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VALUE CREATION IN MULTI-LEVEL NETWORKS: A DEVELOPMENT OF BUSINESS MODEL THEORY

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Abstract

Currently, business model theory does not describe how the phenomenon of value co-creation is affected by interactions that span organisational levels in the network. Such interactions include the sharing of customer data and logistical information in addition to exchanges of products and services for cash payment. This paper seeks to develop business model theory to include the business models of networks by incorporating concepts from the value creation systems literature. A theoretical framework is developed to examine how value is exchanged between stakeholders in a network. A value perspective enables the theorisation of what motivates the stakeholders as well as what capabilities they may provide to the network. This framework is used to analyse a multi-level careers guidance network in the UK, to check the sustainability of its network business model.

The contribution of this paper is an addition to the literature on network business models, using concepts from the Value Creation Systems literature, and a method for assessing the sustainability of network business models. An analysis of the value-flows between network stakeholders can show how choices of grain, extent and criteria affect the mutual satisfaction of the network's stakeholders, and hence the sustainability of the network.

Keywords: network business model, value creation systems, careers guidance networks, emergent complexity.

1 INTRODUCTION

Information systems are a fundamental enabler of value creation by business networks because they enable the stakeholders to exchange product and services. These networks are often characterised as value chains (Porter, 1985; Laffey and Gandy, 2009) or Value Creation Systems (Khalifa, 2004; Lepak, et al., 2007; Priem, 2007). The information system that links each stakeholder in the network enables the stakeholders to coordinate their activities and organise on levels above that of a single firm.

A business model of such a network describes how the stakeholders actually interact to satisfy each others' needs for products and services (Pateli and Giaglis, 2004). This interaction between the stakeholders is a system of value co-creation. The business model literature is a core area of investigation for the information systems researchers because information systems enable business models to be more easily and thus make an understanding of what a firm's business model is more significant (Osterwalder et al., (2005). But most of the work so far has focused on the level of the single firm (Hedman and Kalling, 2003; Pateli and Giaglis, 2004; Osterwalder et al, 2005). There has been little business model research on the network level, for example Pateli and Giaglis call for a 'net centric' business model (2004).

One specific aspect of business model theory that becomes more significant when the level of analysis changes from the firm level to the network level is that of inter-level emergence. Firms in a network can organise on at least two different levels: the firm level and the network level. Supply chain managers and orchestrator firms are good examples of this (Lepak et al., 2007; Shaw 2007). But business models that seek to model the needs for products and services of stakeholders that are on different organisational levels must also model emergent phenomena.

Currently, business model theory does not describe how the phenomenon of value co-creation is affected by interactions that span organisational levels in the network. Such interactions include the sharing of customer data and logistical information in addition to exchanges of products and services for cash payment. In each case firms receive materials, information or other services and evaluate them. They also decide what to supply in exchange. Interactions that span organisational levels in the network are different to same-level interactions because emergence greatly increases their complexity. For example, communicating to a network of firms in parallel is much more complex than interacting with them serially because all the diverse problems of communicating to each of the firms must be solved in parallel. The danger is that suppliers may make wrong decisions when they specify what to supply to each other and as a consequence consuming firms may evaluate what they receive negatively. This implies that the functioning of the network is degraded.

This paper investigates how inter-level emergence phenomena can be incorporated into business model theory to develop the theorisation of network business models. First, I describe business model theory and then I link Value Creations Systems literature to business model theory to highlight how value is created in networks. Then I use some concepts from Hierarchy Theory to theorise how inter-level emergence generates complexity in interactions that span levels. Next I use a case analysis to investigate how these concepts can be used to analyse the sustainability of a network business model.

2 BACKGROUND LITERATURE

2.1 Business model theory

A recent study by Osterwalder et al (2005) reported a surge in occurrences of the term 'business model' in the academic journals of the Business Source Premier database. In their study the first occurrences of the term appeared in 1957 and 1960 and its frequency remained in single digits until it rose sharply through the nineties and early part of the twenty first century. Business models are different to business process models since business models describe what value is generated and offered where as business process models describe how this is done (Gordijn et al, 2000a). Business models are an abstraction of the complex socio-technical systems that we call businesses.

