

Strategic Business Nets – Their Types and Management

Kristian Möller*, Arto Rajala, Senja Svahn

Helsinki School of Economics

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*Corresponding Author
Kristian Möller, Professor
Helsinki School of Economics
Department of Marketing
POB 1210, 00101 Helsinki, Finland
Phone: +358 (0)9 4313 8515, fax: +358 (0)9 4313 8660
moller@hkkk.fi

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Abstract

This conceptual paper focuses on the management challenges of different types of strategic business nets. First, we propose a value-system continuum that forms the basis for classifying different types of strategic nets. Second, a classification of these nets is suggested and discussed. Finally, the core managerial questions and capabilities required in net management are illustrated. A discussion of the theoretical and managerial implications, and of future research needs, concludes the paper.

Key Words: Network Management, Strategic Networks, Business networks

Introduction

The way economic value is created is fundamentally changing. The increasing importance of knowledge, technological complexity, global competition, and the availability of digital information technology are driving this change (Castells 1996). Individual companies, even major MNCs such as ABB, IBM, Microsoft and NOKIA, cannot internally master all the relevant value activities of the value chain from product innovation to customer care, nor is it economically sensible for them to try. In consequence, firms and other social actors are creating increasingly complex webs of knowledge and technological bonds. Emerging networks of firms are replacing traditional markets and vertically-integrated companies. Networks are claimed to be better adapted to knowledge-rich environments because of their superior information-processing capacity and flexible governance compared to markets and hierarchical organizations (Achrol and Kotler 1999, Eisenhardt and Marting 2000, Foss 1999, Snow 1992). Empowered by the new digital media, network organizations are expected to take the leading role in the creation of economic and social innovations (Castells 1996, Grabher 1993, Jarillo 1993, Parolini 1999, Thompson et al. 1994). In a nutshell, it is a question of how to combine the value activities of multiple actors in order to form 'value-creating' end products (Anderson and Narus 1999, Cravens et al., 1997, Doz and Hamel 1998, Norman and Ramirez 1993).

The view that companies are closely interrelated through resource ties and activity links is, of course, the core proposition in Industrial Network Theory (Axelsson and Easton 1992, Håkansson and Snehota 1995, Möller and Wilson 1995). This viewpoint is also put forward in the more recent network propositions from the fields of economic sociology, which are primarily based on the resource/capability view (RBV) of the firm (Amit and Zott 2001, Eisenhardt and Martin 2000, Gulati and Zaheer 2000, Gulati and Gargiulo 1999, Gulati 1998). Why, then, do we need another study of networks?

We argue that the majority of research has focused on the general characteristics of organically evolved networks, basically examining their structure and, to a lesser extent, their development processes. Much less attention has been paid to the issues of intentionally developed nets, and specifically to their management. Our work is based on the premise that different managerial capabilities are needed in operating in different types of nets. In exploring this notion we need to deal with the following fundamental questions. (1) What are the basic types of strategic business networks? (2) What factors influence the formation of these networks? (3) What kinds of organizational structures and managerial processes are used? (4) What kinds of managerial capabilities are required in the basic types of strategic network.

The primary focus in this study is on questions one and four. First, we propose a value-system continuum that forms the basis for classifying different types of strategic nets. Second, a classification of these nets is suggested and discussed. Finally, the core managerial questions posed and the capabilities required in net management are identified and discussed through two conceptual frameworks.

Characteristics of Strategic Nets – Constructing a Value-system Continuum

It is important to distinguish between a “network of organizations” and a “network organization”. The former refers to any group of organizations or actors that are interconnected with exchange relationships. According to Industrial Network Theory, any market can be described as this kind of macro network (Axelsson and Easton 1992). Achrol (1997, 59) suggests that the quality of relationships can be used in defining a network organization: “a network organization is distinguished from a simple network ...by the density, multiplicity, and reciprocity of ties and a shared value system defining membership roles and responsibilities.” This is in line with Amit and Zott (2001), who refer to Gulati, Nohria, and Zaheer (2000) in suggesting that strategic networks are “stable interorganizational ties, which are strategically im-

portant to participating firms”. Because a business network can be assumed to pursue established goals, we add the notion of intentionality to these definitions. Moreover, we reserve the “network” term to refer to macro networks, and the “net” to refer to intentional nets of a restricted group of actors.

