Managing in Networks: a case study of different types of nets

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Abstract

This paper focuses on management in different types of strategic business nets. Firstly, the paper illustrates three different ideal types of business nets: stable, incremental and emerging value systems. Secondly, it examines management and organizing issues in these cases to find out whether managerial practices differ between the ideal types. Finally, the results of the case analysis are compared to theoretical assumptions of the ideal types.

Key words: Business networks, network management, case illustrations

Introduction and purpose of the study

This study examines the management challenges in different types of strategic business nets. A key issue for effective management is to understand the characteristics and logic of business networks. Based on recent work by Möller and Svahn (2003), I suggest that the manner in which a network produces value for its end customers provides a fundamental basis for this understanding. The main premise is that different types of net require different management.

The main purpose of the study is a critical evaluation of the validity of a value-creation framework using case analysis. The value-system continuum is developed firstly using early ideas of Möller and Törrönen (2003) and secondly a literature review focusing on methods of combining value activities by multiple actors into a value system (Anderson and Narus, 1999; Cravens et al., 1997; Doz and Hamel, 1998; Gadde and Håkansson, 2001; Norman and Ramirez, 1993). Möller and Svahn (2003) state that the nature of the value system continuum and the goal of the net have a strong influence on both how to organize the net and how to manage it. Möller and

Svahn (2003) assume that different types of nets require different management and thus different managerial capabilities. The second goal of the paper is to illustrate ideal types and identify the basic decision domains, managerial activities, and organizational and knowledge-management challenges faced by actors in strategic nets.

Three cases are used to illustrate the differences between different types of nets: stable, incremental and emerging. These three cases are selected to represent an ideal type for each category. The illustrative cases represent the "most ideal" types of net. Some of the cases are between two ideal types. The characteristics highlighted in the ideal types are similar to those in other nets in each category. These characteristics are believed to have a strong influence on the management of different types of nets.

The outline of the paper is as follows. Following the Möller and Svahn (2003) categorisation of three ideal types of net, I first illustrate this with the three case examples. Second, an empirical analysis is based on the illustrative cases. The conclusion of the paper discusses the empirical findings about managing in strategic nets.

Different Types of Value systems with example nets

As the concept of a value-system continuum is based on an extensive literature analysis by Möller and Svahn (2003), the theoretical basis is not discussed in this paper. The Möller and Svahn (2003) literature review covers both theoretical network studies and the managerially-oriented description of business networks which enables management issues that concern strategic nets to be identified (Achrol, 1997; Achrol and Kotler, 1999; Anderson et al., 1994; Anderson and Narus, 1999; Axelsson and Easton, 1992; Dyer and Nobeoka, 2000; Ford, 1990; 1997; 2002; Ford et al., 1998;

Gadde and Håkansson, 2001; Gulati et al., 2000; Håkansson, 1987; 1989; Håkansson and Snehota, 1995; Jarillo, 1988; 1993; Miles et al. 2000; Möller and Halinen, 1999; Möller and Wilson, 1995; Ollus et al., 1999; Parolini, 1999; Powell et al., 1996; Strategic Management Journal Special Issue 2000; Uzzi, 1997). Möller and Svahn (2003) distinguish strategic nets from business network by using the word 'network' to refer to macro, industry-level networks. A net is something that is developed by intention and formed by a limited number of actors for a specific purpose.

Möller and Svahn (2003) use the value-system concept for describing the characteristics of business nets and contend that the level of determination in a value system has a great influence on management in an associated net. By 'determination' they mean the extent to which the value activities of the net are known, the capabilities of the actors in carrying them out, and to what extent these value activities can be explicitly specified. Value creation is illustrated using a value system continuum (Figure 1) that presents three ideal types of value systems. By identifying the characteristics of its underlying value system, a strategic net can be positioned on this theoretical continuum.

The left end of the continuum represents clearly-specified and relatively-stable value systems. The actors that produce and deliver specific products, and their value activities and capabilities, are known. Multi-tiered supply nets in the automobile industry are based on this type of value system (Dyer, 1996). Möller and Svahn (2003) suggest that Toyota, Dell, IKEA and Nike illustrate well-specified supplier or distribution solutions based on strategic nets which generally pursue efficiency gains in terms of production/logistics and time compression, that offer rapid growth opportunities and access to a wider customer base than just one company has.