The current ‘business model literature’ mostly lacks a theoretical basis (Porter, 2001; Hedman and Kalling, 2003) and uses many different definitions of the term (Hedman and Kalling, 2003; Pateli and Giaglis, 2004; Osterwalder et al, 2005). Pateli and Giaglis call for structuring and codification of the area (2004). They suggest a framework for analysing business models and they highlight the need to define the characteristics of a ‘net centric’ business model. Also, the business model literature is concerned with firm-level analysis when managers are increasingly concerned with additional network levels such as supply chain management and network orchestration (Shaw 2007). Hedman and Kalling (2003) have assembled a set of theoretical constructs from the strategic management, e-business and economics literatures and used them as a basis for their component model of business models. This is a significant development because each component is theoretically supported by a robust foundation in the literature. Other authors have developed a method of modelling the business model of an e-business by using a values-based perspective to examine what actions are needed from the different stakeholders in a network (Gordijn et al., 2001; Gordijn et al., 2000b). A values-based perspective introduces two fundamental ideas to the business model literature. First, stakeholders in network act because in return they receive something that they value. Second, each stakeholder values different things. The implications of such a values-based model are that it can be used to help manage the motivation of network stakeholders. It can also help managers to decide what stakeholder capabilities are required for their network to create value for its stakeholders so it can sustain itself (Shaw, 2007; Laffey and Gandy, 2009).

2.2 Value creation in business models and networks

In the business model literature *value* is commonly used to mean *economic value* and it is a core business modelling construct (Gordijn et al, 2000a; Gordijn et al, 2000b; Gordijn and Akkermans, 2001, Osterwalder et al, 2005). Value is the potential reciprocal service, or co-product, that a consumer is willing to give in response for a given service (Ramirez, 1999). Value is determined by customers and so it is subjective (Khalifa, 2004; Lepak, et al., 2007) and “customers are the arbiters of value” (Priem, 2007, p. 219). This could be paraphrased as ‘value is defined by the *observer*’ and it introduces the concept of *valuer perspective*. Different actors make different valuations upon the same service because they have different *uses* for the same service, i.e. they have different service-needs (Shaw, 2007). Service-needs are input requirements that are generated by a downstream business process stage for the output of an upstream process stage. There must be a good *fit* between the service and the service-need for the business process to be successfully enacted. As a firm enacts business processes that are designed to realise its own business goals it produces service-needs. This also applies to products but in this paper I only refer to services. *The value of a supplier’s service is produced by a customer’s processes (by a customer’s process needs) and not by a supplier’s processes.* This is because value depends upon perspective and it is only as a component in the customer’s process that a supplier’s service can be valued. A supplier only *directly* values the payment it receives in return. Pateli and Gaglias mention values-flows but do not define them except to say that they are usually difficult to express in monetary terms (2004). Parolini’s Value Net methodology is a method for analysing networks but it does not explore various inter-level phenomena (1999). Like Parolini, Shaw (2007) conceptualises this system of interconnected services and service-needs as a *value-flow system*. A value-flow system is a type of business model that is based upon the concept of value exchange between network stakeholders. In a value-flow system the needs of the firm, its suppliers, its customers and its partners are inter-connected so as to mutually satisfy each of the different stakeholders in the network. If a stakeholder does not receive what they value then they will stop participating in network activities. Business models that describe such a value-flow system, in terms of the multitude of services and service-needs of a network’s stakeholders, have the power to explain why particular customers choose particular suppliers and particular services. This explanation is also be scalable from the sub-firm, to the firm and then the network level because its axiomatic concept is the fit between *service* and *service-need* which is empirically measurable and theoretically describable on all these levels.

Laffey and Gandy analyse value creation in e-business networks (2009). They pay particular attention to the how the capabilities of network stakeholders, as well as their configuration, support the mutual

satisfaction of the values of the network stakeholders. Jonsson et al. also examine the role of information systems in value creation and they focus on the enhanced value creation capabilities that ubiquitous computing supports for network stakeholders (2008). Dhillon and Torkzadeh use a value-focused perspective to assess aspects of information systems security in terms of a hierarchy of values that must be reached to achieve higher level objectives (2006).

2.3 How the complexity of observation is a potential barrier to value creation in networks

Next I introduce the concepts of *grain*, *extent* and *criteria*, from Hierarchy Theory, which can be used to check the sustainability of complex value-flow systems. Hierarchy Theory is an approach for modelling complex systems (Ahl and Allen, 1996; Allen and Starr, 1982). It was developed in ecology (e.g. Allen and Starr, 1982) and single firm management systems (e.g. Simon, 1973).

In complex networks different stakeholders have very different perspectives on the same phenomenon (Allen and Starr, 1982; Ahl and Allen, 1996). This is because each stakeholder has to choose the *grain* and *extent* of each of their observations. Here, I use the term ‘observe’ to mean all measurements and assessments that they use to evaluate the quality of inputs from the other network members. The grain of an observation is the minimum perceivable fineness of distinctions and the *extent* of an observation is the maximum perceivable size of distinctions (Ahl and Allen, 1996). The phenomenon to be observed must be larger than the grain of the observation and smaller than the extent of observation, or else it will not be successfully captured. This is the same as in experimental sample design and case study choice, and it applies to spatial and temporal perspectives. From a spatial perspective an example of an unsuccessful choice of grain and extent is a fishing net that is too small for the big fish or one that has holes that are too large to catch small fish in. From a temporal perspective a example is the choice of frame frequency of old cowboy films that seems to show wagon wheels turning backwards because the time grain of the camera frames is not frequent enough. An error in the choice of extent in cowboy films would be that the camera operator shoots the film before or after the wagon goes past the camera.