An extensive literature analysis, covering both scholarly network studies and managerially-oriented description of business networks, enabled the following questions concerning strategic nets to be identified.

- ◆ The goal: is the aim to increase the functional efficiency of an existing value system as in many tiered supplier nets and ECR arrangements, or to develop a better product or system through an R&D net, or to develop completely new business concepts such as Internet portals?
- ◆ How unified is the goal? Has it been adopted by all the key actors, or is it a compromise between separate interests?
- ◆ Does the net involve actors from vertical or horizontal, or both, “value directions”?
- ◆ How many value activities or functions, such as R&D activities, production activities, logistics and marketing activities, are carried on through the net?
- ◆ Is the function of the net based on a single specified technology, or on multiple specified technologies, or are there unspecified, emerging technologies involved?
- ◆ Has the net developed through an evolutionary path, or has it been intentionally mobilized?
- ◆ What is the power distribution in the net: is it centralized to a hub firm, or is it more dispersed?
- ◆ Is it an enduring or temporal net?

This list is not exhaustive. We believe, however, that these questions have strong implications as far as managerial requirements are concerned. If we are to derive a more parsimonious set of dimensions for our classification, we have to discover an organizing logic underlying strategic nets. We propose that three factors have a core role in promoting understanding of the nature of any value net and its management.

1. *The level of determination of the value activities and the actors forming the net, i.e., the nature of the value system embraced by the net.* In other words, how well-known are the value activities of the net and the capabilities of the actors to carry them out, and can they be explicitly specified? The greater the level of determination of the value system of the net, the less uncertainty there is and the less demanding its management, all other things being equal. The value-system continuum relies on the notion that each product or service requires a set of value activities performed by a number of actors forming a value-creating system, using Parolini's term (1999, p. 59-68). This is not a new concept, and has been given different shades of meaning by authors such as Håkansson and Snehota (1995), Normann and Ramirez (1993), Parolini (1999), and Porter (1985).
2. *The goal of the value net or its hub firm.* What outcomes are pursued through the net? Examples include increasing the operative efficiency of an established value-system, product or process innovation, and setting up a completely new business requiring partly new value activities or even a new value system (see e.g. Amit and Zott, 2001, Backhaus and Buschen, 1999, Gadde and Håkansson, 2001).
3. *The structure of the value net,* as described through the vertical and horizontal dimensions and through the numbers and different types of actors constructing the net. Scope and relative complexity versus simplicity have a direct impact on the managerial requirements.

We argue that the value system and its level of determination have a central role in the understanding of strategic nets. Figure 1 shows a simplified continuum of value systems (VSC). The left end describes clearly specified and relatively stable systems. The actors producing and delivering specific products and their value activities and capabilities are basically known. IKEA's supplier system and its solution to persuade customers to carry out part of the traditionally internalized value activities (selecting, packing, transporting and assembling) are renowned. Benetton, Nike and Dell illustrate well-specified supplier and distribution solutions based on strategic nets.

The right end of the continuum describes emerging value systems. The constructors of these aim at nets through which new technologies, products or business concepts can be developed and commercialized. These future-oriented value nets require radical changes in the existing value systems and in the creation of new value activities. For example, Internet portals and emerging mobile services are generally created through a strategic net. Emerging value systems involve dynamic and complex learning processes and an inter-organizational relationship formation that cannot be specified in advance. Uncertainty related to value activities and to actors and their capabilities is an inherent feature of the system.

 INSERT FIGURE 1 AROUND HERE

In their extreme forms, the value systems outlined are ideal types. In reality, we will never find completely determined or undetermined systems. Local development activities exist even in the most established and well-specified nets producing incremental local change. On the other hand, even in the most radical emergence, some actors have visions of the end goals that can be achieved through shaping new technologies and new actors. These views, although uncertain and vague, guide the actions of firms, and it is through these actions that the new

value nets take shape. It is a very probabilistic world well described by the birth of commercial Internet and mobile telephony and mobile services, involving both old and new actors and old and new value activities.