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

The right end of the continuum represents emerging value systems that are aimed at developing new technologies, products or business concepts. These future-oriented systems may require both radical changes in existing value systems and the creation of new value activities. This is the landscape that Eisenhardt and Martin (2000) describe as "high-velocity markets". For example, Internet portals and emerging mobile services are generally created through strategic nets which involve a telecommunications operator, several "middleware-type" software producers, and content/services producers. Emerging value systems involve complex collaborative learning processes (e.g. the Bluetooth coalition). Uncertainty and a tacit approach to value activities, actors and their capabilities are inherent features of such systems. Nets formed to create emerging value systems pursue technological and business solutions that are significantly more effective than existing ones.
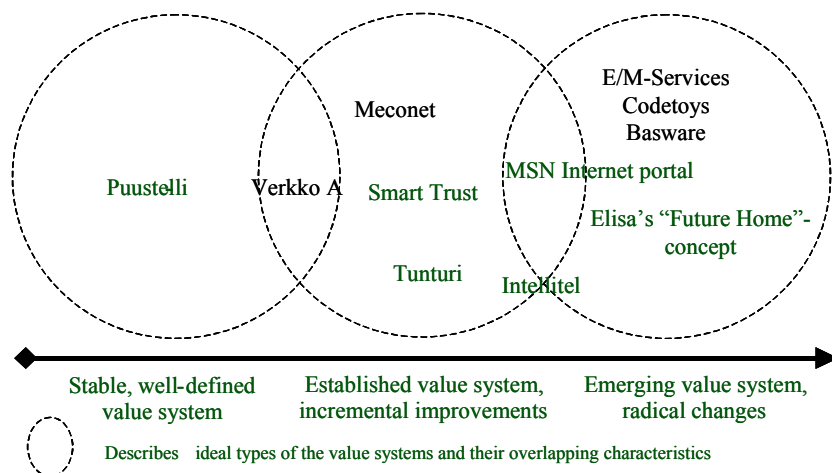

Figure 1. Value system continuum with study case examples (Adapted from: Möller, Rajala and Svahn 2003)

Case study methodology

The goals of the study were to identify what kind of nets that exist in Finland, how these nets are managed and the types of organizational structure employed. As there was a lack of information about strategic nets, data was collected by "net mapping". Basic knowledge about strategic nets was obtained by working through, among others, on-going technology projects funded by Tekes (the National Technology Agency in Finland), projects in different universities, ministries and other research institutes. Related studies, reports and other publications connected with strategic nets were also explored. Once a strategic net had been identified, telephone interviews were conducted and the ten most interesting cases representing were selected for further study. The ten cases were: Puustelli, Meconet, Verkko A, Microsoft's MSN portal, Springtoys, Basware, Sonera's subsidiary Intellitel, the alliance between SmartTrust and Compaq, Elisa Communications and Tunturi (see Figure 1). The qualitative case study was conducted using these ten net cases. During the selection process, each case was *a priori* positioned on the value-system continuum with the intention of finding evidence for each ideal type of net. As recent studies have, in the main, concentrated on stable, well-defined nets such as supply chains, research was focused on future-oriented, emerging nets.

Different Strategic Nets

In this section, the different types of strategic net are described by using three illustrative case examples. Each case is first described, then analysed and compared to an ideal type in the next section of this paper. Each case description includes: development of the net, methods of choosing and evaluating partners, organization

and management of the net, rules, contracts and the transfer and management of knowledge.

Case Puustelli – a supply net

The Puustelli net operates in the woodworking industry and is formed around the Puustelli company. Puustelli is a family business founded in 1920 which produces kitchen and bathroom cabinets and hallway furniture, and net sales by Puustelli totalled EUR 85 million and the company employed more than 1000 people. Most of Puustelli's turnover comes from kitchen furniture and it is a market leader in this sector in Finland. This case focuses on Puustelli's kitchen business. The company's main customers are private consumers: i.e. families and households. Puustelli offers a complete service package which includes finance, delivery and installation, and supplies its products to 12-13 000 household customers each year. Approximately 15% of Puustelli's production is exported to Sweden, Russia, Estonia, Lithuania, Latvia and Poland.

Puustelli began to outsource its activities and develop its network organization some ten years ago and it now outsources a large proportion of its activities i.e. the manufacturing of components and appliances, to other suppliers. Since the 1990s, the Puustelli net has been intentionally developed by improving the efficiency of operations (for example logistics and operational quality) by minimising warehousing and overlapping work phases. Competitive advantage in pricing was achieved through development projects. As Puustelli still assembles all its end products, logistics and the efficient matching of material flows are given high emphasis in this net. The delivery of all components to the hub company requires that partners have clearly-defined roles. Puustelli's extensive supplier net enables it to offer a broad assortment.