Here, I use the term ‘observe’ to mean all measurements and assessments that firms use to evaluate the quality of inputs from other network members. In networks of organisations and individuals such ‘observations’ include all data that is required to work with other stakeholders in the network. For example: capturing data on market trends; customer feedback and satisfaction levels; the specifications and prices of suppliers’ products and services; and assessments of partners’ capabilities and performance. For these networks an example of choosing grain size is a questionnaire with a detailed enough set of questions to capture data that differentiates between different reasons why people really liked a firm’s product. An example of extent is choosing the size and shape of the geographical footprint of questionnaire respondents to capture data that describes enough of the reasons why people really liked a firm’s product. Choices of grain and extent are most obvious in observations that are made by firms using surveys and other data capture instruments. But they are also made by individuals using technology to augment their biological senses and information storage and processing capabilities.

In addition to grain and extent choices stakeholders may look for different phenomena because they have different objectives and because they value different things. This is consistent with the value creation literature above. The values of a firm or an individual lead to different observation *criteria* (Ahl and Allen, 1996). Firms have different business processes and therefore different service-needs. Different service-needs mean that they value different service inputs so they will look for different phenomena and also they will measure phenomena in different ways. The different observation *criteria* of firms include different aspects of their markets, or supply chains, and they derive from different corporate missions and strategic goals. Different observation *criteria* can introduce potential observation errors. For example, two inputs services from one or more suppliers may fulfil slightly different service-needs, which may suit subtly different types of customers. This is the justification for market segmentation. The danger is that network stakeholders will choose inconsistent grain, extent and criteria for designing the services that they produce or for evaluating the services that they consume. This will lead to value exchanges that do not fit the values of the stakeholders, i.e. the production of services that do not fit the services-needs of the recipients.

The sustainability of a network is based upon the mutual satisfaction of the stakeholders' values and objectives. This is done by an exchange of services that can be modelled using value-flows and business model theory. But if stakeholders use inconsistent grain, extent and criteria in their service design and evaluation then mutual satisfaction will be unlikely. Next I use a case study of a network of firms and organisations to illustrate how consistent and inconsistent choices of grain, extent and criteria affect the mutual satisfaction of the network's stakeholders by degrading the value-flow fit between stakeholders.

3 RESEARCH METHOD

This investigation includes a multi-actor as well as a multi-level study so I took an interpretive stance because of the subjective nature of human interaction. I iterated around a hermeneutic circle between network, firm and individual level perspectives so as to consider an interdependent whole (Klein and Myers, 1999). The novelty of using the *value* perspective to investigate business models and service evaluation in networks points to a qualitative approach because the investigation is concerned with initial questions of 'how' and 'why' rather than of 'how many'. In seeking to answer 'how' and 'why'-type questions, following Yin's recommendations (2003), I used a case study approach because I was concerned with contemporary phenomena, which I had no control over, of business relationships between many different firms. The use of a single case has external validity implications, that is, generalisation implications (Lee, 1989), but a single case is justified at the outset of theory generation (Benbasat et al., 1987) and although it may limit statistical generalisation it does not degrade analytic or theoretical generalisation (Robson, 2002). This is consistent with the theory building objectives of this study.

I was concerned with dynamic phenomena so I used different data collection methods and different data sources (Eisenhardt, 1989). Over a period of 18 months I interviewed the staff of the case organisation and its sub-contractors' staff. The interviews ranged from semi-structured meetings to telephone and face-to-face interviews and ten minute informal conversations. The interviews were conducted in the offices of the organisations that the staff worked for between February 2007 and October 2008. Interviews were recorded and then transcribed for analysis except for interviews with the senior manager of the case organisation, the observation of contract review with one sub-contractor and the observation of a monthly network meeting for sub-contractors. The monthly City IAG network meeting: *"...is where we ask that the subcontractors attend but we invite the wider network to their meetings. So we get all manner of organisations turning up at the network meetings that have any interest in learning and working in that particular area"* (NS Contracts Manager).

Interviews were not recorded because of trust building, the sensitive nature of the meeting or the practicalities of recording a large meeting. Interviews ranged from single interviews with careers advisors to multiple interviews and casual email and telephone conversations with the case organisation's senior manager, contract manager and the marketing coordinator of a similar organisation in another county. These provided multiple opportunities for unstructured exploration of the case organisation's services and environment as well as a chance to test emerging ideas and constructs. The prolonged relationship with the case participants also helped to reduce validity reactivity and increase trust as well as disclosure. Other data sources included meeting notes, meeting transcriptions, telephone conversations, informal and chance conversations, archival data, and the content of the websites of the case organisation, central government agencies and partner organisations.