The middle of the continuum describes value systems that are relatively well determined, but that are being modified through incremental and local improvements. Most multi-actor R&D projects, as well as business-process modifications, exemplify these kinds of incremental changes within an existing value system.

The proposed value-system continuum is a highly abstract and static framework, and its ideal-type character must be underlined. For example, in reality, most large corporations have major roles in nets across the continuum (as illustrated by the Nokia examples in Figure 1). Moreover, many strategic nets “stretch” across at least two ideal types, because their participant actors may have roles in several interrelated nets. A case in point is a well-specified supplier net whose key actors are engaged in innovative R&D activities in their own product/service fields in collaboration with the hub firm. This kind of net aims simultaneously at high systemic efficiency and the development of effectiveness. Many strategic nets are also interrelated through actors having multiple roles in several of them. Compaq, for example, is a hub firm for its supplier net, an integrator firm producing secure e-payment solutions with a number of e- & m-software companies, and a major PC supplier. This kind of involvement in multiple strategic nets allows innovative companies, through their accumulated knowledge of other relevant actors and their capabilities and liaisons, to create temporal strategic nets for specific development purposes. Finally, the “contents” of the VS continuum, the strategic nets, are - as illustrated in the previous points - in a state of constant evolution. When nets creating innovative services such as e- and m-banking are well specified, they “move” towards the left end of the VS continuum.

Classification of Strategic Nets

We contend that the managerial challenges of strategic nets are fundamentally influenced by the position of the specific net in the value-system continuum. When the value-system information is combined with the goals of the actors and the structure of the net, we are able to derive the classification framework given in Figure 2. We claim that most existing nets can be positioned in the following types according to this classification:

1. *Vertical value nets*, including:

supplier nets; channel and customer nets; vertically integrated value-systems.

2. *Horizontal value nets*, covering several modes:

competition alliances; resource/capability access alliances; resource & capability development alliances; market and channel access/cooperation alliances; “networking forums” – company driven, institutionally driven.

3. *Multidimensional value nets*, including:

“core or hollow organizations”; complex business nets; new value-system nets.

We believe that the dominant goal of vertical value nets is to increase the operational efficiency of the value system. Well-specified supplier systems directed by a hub firm such as Wal-Mart represent the basic form of the vertical net. However, most vertical nets also pursue developmental goals, which primarily lead to incremental and local improvements in the products/processes of the established value system. The most ambitious goal is to integrate the complete value system, from the raw materials to the distribution of products to the end-customers, as pursued by Dell and Nokia Mobile Phones, for example. This requires advanced integration of complex information systems and management processes.

Horizontal nets are characterized by competitor alliances and cooperative arrangements involving various institutional actors (government agencies, industry associations, research in-

stitutes, universities) that aim either to provide access to existing resources or to co-develop new resources. Competition alliances such as the airline alliances “Oneworld” and “Star Alliance” are widely-known enduring strategic nets. Resource access and development nets range from local export circles (a group of SMEs cooperating for internalization) to global technology alliances aiming to develop next-generation technologies. Horizontal market and channel nets are created when competing firms recognize that they have products, channel relationships or customer-service systems that can be combined to achieve a stronger position in global-level competition.

INSERT FIGURE 2 AROUND HERE

Companies have recently started to build forums for business networking. One example is the “Mobile E-Services Bazaar” offered by Hewlett Packard through www.mobile-bazaar.com. The Bazaar contains information on HP’s intentions in e- and m-business, and provides systems tools for networking aimed at facilitating the proliferation of smaller innovative firms. These firms are encouraged to form dyads or nets for providing new e/m-business solutions.

It should be noted that horizontal nets are seldom purely horizontal. They comprise competitors, research institutions and authorities, but also often contain vertically-positioned supplier and distributor companies. The airline coalitions, for example, expand into complex networks through their relationships with hotel chains and car-rental companies. Similarly, many temporal strategic nets aiming to establish new technological standards, such as the coalitions competing in the late 1990’s for the digital mobile-phone system (the Europe-originated GSM, the Japanese-driven PDC, and the Motorola-centered CDMA), generally contain their high-tech suppliers and institutional bodies, as well as a set of competitors.