The Puustelli net consists of more than 200 component suppliers, 48 franchising stores, 20 export stores and a transportation company.

Puustelli controls and coordinates all the activities pursued and operations carried out in the net, for example research and development. All product specifications are decided by Puustelli and delivered to its net partners. In addition to product specifications, Puustelli provides technological support if suppliers require this. As Puustelli also transfers tacit knowledge to its net partners in the form of, for example, product consultation.

Control over all decisions is in the hands of either Puustelli's CEO or the company's managing group. The net does not have any mutual managing committee. Operational decisions and activities are organized and carried out via contact personnel: each supplier has assigned contact persons in Puustelli. The net has a low level of bureaucracy, there is only one weekly meeting with a supplier – the local delivery firm.

The Puustelli net has written goals: happy customers, a successful company and a serviceable network. The strategy of the Puustelli net is defined "cost efficient with each party concentrating on their core competencies". According to the telephone interviews, trust plays the most important role in relationships – in the absence of trust there will be no fruitful collaboration. Little monitoring of the net for compliance with the rules has taken place. Quality levels and delivery times have caused disagreements.

In this case, the critical factor at the operational level is logistics. In particular, there are problems in transferring information concerning development issues. The boundaries to mobilising knowledge are mostly between companies. For example, one supplier may put a product improvement into effect and forget to provide information

about it, and this may lead to problems when assembling other components. Modern information technology has however increased access to knowledge, Puustelli has CAD systems and has integrated all its stores into the same system. Once an order has been placed it is sent to the hub via the information system.

Case Meconet – an integrated corporation

Meconet is an established net that was developed through incremental changes. In 2001, the net 'format' was abandoned and the net merged into the consortium. The study emphasises how net was created and managed. Meconet manufactures small customised miniature steel components under subcontract to larger companies such as Nokia, Benefon and Abloy, and its competitive advantage is based on specialist competencies such as the handling and production of special materials and parts and rapid delivery times - sometimes counted in just hours. In 2001, Meconet recorded net sales of EUR 27.5 million and it employed 230 people. The company has operations in Helsinki, Espoo, Äänekoski, Pihtipudas and Tallinn and is targeting growth in both national and global markets.

Net collaboration began in 1991 when two firms began joint operations because they wanted to enhance their competencies by concentrating on core processes. The initial target of cooperation was to pursue delivery volumes larger than those which each firm was capable of carrying out alone. Another target was to develop best practices by learning and copying each other's processes and by developing businesses together. Collaboration was based on mutual trust and acquaintance. The level of cooperation was extended by founding a new company, with existing machines, personnel and production being transferred from the two old companies to the new one. The new entity jumped into growth, developed new

business areas and expanded its operations. Collaboration was expanded through acquisitions and the net eventually included seven companies.

The net was consciously developed and benchmarked against similar types of structure in different industries. It was managed through a management team featuring managers from all the companies. A personnel manager, project manager and information system manager were hired to run net operations. All activities were managed on a project basis. At the beginning, there was no systematic management and the main principle was that of finding a consensus rather than forcing through any changes. Discussions were continued until a consensus was achieved.

When seeking partners, Meconet evaluated each potential partner's technical competence, quality tools and process management. Quite naturally, costs also influenced the choice of partner, but not to the same extent as the other factors. To date, the net has been able to rely on its existing relationships. It has not paid attention to its partners' evaluation systems, but an evaluation system for use by partners to evaluate acquisitions is in the planning stage. Meconet's plans require that a proportion of growth is achieved through acquisitions.

The rules of the net essentially concern operational issues. Even though rules concerning personnel were created in the early phases of cooperation, activities were mainly based on trust and openness. Rules were employed to create common habits and common practices because each company in the net had a different organizational culture. Currently, there is a greater concentration on rules and the net has written rules for operational actions concerning, for example, personnel.

Meconet did attempt a development project in connection with managing knowledge, but the project failed, possibly as a result of the company attempting to develop too many issues at the same time. Since some operations are still based on

competencies possessed by only couple of individuals, Meconet is developing ways to mobilise tacit knowledge. For example, people are moved between shifts to promote the transfer of "person-specific" information between individuals. In this connection, the interviewee stated that "Personnel are not withholding information - it has just not occurred to them that they actually have this type of information." Meconet is also developing a "yellow pages" system which gathers together who knows what in order to make communication easier.