Overall, I use triangulation to converge evidence, analysis and synthesis upon the same phenomena at different levels the network. Specifically, and according to Patton's four types of triangulation (in Yin, 2003), (i) I use data triangulation by accessing multiple sources of evidence on the same relationship phenomena; (ii) I do not use investigator triangulation because there was only one investigator, although findings were exposed to the perspectives of colleagues and my students, as well as those of the case organisation's managers and a manager of the same type of organisation in another county; (iii) in later stages I use theoretical triangulation by incorporating theoretical concepts from external literatures; and (iv) I use some limited methodological triangulation in the different data evaluation

methods that I use (i.e. the different types of investigator interactions with participants, multiple readings of transcriptions and personal notes; the long period of research access as well as feedback on my findings from participants and academic colleagues).

4 CASE ANALYSIS

4.1 Network analysis using a value-flow approach

The case study network is a ‘nextstep’ careers guidance network, in England, and in the period before its change from a county-level to a regional-level organisational structure in April 2008. The case study focuses upon nextstep the organisation (NS) and one of its contracts called the ‘nextstep contract’. NS is one of 47 organisations that provide the nextstep service in their local county. The nextstep service helps adults to develop themselves to meet labour market needs via courses or training (NS Website, 2007). In 2000 Information, Advice and Guidance (IAG) partnerships were set up in England as part of the UK Government’s lifelong learning agenda and from 2005 they were branded as ‘nextstep’ (NS Website, 2007, NS Contract Manager, 2007). The nextstep contract obliges NS to provide *an information service about skills, learning and work* to all adults aged 20 and above; and a more targeted advice service for those without a Level 2 qualification (i.e. five GCSEs at grades A* to C or the equivalent). Information, Advice and Guidance are three progressively more intense and specific interactions with clients from general information to advice in answer to questions and then in-depth guidance via an individual meeting (LSC, 2007). When giving advice “... *we really tackle the presenting need, the ... if you like, the main issue that they’re coming in with. Whereas [in] guidance, we’d be going below the surface and looking at stuff like motivation and what’s actually behind their presenting need*”(advisor F).

I chose the case organisation because it is part of a network; the network has a contractually defined role of producing a careers guidance service at the network level and with sub-contractors; the network also links to a level above NS (i.e. the contract is with the LSC). Also, the network displays inter-organisational network phenomena not just social network phenomena, i.e. it is a network of organisations not just a network of individuals. The network is large enough to present a diversity of phenomena at the member (sub-contractor) and end customer (client) levels.

The service that a client receives from the NS network could include, for example, advice on preparing a CV, interview skills and services available during redundancy. The “*first thing is to access any service you need to have knowledge*” (advisor M2). NS contract holders also help adults with English as a second language and those with learning difficulties or disabilities. nextstep contracts are funded by a budget controlled by the English Learning and Skills Council (LSC). Each contract is awarded by the head office of LSC and it is operationally managed by a contract manager from the local LSC office (nextstep stakeholder, 2008). NS consists of a management team, careers advisers, administrators, trainers and a marketing officer (NS Overall Manager, 2007).

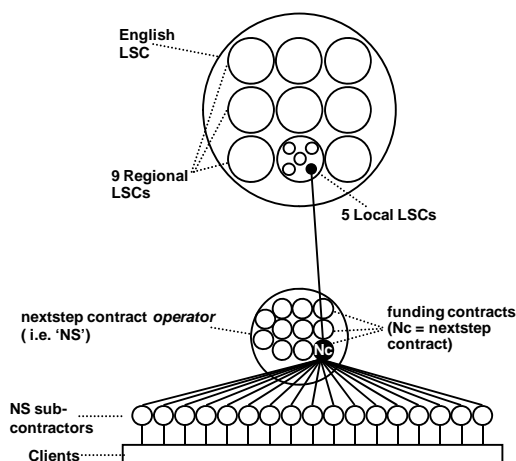


Figure 1: Elements of the NS network focusing upon the NS contract.

The NS network is shown in Figure 1. The IAG service of the NS network is mostly produced by NS' sub-contractors and consumed by clients, although some nextstep organisations service clients directly as well as indirectly via sub-contractors. The IAG service guides the client through the process of moving from one careers stage to another. This can be as early as the initial occurrence of the idea for a change of job, or career, to as late as actually getting a new job. NS' network of sub-contractors guides clients through the initial search for information, the consideration of what paths to take and then they give directions and recommendations for courses or other requirements that will help the client on this journey. The funding requirements are that the client is 20 or above, below a certain level of qualification and living in the NS' county. NS and its sub-contractors also work with other employment, education, training, voluntary, trades union and community organisations (nextstep stakeholder, 2008).