Multidimensional value nets (MDVNs) range from well-defined value systems to emerging systems exhibiting radical change. A “simple” MDVN contains a hub or a core organization, sometimes called a “hollow” organization, that creates its market offer by integrating the products and services required from a group of different types of suppliers and channel firms. Amazon.com is a good illustration of this kind of “new economy” networker, whose own core capabilities are formed by net building, net coordinating skills and customer-relationships skills. More complex business nets require the knowledge and developmental capabilities of several actors. For example, most e/m-services, such as the emerging mobile-payment systems, require intimate cooperation between banks, telecom companies, and various software producers before the service can be offered to the end customers. At the most radical level, MDVNs are formed with a view to creating new technologies or new business concepts requiring the orchestration of several actors and the creation of new value activities. Technology nets are exemplified by the Bluetooth coalition that is developing technology for allowing the short-distance wireless integration of various terminals with the Internet. Internet portals and new business forms such as the emerging “intelligent or future home” concept, combining multiple home- and living-related services, are examples of new value business nets.

The proposed strategic net typology is obviously another conceptual device, and its “cells” are ideal types. In other words, any discussion of the character of the value-system continuum also concerns the typology. However, we contend that the typology, even with these inherent problems, offers a stronger tool for analyzing the various business nets than the existing literature, cf. Achrol (1997), Cravens et al. (1994), Piercy and Cravens (1995), Snow (1993).

Managing in strategic nets

This section explores three themes: first we briefly discuss the issue of whether business networks can be managed, then we identify and describe the basic management issues involved in strategic nets through a four-level Network Management Framework Model, and conclude by discussing the managerial capabilities required in terms of the value-system continuum.

Can Nets be Managed?

Can strategic nets be managed? There are several opinions on this fundamental question. Many researchers in the strategic school emphasize the role of a “hub organization”, and contend that the hub generally drives the formation and management of the net through the coordination and control of resources and value activities (Achrol 1997, Jarillo 1993, Paija 1998, Parolini 1999, Webster 1992). This is in contrast with the view of Håkansson and Ford, key scholars in the Industrial Network Theory. They argue that a business net cannot be fully controlled by any one single actor because (1) actors, although they are interdependent, are also autonomous; and (2) the activities of each actor affect a larger set of actors in multiple ways, leading to counteractions which cannot be anticipated. The first point relates to the different ontological assumptions about actors and networks that are inherent in various research traditions. There is also a conceptual issue involved: if, say, a supplier net can be fully controlled by a hub, is it a net any longer, or is it a hierarchy (Håkansson and Ford, 1999)? The second point concerns the practical impossibility of achieving complete control of value activities in a complex network environment.

The question of network management cannot be opened up to a fully-fledged discussion in this context. We adopt a pragmatic position and, while agreeing that a strategic net cannot be managed in a strong sense (full control of another actor’s resources and activities), we main-

tain that the management of nets is a relative issue, and that the opportunities and challenges of control and coordination vary considerably in terms of novelty and complexity as expressed along the value-system continuum.

Management In Nets – A Four-level Framework

Drawing on the work of Möller and Halinen (1999), we suggest that the key issues in managing strategic nets fall within four interrelated levels: (1) industries as macro networks, (2) strategic nets, (3) net and relationship portfolios and (4) strategic relationships. These groups of managerial challenges are illustrated in Figure 3, and the first three are addressed here.

Industries as macro networks

Industries are constituted of enmeshed networks of actors, making them often non-transparent and dynamic. Management has to be able to identify and understand the value systems and the actors through which the macro network produces value for the end-customers. The more complex and volatile the value system is, the more challenging the task. Network-visioning capability involves identifying technological development paths and the opportunities and risks involved. It requires knowledge of the actors influencing the network evolution, and competence in interpreting their views and orientation. Even extensive resources do not guarantee this capability, as illustrated by IBM's failure to anticipate the breakthrough of personal computers and the changing role of the operating system owned by Microsoft in the computer industry's value system (Fine, 1998).