Personal contacts of one manager played a major role in building this net. These contacts provided useful information about both networks and the channels which can be used in business e.g. to obtain financial support. These contacts included, for example, Finnish institutions such as TT - The Confederation of Finnish Industry and Employers and MET - The Finnish Metalworkers' Union. The manager had been a member of the executive committee in these organizations and had gained information about managing networks through the resulting contacts. One of the driving forces behind the whole networking project has been his ambitious goals and his continuing effort.

In 1997, communication problems between companies in the net resulted in a development programme being launched. As a first step, information systems being employed between companies were standardised. Although operations were being developed through the net, the process was not efficient enough to gain competitive advantage and in 1998 it was decided that the seven separate businesses should be merged. These rearrangements, which did not involve any financial transfers, were based on a common decision to continue business within a single organization. The managers who had built up Meconet's operations simply decided how operations should be conducted in the future.

Case Codetoys – an emerging net

Codetoys was founded in 2000 under the name Springtoys. The company changed its name to Codetoys while Springtoys and Code-on-Line Ltd merged in January 2002. The Codetoys net is R&D collaboration aimed at developing a software-development-technology toolkit (the SDK kit /Game Creation Suite ^{TM}) which developers can use to speed up their development work and the production of games in mobile entertainment services. At the beginning, the business idea was to develop mobile games and entertainment services and sell these to teleoperators. After the company was set up, it was discovered that the tools for developing games did not exist and a software-development-technology toolkit was therefore produced for Springtoys' own use. At the beginning of 2001, Springtoys made this toolkit available as a commercial product and started developing its game business further.

The primary requirement of the toolkit was to provide an internal tool that is why the operation begun by documentation the software and creating a clear method of releasing new product generations. Springtoys' next step in developing the business was to establish a website (www.gamecreationsuite.com) which supports the technology. The website presents examples of the possibilities that the product offers and also recruits new net partners. Through the website, potential partners are offered the opportunity to test the product at no charge. Codetoys is developing a virtual community around the website which consists of customer companies. The goal of this virtual community is to create a net in which activities are not only initiated by Codetoys, but in which all members of the net create and share new knowledge. Codetoys has two units: Tools and Games. Codetoys Tools develops the software toolkit, and transfers and shares knowledge with other developers. In addition to this communication, developers share knowledge directly without involving Codetoys but

this type of communication is not as active as communicating through Codetoys. The other partners in the Codetoys net are teleoperators and service aggregators (service aggregators purchase mobile games and entertainment services from different developers and sell them to teleoperators as a service package).

An informal team made up of commercial and technical experts in Codetoys selects new net partners based on applications submitted via the website. After Codetoys has established that company concerned is in the same field, it concludes a written trial contract concerning trial use of the toolkit. The trial period is based on an agreement between Codetoys and the applicant, and is usually some two months. During the trial period, the applicant is able to fully utilise the services provided by the Codetoys net and software development is not restricted. All the software applications provided by Codetoys are included in the trial version, the only limitations concerning commercial application are the inclusion of test messages into the system. As the trial period comes to an end, Codetoys offers the application developer a commercial contract. Each applicant's experience with the software is queried, even in cases where the applicant is not willing to continue the contract. In a commercial contract, partners in the net pay a quarterly usage licence for using the software and support services. The licence is required regardless of whether the partner is developing its products by using Codetoys' software.

The first collaboration partner was a Finnish company called Grips Studio (formerly Visband). This company was enough of an outsider to bring an innovative approach to cooperation and enough of an insider to be aware of the business area. Grips Studio used the toolkit on a trial basis, evaluated it, and offered advice on how it should be developed further. Good social relationships were given very high emphasis in the initial phases of the development work, since people working in this

field often have an egoistic attitude towards their work. It is very difficult to get a developer to use development software created by someone else because doing everything "one's own way" is a very common attitude. Satisfactory resolution of this issue with the first net partner played a significant role. Social contacts and Springtoys' reputation were factors that enabled the first collaboration. Springtoys had high quality products and Grips Studio knew these products had been produced using the development toolkit. After the first phase, Springtoys supplied a couple of content developers and teleoperators with the toolkit for a trial period. The aim of offering the tool kit for trial use was to create a picture about the markets.