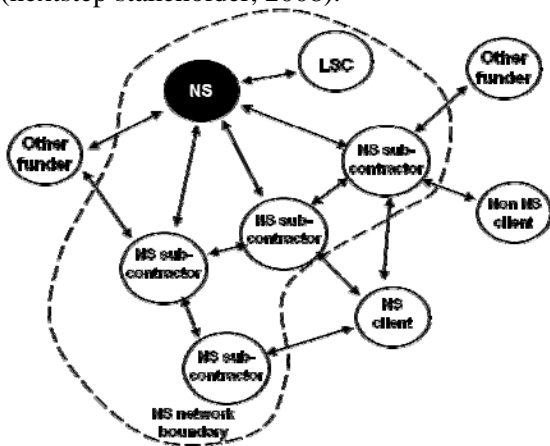


Figure 2: Value-flow system of a nextstep network.

4.2 Value-flow analysis of NS' nextstep network

The value-flow system for the NS' nextstep network is shown in Figure 2. The LSC contributes funding for the nextstep core contract and requires data on the number of clients helped and how they have been helped. NS sub-contractors provide IAG to clients and give operational and results data to NS in return; they need developmental support from NS in the areas of training to improve their service and reporting capabilities in addition to their inter sub-contractor communications and coordination. They also receive nextstep funding via NS. NS sub-contractors also collaborate with each other and non-NS clients to provide services that seek to realise their organisational objectives. NS needs the sub-contractors' data that describes how they have helped clients so that it can aggregate it and pass it onto the LSC in return for funding. NS channels funding to the sub-contractors and helps their organisational development. Other funders also provide funding to NS and the sub-contractor organisations for other IAG related services to clients in the county that are not covered by the nextstep contract. Other funders also require some form of feedback of performance data as evidence of the successful use of this funding.

Next I illustrate how the sustainability of a network business model can be analysed by examining the value-flow system of the NS network in Figure 2. I divide my analysis into value-flows across the network boundary (dashed line) and internal value-flows. Due to space constraints I focus on the relationships, for value-flows across the network boundary, between (i) the LSC and NS and (ii) NS sub-contractors and the clients. For internal value-flows I focus upon the relationships between NS and the sub-contractors. I highlight examples of 'good' and 'bad' fit that are caused by different choices of observation grain, extent and criteria. Examples come from either end of the relationships.

- the relationship between the LSC and NS

From the LSC's perspective it funds the network's nextstep service to clients and requires data on the consumption and effects of that service. From NS' perspective the nextstep may only be one of several contracted services that it delivers and all funders require different results data. For example,

some want to know the clients' National Insurance numbers, some require follow up interviews after different time periods to check the results of the service and some just require a measurement of client satisfaction. The LSC funds on an annual cycle but NS's work is continuous. For example, in a journey to employment a client may need several IAG interventions but the nextstep contract only pays for one. However, there is no LSC-level 'memory' between yearly cycles so clients can benefit from the nextstep service more than once as long as the interventions are in different financial years. This is particularly relevant for clients' stages such as training courses taking several months or more.

- the relationship between NS sub-contractors and their clients:

"...they live in the street behind, they're a friend who's been told by one of these folks 'Great! Get yourselves down there!' but when we search on their postcode, 'Sorry, we can't help you'" (CN Contracts Manager).

The sub-contractors are funded according to the county geographical boundaries of the nextstep network that they are in and the educational level of the client. This may be irrelevant to a client who hears of an interesting course from a friend who lives nearby, but in another county, or is slightly less qualified. The different funding sources that some sub-contractors (and on another level NS) use provide diversity advantages in addition to extra money. Funding is usually designed for specific services so contracting from several funding sources allows sub-contractors to bundle several services together, which from the client's perspective is perceived as help through several subsequent stages rather than just one. From the client's perspective an IAG advice meeting is needed before and after each stage. For example, before the client goes on a CV writing course the client needs help in deciding that this is the right course and after the course the client needs help in choosing the next stage. NS sub-contractors also produce services for non-NS clients that are themed around their own particular charitable or organisational goals.

- the relationship between NS and sub-contractors

"...basically Career Net acts as the hole in between which rotates the whole gear" (advisor M2).