INSERT FIGURE 3 AROUND HERE

Large corporations may try to shape the development of whole industries or macro networks by trying to influence the beliefs, goals and behavior of other key actors through “or-

chestration". Nokia Corporation's fall 2001 announcement of its new partnering policy for enhancing and speeding-up the development of the next-generation (GPRS and UMTS) mobile services, involving the sharing of many of its key codes and software solutions, exemplifies an attempt at network management. This kind of orchestration obviously presumes a vision of the network and a strong position and credibility in the field.

The level of strategic nets

Business fields or clusters (Porter 1990) are made up of several overlapping strategic nets. Being able to mobilize and coordinate the value activities of other relevant actors is essential in managing strategic nets. Crucial questions include how a hub company can build value-producing nets, and what kinds of positions and roles it should try to achieve in different and overlapping nets, across various strategic situations. At this level, net strategies may be divided into (i) improving the operational efficiency of a strategic net, (ii) improving the leverage of existing capabilities through participating in one or several nets, (iii) and developing new capabilities through innovation nets (Loeser 1999). These strategies could be pursued by using existing net positions, entering already existing nets, or establishing completely new strategic nets. The fact that several goals can be pursued through one complex net, or— as pointed out in the last section — a set of overlapping nets, complicates the net management even further.

To put it in simple terms, increasing efficiency is the core issue in stable value systems. The incremental improvement of existing capabilities — the “middle range” of our value continuum — requires the ability to create trusting relationships that foster joint R&D projects. When firms try to create new technologies, complex business models, or new business concepts — lying at the dynamic end of the value-system continuum — managers have to be able to orchestrate actors from several different fields. This demands the visioning capability discussed previously, and also networking capabilities in activities such as actor evaluation, cre-

ating direction through agenda setting and motivation, and coordination and control. A key aspect is the ability to identify the roles, capabilities and goals of other important actors, and to modify one's strategy to match the network situation.

The net and relationship-portfolio level

The management of strategic nets could be conceived of as two interrelated portfolio problems. The first concerns the nets in which to operate, and how to coordinate one's net positions, the second how to coordinate the actor relationships in a particular strategic net. Determining which activities to carry out in-house and which to channel through different types of nets is a core strategic issue involving not only the allocation of scarce resources, but also the creation of a new resource. Major companies pursuing several, often interrelated, businesses are generally involved in several strategic nets, either in an integrator role (hub firm) or in various partnering roles for other hub firms (e.g., technology partner, component supplier, distributor partner). In brief, management faces a complicated optimization challenge concerning which strategic nets to operate and through what kind of roles and strategies. This includes issues such as evaluating the future importance of the value net in terms of its business potential, evaluating one's influence potential in a net, and finally how the nets are interrelated and how a firm should take that into account in coordinating its portfolio of net positions. These issues are obviously intimately related to the net strategies discussed on the previous level. The portfolio perspective emphasizes the firm's capability of developing managerial processes and organizational devices for efficient operation in multiple nets.

Each net is constituted of relationships between its key actors. Relationship-portfolio management in a specific strategic net is closely related to questions of position and roles. The portfolio perspective underlines the need to handle suppliers, customers and different horizontal relationships (coalitions/ alliances) as effectively as possible. Managers have to define the organizational forms and contracts that their company will use to handle its net relationships.

The challenge in portfolio management is to evaluate the future value of potential customers, suppliers and other relevant actors in order to adapt investments in relationships to their value. Managers should also foresee the potential risk and benefits of actor bonds. Some customer relationships will deter some new relationships, while encouraging others (Ford-McDowell 1999).

Net-management - Capability discussion

Our discussion of the challenges and capabilities involved in the management of strategic nets remains rather general. It is obvious that the type of net has a strong influence here. This aspect is addressed through the Network-capability-base Framework, described in Figure 4. It shows, in a simplified manner, how we consider capabilities to be linked to value creation in the network context.

The capabilities needed in value production are presented in an approximate order of ascending complexity. In doing this, we do not mean to imply that the capabilities at the left end of the value-creation continuum are less important. On the contrary, being able to produce core value through established vertical nets is generally a necessary condition for achieving incremental innovations through partnerships, and these provide the platform for more radical innovations through the future-oriented strategic nets. In the same vein, being able to manage one business relationship well is a necessary learning step towards being able to work in a net of complex relationships.

