations, propositions and realisations of those other actors could be studied in further depth by means of ethnographic studies such as that of Vaughan (2004), which would yield a deeper understanding of how the different individual anticipations of value motivate the different actors to engage in the value creation process, how that motivation is expressed in actions, and the different realisations of value that keep them engaged in the business model activities or that cause them to disengage. This would test and validate the concept of value anticipation as a motivator of those other actors' initial and continued engagement in the business model.

This research found very little evidence of deliberate relationship positioning (La Rocca & Perna 2014), of deliberate business model design (Zott & Amit 2010) or of radical business model innovation (Chesbrough 2010, Chesbrough & Rosenbloom 2002) in the case study. Z-SYS' approach to relationship development and business model adaptation was opportunistic and incremental. It is possible that continued strong market demand for their products and services meant that an incremental evolution of their relationships, networks and business model provided a satisfactory response to their circumstances in the specific historical context they experienced from 1985 to 2005. Being privately held, the Australian stockmarket crash of 1987 had little effect on Z-SYS; the recession of the early 1990s, if anything, increased the demand for the kinds of efficiencies their services enabled; and the dot.com bust of 2000-2001 made it easier for the company to hold onto its best staff. Studies of companies enduring external shocks that adversely impact their markets or resources may reveal a more strategic approach to managing relationships and networks (Ford et. al. 2011) and to business model adaptation (e.g. Sosna et. al. 2010).

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