NS passes on reporting requirements from the LSC level to its sub-contractors, e.g. NS requires its sub-contractors to give it data on serviced clients that it aggregates and processes for the LSC. But this is only one type of data for one of several organisations that the sub-contractors consume funding from. Generally NS acts as a filter and translator between the LSC and its sub-contractors but for one new funding contract in a single county the LSC wanted to directly communicate with the sub-contractor's level. The LSC asked the counties NS to invite all its sub-contractors to a meeting but other than that it did not use the NS' experience of sub-contractor management to initiate this new project and this had some negative consequences. When it presented the new funding opportunity to the sub-contractors it presented the news very simplistically and some sub-contractors felt patronized. NS had a much better knowledge of the sub-contractors' understanding on the issues that were contained in this new project and would have communicated accordingly. The sub-contractors had very different degrees of understanding of the new projects' context and goals. Some were more experienced in this area than NS or any other organization at the presentation. Also, the LSC was not ready for the questions that this presentation stimulated from the sub-contractors about how they would be paid and so it was not ready to answer them. Furthermore the LSC in this example did not consult the NS about publicity material and it produced a leaflet for clients with NS' address on it. This address was useless to clients because they would consume this new service at the sub-contractors' offices rather than the NS office. Finally, the LSC required that all the sub-contractors attend but for some their presence was irrelevant because their services and the new project were unrelated. These sub-contractors found this direct intervention by the LSC particularly irritating because for them the cost of transport and the time allocated to the event was significant.

Table 1 examines the contrasting perspectives of the different relationships between LSC, NS, sub-contractors and clients using three examples: (a) the presentation of the introduction of the new funded service (that is in addition to the nextstep contract) directly from LSC to sub-contractors, (b) the clients' IAG meetings and the data that they generate and (c) the production and consumption of the nextstep service in general. (b) is a specific part of (c) and (a) is new service of the same logical type as (c). Each cell examines a dyadic relationship *with* the column heading member *from the perspective of* the row heading member, e.g. the top right cell (client, LSC) is the LSC's perspective

of its relationship with the client group. The contrast between the perspectives of two parties in each relationship can be seen by comparing diagonally opposite cells. This analysis compares the differences between the perspectives of the different actors at different organisational levels of the network to look for the degree of fit between their perceptions of the same phenomenon.

5 DISCUSSION

Value is generated by the degree of fit between what the customer perceives a service delivered and what the supplier perceives the same service delivered (Khalifa, 2004; Lepak, et al., 2007; Priem, 2007). This is partly a function of the degree of fit between what the customer perceives was required for the service and what the supplier perceived was required. In this section I discuss values in terms of the case actors' concerns, interests and goals, i.e. what they value. I discuss barriers to value generation in terms of different, or contrasting, perspectives between the customer and the supplier of a service; before and after the service is specified, produced and also consumed. Minimising the difference in perspectives, or allowing for it in service design, maximises the degree of fit in mutual understanding between actors. I.e. this is a communications or information systems issue.

In the analysis the different perspectives are most obviously apparent in the greatly contrasting *criteria* of the stakeholders, e.g. a client is interested in how any one relationship or meeting helps them to progress along a process that ends with a new job. But the other members view the clients as one group and at differing levels of *granularity*. The sub-contractor's perspective comes from its own developmental process, and organisational goals, as do the other stakeholder's own perspectives of themselves. These also contrast with members on higher and lower network levels. The perspectives of the two sides of each relationship can also contrast in terms of *grain* and *extent* (Ahl and Allen, 1996). In some relationships there is a fit between *grain*, e.g. when county LSC presence fits each county NS or when sub-contractors have individual IAG meetings with clients.

But sometimes there is a contrast in the granularity of how partners view each other, e.g. the LSC may not differentiate between sub-contractors or clients. Similarities and contrasts also exist for the *extent* of a dyadic relationship as viewed by each partner. For example, the *extent* of funding may be problematic for a client who cannot be seen because the funding has been consumed. But a sub-contractor, especially one who's capacity to produce services is full, may perceive this funding *extent* as normal or even as planned.

In a progression down through the network's structure, from the highest level to the lowest level, the LSC differentiates between clients the least; then NS sees more differences between clients, e.g. an IAG meeting may point a client towards accessing another sub-contractor's services; and finally the sub-contractor actually meets them individually. However, only the client can perceive its route to a new job as a process. The other members just experience greater or lesser abstractions of collections of separate stages in different clients' processes. The strongest contrast between the two ends of this dyadic system is between the processual perspective that is used by clients consuming services and the structural perspective used by service producers. For example, a client is concerned with the *serial* progress towards a new career and job but a sub-contractor views clients as a static population of IAG and training events with different goals. Similarly a sub-contractors' development and goal attainment is its reason for membership of the network. But NS is concerned with the fulfilment of the nextstep and other contracts and the LSC is concerned with improving the skills of England's workforce.

The sub-contractor's perspective of its own service-needs is *processual* as it comes from its own developmental process and organisational goals and this also applies to the other stakeholders. Also, stakeholders' perspectives of the services produced by other stakeholders are *processual* for the same reason. But a stakeholder's perspective of the organisational *arrangement* of other members is *structural* because they are perceived to exist upon relatively higher and lower hierarchical levels. This duality of perception, where the services and service-needs that the member directly experiences are *processual* and indirect experiences are *structural*, can be explained by the concept of directness of experience. The *indirect experiences are actually models* that are arranged in a static structure. But models of one's own progress through time are arranged serially in a process. Only service-needs and services are 'directly' experienced and so they are not abstracted.