INSERT FIGURE 4 AROUND HERE

The capabilities are presented on two rows. The lower row refers to more traditional business competencies and the upper row to the capabilities needed in managing strategic rela-

tionships and business nets. Although the capabilities are presented in rows, a set of them is generally required to produce any type of value. Broadly speaking, the more complex the value system in question and the more actors that are involved, and the more intensive the actor relationships, the more multifaceted the required set of capabilities becomes.

If we start from the left and examine the management of an efficient customer-driven supplier net, it is clear that the capability to integrate and coordinate the value activities of each net member is essential. A prerequisite is that, in the first place, the hub can mobilize a set of actors willing to form a tightly coordinated supply and channel net. This requires a well-established position in the field and a keen customer demand reflected in strong brands as exemplified by Nike and Dell. A strong demand position is essential for signaling important component vendors that they can benefit from a closer value net by larger volumes and more stable demand. This is also an essential point for specialized small suppliers, who generally fear that the flexibility of the system is their burden. The stronger the position of the hub firm, the more selective it can be in choosing the net actors.

The coordination capability of this kind of vertical value net is manifested in the information and management systems that combine the business processes of each actor and monitor the efficiency of production, logistics, and customer delivery and service. In an advanced case this would lead to the coordinated management of a complete value system, ranging from customer care to the production of components, and would require the combination of current tools of Supply Chain Management, Enterprise Resource Planning, and Customer Relationship Management (see e.g., Means and Schneider 2000, Lambert and Cooper 2000).

From a partnering and often smaller firm's perspective, there are a few capabilities that can be identified. An attractive partner should have an efficient and flexible production system, it should be able to integrate its processes into the value activities of the net, which presumes

adequate information systems, and it should be able to make rapid production adjustments. These characteristics increase its value as a supply partner in a tightly controlled net.

When a strategic net is used for fostering local product, production-technology or business-process innovations, more intimate and trustful relationships are needed between the actors. Joint knowledge creation requires an open and trusting culture (Teece, 2000, Nonaka and Teece, 2001). This demands a partnering orientation and personnel who have the strong interaction skills that are necessary in multiparty and cross-functional teams. Actors must share privileged organizational knowledge and be able to view value activities and changes in them from each other's perspective, reflected in a "what can we do for them – what can they do for us?" attitude. A hub firm should also be able to evaluate these capabilities and the innovation capability in its partner candidates. Innovation capability is manifested in an actor's record of product improvements (better functionality, lower costs, or both), and of production- and delivery-process innovations (in terms of the influence on functionality and costs). Besides its innovative and relational capabilities, a partner firm should be able to evaluate which available and emerging nets to try to enter. This involves the evaluation of what nets provide it with the best chances of enhancing its own business potential and growth.

The creation and management of strategic nets to develop novel products and business concepts demands several complex capabilities. A hub firm should be able to envisage the development of the business field in question in order to identify and evaluate potential net partners and set realistic goals. Such a capability could be manifested in a record of technological and/or business breakthroughs in one or several fields. The mobilization of a net requires a strong position in the field; the hub firm must have specific resources and knowledge that make it an attractive mobilizer so that it is able to select autonomous partners and manage the resulting strategic net. Net management requires an organization-wide network-player orientation, with the key personnel sharing and supporting the achievement of joint goals. The hub

firm must also be able to create an organizational forum for sharing the work and responsibilities between the net actors, as well as creating coordination mechanisms for the net cooperation, Gadde and Håkansson (2001). This includes organizing multilevel and multifunctional contacts, and teams in general, involving several actors and supported by an integrated information system. It is thus clear that net management, especially in nets targeting new business concepts, involves knowledge management, and especially mastering joint knowledge production. Actors must be able to foster the learning environments that allow the explication and combination of tacit knowledge, and the sharing of new knowledge (Nonaka and Takeuchi 1995). In this respect, the literature investigating innovation management, knowledge management and dynamic capabilities is also a relevant source of information on managing in a network context.

Finally, network-orchestration capability at the right end of the value-creation continuum refers to an actor's capacity for influencing the evolution of a whole new business network. Orchestration presupposes the ability to envisage the emerging business field - which may be very complex like the convergence of the ICT field, the entertainment business and future home solutions suggests - and its key actors, and to identify potential trajectories. Being involved in different parts of the emerging network enhances this managerial sense making, as it introduces several learning experiences and new perspectives. However, these experiences can only be turned into a visioning capability if the top management is able to bring together these organizationally-dispersed views through a knowledge-management system. Through envisioning, a major actor can develop an agenda for influencing the field to move in a preferred direction. Agenda setting involves communicating one's beliefs or visions of where developments are most probably leading, and where they should be heading. This may take place through the public media and through different actor relationships. A recent example is Nokia Mobile Phone's announcement at the Comdex Fair in Las Vegas in November, 2001.

It told the world how it viewed the development of the emerging “mobile services world”, and how Nokia was going to facilitate the realization of its vision. Clearly, not any actor can become a network orchestrator. The role requires visioning and strong communication and persuasive skills, coupled with the kind of credibility that can only be achieved through both an intimate understanding of the field and a strong business position. Firms with eminent roles in several strategic nets have a good basis for becoming network orchestrators.

Conclusions

We conclude this conceptual article with a brief discussion of the theoretical and managerial implications, and suggest some directions for future research in the field. The notion of value-creating systems, especially the work of Parolini (1999), provided the basis for our proposal for a value-system continuum that could have a central role in examining and understanding strategic business nets. By combining the value system with the net goal and structure – whether it incorporates vertically- or horizontally-related actors, or is multidimensional – we derived a classification framework for identifying the basic types of strategic nets. We contend that this framework captures the complexity and variety of emerging strategic business nets in a more valid way than extant classifications of network organizations (cf. Achrol 1997, Cravens et al. 1994, Piercy and Cravens 1995, Snow 1993).

The value-system approach was also used to examine the managerial challenges posed by different types of nets. This analysis produced another conceptual framework (the Value Production and Network Capability Base) explicating the managerial capabilities required in solving task-related and decision-related problems in areas ranging from core-value production, through value-adding relational value production to future-oriented value production. Overall, the more stable the value systems and the tighter the control required over the value activities, the more likely the hierarchical form is to be dominated by the hub firm. On the

other hand, the less specified the value activities and the more dynamic the systems are, the looser the net structure is. The management of these flexible nets is effected partly as a result of self-organizing by the participating actors, and partly as a result of agenda setting by the more visionary participants. When the value system becomes more structured, its value activities can be coordinated more efficiently through agenda setting. Although this framework remains quite general and needs further development, we believe that it makes a worthwhile contribution to emerging literature on network management.

From a managerial perspective, our key point is that different types of business nets require different types of organizational arrangements and managerial capabilities. The conceptual tools discussed above provide strategic-level, theory-driven guidance for corporate- and business-unit-level business planners and strategists. The generality of these tools, while a limitation in the hands-on operational management of a particular net, is a strength in terms of helping to form an overall map of the types of nets a company is involved in, the kinds of roles it has, and the kinds of capabilities it needs. In spite of these conceptual breakthroughs, we see strategic network management as still being in its embryonic phase. Several issues worthy of urgent attention emerged even in this study.

There is a need for more knowledge about the organizational arrangements and managerial practices in nets aiming to create radical technological innovations and new business concepts. This also concerns complex multidimensional but temporal coalition-type nets, exemplified by the Bluetooth collaboration, and concerted actions aiming at the orchestration of emerging business fields. Our empirical knowledge of net characteristics and the managerial capabilities involved remains too thin. Another challenging theme is the simultaneous operation in multiple, and often interrelated, strategic nets that leads to net-portfolio questions concerning the types of nets in which to operate, how to select the “right” net when there are alternatives, how to coordinate and manage net positions efficiently, and the kinds of organiza-

tional solutions that are feasible. It is possible to discern the same kinds of issues in terms of the relationship portfolio between key actors within a specific net. What partners should be selected, and according to what criteria and procedure? How should the roles and responsibilities among the actors be allocated? How could the working of the net be efficiently coordinated? Answers to these questions would greatly enhance our understanding of the behavior and management of strategic nets, a pertinent topic in the world of rapidly globalizing macro networks and e-speed connectivity between their core actors.

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