	LSC (nextstep funder role)	Nextstep (NS)	Sub-contractor	Client
LSC (nextstep funder role)		Grain: LSC have local contract managers that connect the LSC to each nextstep. Extent: the LSC manages all the nextsteps. Criteria: LSC is interested in an organization that can manage and develop a network of sub-contractors on its behalf.	Grain: The presentation did not need to differentiate between sub-contractors. Extent: LSC's presentation reached all the sub-contractors. Criteria: The presentation was meant to introduce the new funding project.	Grain: Client IAG and follow-up data is secured. Extent: All leaflets had addresses [sc]. As many clients are given IAG as is possible with the funding. Criteria: LSC is interested in IAG sessions & their affect on a client population.
Nextstep (NS)	Grain: NS connects to local LSC contract managers. Extent: LSC holds client data for 1 year. Criteria: NS is interested in developing sub-contractors ability to guide clients through a whole job-finding process that may take years.		Grain: NS manages sub-contractors individually & together. Extent: NS manages all sub-contractors. Criteria: Different strengths of sub-contractors can be combined to meet a full portfolio of geographical, client-type and stage needs.	Grain: sub-contractors pass data from client meetings to NS. Extent: all client meetings generate data. Criteria: NS is interested in fulfilling a 'mosaic' of contracts to generally help clients in the area.
Sub-contractor	Grain: LSC's presentation did not differentiate between sub-contractors' expertise & data needs. Extent: Some sub-contractors did not need to be there. Criteria: sub-contractors have organisational missions that focus on themes such as race, location and specific sets of client needs but the LSC did not differentiate between them and invited irrelevant sub-contractors.	Grain: NS manages sub-contractors individually & together. Extent: NS manages all sub-contractors. Criteria: Sub-contractors get funding, developmental help and better contact with other sub-contractors.		Grain: Clients have individual IAG meetings. Extent: Number of clients seen limited by funding. Criteria: Sub-contractors offer specific services due to their founding objectives, capabilities and location(s).
From Client	Grain: leaflets produced by the LSC did not differentiate between different meeting locations that a client would use. Extent: The LSC funds just one IAG session but a client needs several of them to serially connect stages in their job-finding process. Criteria: A client uses IAG meetings to serially connect stages in their job-finding process.	Grain: A client's individual IAG meeting is funded. Extent: A client is seen (if there is funding left). Criteria: A client uses IAG meetings to serially connect stages in their job-finding process.	Grain: A client has an individual IAG meeting with a sub-contractor and some other form of support. Extent: client is seen if there is funding left. Criteria: A client chooses a specific sub-contractor due to their specific needs, location or ethnicity.	

Table 1: Two contrasting perspectives on grain, extent and criteria for each of the different relationships within the nextstep network.

This is structural emergence. As the number of intervening process stages between the observer and the subject increases, e.g. between a client at the start of a career change process and an eventual new job, then the more alternative routes there are. This choice of routes is processual emergence. Looking backwards along this personal internal process model, an increase in process stages between the observer and the subject, e.g. when reviewing a memory, would not necessarily be a barrier to recollection because processual emergence only acts in the direction of causality. Looking backwards, all choices have been made so there are no confusing options at every stage. This implies that business models based upon value-flow analyses can model why any specific service is chosen by any specific stakeholder and at any specific instant. A value-flow analysis incorporates specific 'downstream' process objectives and values that greatly reduce the many choices at every process stage.

6 CONCLUSIONS

This paper demonstrates how an analysis of the value-flows between stakeholders in a network can show how choices of grain, extent and criteria affect the mutual satisfaction of the network's stakeholders, and hence the sustainability of the network's business model. Choices of grain, extent and criteria can be thought of as different perspectives and that most strongly contrast in the form of the processual perspective that is used by service consumers and the structural perspective that is used by service producers. These two radically different perspectives highlight why service consumers make service choices that are particularly hard for service producers to guess at.

The contribution of this paper for researchers is that it adds to the literature on network business models, by suggesting a theoretical basis from the Value Creation Systems literature and by extending the use of business model theory in the non-profit sector. This paper also develops Hierarchy Theory by linking it to the Value Creation Systems literature and by using it in a new organisational context. The contribution for managers that are concerned with designing and operating a network, or who are interested in joining one, is that it provides a method for assessing the sustainability of their network's business model. A limitation of this study is that clients do not pay for services from the NS network and this points to further research on networks whose consumers also directly fund the service. Another limitation is that it is a single case and single sector study. Further investigation is required into how the observation frameworks of individuals change, in terms of their criteria, grain and extent, when these include individuals that are given access to the wider implications and possibilities of working together in networks. Also, the implications of improving business model design and analysis at the network level need to be considered these include expanded menus of capabilities to draw on or pushing back the boundaries of their individual/ group rationality.

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7 REFERENCES

- Ahl V and Allen T.F.H. (1996) *Hierarchy Theory*, Columbia University Press, New York.
- Allen T.F.H. and Starr T.B. (1982) *Hierarchy: perspectives for ecological complexity*, Chicago: University of Chicago Press.
- Benbasat I., Goldstein D.K. and Mead M. (1987) The case research strategy in studies of information systems, *MIS Quarterly*, 11 (3), 369-386.
- Eisenhardt K.M. (1989) Building theories from case study research, *Academy of Management Review*, 14(4): 532-550.
- Gordijn J., Akkermans H. and Van Vliet J. (2000a) Business Modelling Is Not Process Modelling, in *Conceptual Modeling for E-Business and the Web* (ECOMO-2000), Springer-Verlag, LNCS 1921, Salt Lake City, USA, October 9-12, 2000, 40-51.

- Gordijn J., Akkermans J. and Van Vliet J. (2000b) What's in an electronic business model?, in *Knowledge Engineering and Knowledge Management - Methods, Models, and Tools*, LNAI 1937, 2000, 257-273
- Gordijn J. and Akkermans J.M. (2001) Designing and Evaluating E-Business Models, *IEEE Intelligent Systems*, 16 (4), 11-17.
- Dhillon G and Torkzadeh G (2006) Value-focused assessment of information system security in organizations, *Information Systems Journal*, 16, 293–314.
- Hedman J. and Kalling T. (2003) The business model concept: theoretical underpinnings and empirical illustrations, *European Journal of Information Systems* 12, 49-59.
- Jonsson K, Westergren UH and Holmström J (2008) Technologies for value creation: an exploration of remote diagnostics systems in the manufacturing industry, *Information Systems Journal*, 18 (3), 227 – 245.
- Khalifa A.S. (2004) Customer value: a review of recent literature and an integrative configuration, *Management Decision*, 42 (5), 645-666.
- Klein H.K. and Myers M.D. (1999) A set of principles for conducting and evaluating interpretive field studies in information systems, *MIS Quarterly* 23(1), 67–93.
- Laffey, D. and Gandy, A. (2009) Applying Stabell and Fjeldstad's value configurations to E-commerce: A cross-case analysis of UK comparison websites, *The Journal of Strategic Information Systems*. 18 (4), 192-204.
- Lee A.S. (1989) A scientific methodology for MIS case studies, *MIS Quarterly* 13(1), 33–50.
- Lepak D.P., Smith KG and Taylor MS (2007) Value Creation and Value Capture: A Multilevel Perspective, *Academy Of Management Review*, 32 (1), 180-194.
- LSC (2007) Information, Advice & Guidance for Adults, seeing the bigger picture, <http://readingroom.lsc.gov.uk/lsc/National/LSCIAGBigPicture.pdf>, accessed 10 March, 2010.
- Nextstep Stakeholder Website (2008) *What is nextstep?*, <http://www.nextstepstakeholder.co.uk/stakeholders/whatisnextstep/>, accessed 10 March, 2010.
- NS Overall Manager (2007) *Business Planning Document*, May, 2007.
- NS Contract Manager (2007) *slides in NS' training programme for sub-contractors*, January.
- NS Website (2007) *About*, accessed 12 July, 2007.
- Osterwalder A., Pigneur Y. and Tucci C.L. (2005) Clarifying Business Models: Origins, Present and Future Of The Concept, *Communications of the AIS*, 15 (1), 751-775.
- Pateli A.G. and Giaglis G.M. (2004) A research framework for analysing eBusiness models, *European Journal of Information Systems*, 13, 302-314.
- Parolini C. (1999) *The value net: a tool for competitive strategy*, Wiley, Chichester, UK.
- Porter, M.E., 1985. *Competitive Advantage*. Free Press, New York.
- Porter M.E. (2001) Strategy and the Internet, *Harvard Business Review*, 79(2), 63-78.
- Priem R.L. (2007) A Consumer Perspective on Value Creation, *The Academy of Management Review*, 32 (1), 219-235.
- Ramirez R. (1999) Value co-production: intellectual origins and implications for practice and research, *Strategic Management Journal*, 20, 49-65.
- Robson C. (2002) *Real World Research*, 2nd edition, Blackwell, Oxford.
- Shaw D.R. (2007) Manchester United Football Club: developing a Network Orchestration Model, *European Journal of Information Systems*, 16 (5), 628-642.
- Simon H.A. (1973) The Organization of Complex Systems, in *Hierarchy Theory: The Challenge of Complex Systems*, (Pattee HH, ed) George Braziller, New York.
- Yin R.K. (2003) *Case Study Research: Design and Methods*, Applied Social Research Series, 3rd edition, Vol. 5, Sage, Thousand Oaks, CA.