In the Codetoys net, knowledge is transferred through Codetoys to the other partners by new product versions and Frequently Asked Questions (FAQ) pages that are open to all partners and feature Codetoys' answers to the questions that partners have submitted.

Discussion

In this section, the different ideal types of strategic net described in the previous section are analysed and conclusions are drawn. The Puustelli net is compared to theoretical assumptions about stable value systems, the Meconet to incremental value systems and the Codetoys to emerging value systems. The main purpose of this study is to find empirical support for the value-creation framework proposed by Möller and Svahn (2003) and the premise that different types of net require different forms of management. The conclusions about each net are arranged in the following order: organizing and managing, working procedures, knowledge management, social atmosphere and performance.

Puustelli conclusions

Möller and Svahn (2003) state that the left end of the value-system continuum describes clearly-specified and relatively-stable value systems in which the actors producing and delivering specific products, and their value activities and capabilities, are basically known. These ideal qualities match those of the Puustelli net: the partners and technologies are well known and the environment is essentially stable. Puustelli also pursues efficiency gains in production/logistics and scheduling, in rapid growth opportunities, and in seeking access to a wider customer base (a feature of well-specified supplier or distribution solutions based on strategic nets). Also, the role of Puustelli company is strong, and this is evident in tight monitoring, decision-making and R&D processes. Möller and Svahn (2003) suggest that in nets positioned at the left end of the value-system continuum, the hub company tightly controls all activities. Puustelli's CEO and its managing group make all the decisions and other companies do not participate in the decision-making process. The Puustelli net is therefore strongly hierarchical. By delegating and by involving other partners in decision making, Puustelli might inject more innovation into the net and obtain more commitment from the other partners to collaboration. The main managerial activities in the net have been different development projects, for example developing information systems and "networked" ways of operating. All other activities, such as joint excursions between companies, have been abandoned because they were not regarded as useful.

The role of an information system is central to the Puustelli net. It helps in matching material and information flows between the net partners and creates a basis for the effective management of these flows. For example, stores are integrated into Puustelli's planning and ordering systems. On the other hand, the information system employed is based on standardised product concepts that have caused problems in the

customising of products. For example, not all special parts feature in the information system. The management of logistics is based on transferring knowledge concerning orders, product specifications and product information, and integrated information systems support this. Even though the integrated information systems support knowledge management, the net is in need of investment in this area, especially in transferring knowledge concerning development projects and product improvements. For example, R&D activities are currently initiated solely by Puustelli. By rewarding its partners for their innovative ideas Puustelli might encourage them to share more knowledge. In the Puustelli net, challenges for knowledge management would include be to establishing effective ways of channelling feedback from both customers and installation personnel, especially as installation is contracted out. Puustelli should also decide on the type of knowledge that is distributed to and collected from subcontractors and sales persons. As subcontractors give specific knowledge to outsiders, there is always the risk that important information will leak out and Puustelli could lose a part of its critical know-how/competence. Effective knowledge sharing is an essential condition for the co-creation of knowledge, but the Puustelli net has no joint knowledge-creation activity. This type of activity should be initiated in order to improve competitiveness, levels of innovation and increase Puustelli's market share. One example of this is the so-called future-home concept. As this new trend affects the furniture business, Puustelli should be able to participate in, and gain competitive advantage from, on-going developments.

Most operations in the Puustelli net are based on mutual trust. Obviously, the threat of opportunism increases if activities are based solely on trust and verbal agreements. It is interesting to note that the Puustelli net exhibits a high level of trust in spite of the fact that there is little mutual social activity. In this case, trust may be

based on the long-term, well-established position held by the net and on everyday working practices.

The organization of activities in the Puustelli net has been planned carefully, because logistics is the most important feature in a supply chain. For example, the CAD planning system into which all stores are integrated maintains knowledge flows. Efficient operation is based on supplying all components to the hub and distributing product specifications to all partners and suppliers from the hub. The Puustelli net is very efficient and it operates "like clockwork". In this case, the most obvious advantage is that all the parties in the net are concentrating on their core competencies. Quality is therefore at peak levels and the net generates a price advantage and produces a strong brand. Puustelli's attitude to the net, i.e. that it is self-evident, means that the threat of competitors developing a better net exists.

Meconet conclusions

Meconet operates using tightly-controlled delivery routines in which schedules are sometimes counted in hours. Even though the net is tightly controlled, R&D in the net is based on incremental innovation. It therefore represents the middle of the value-system continuum i.e. a net with relatively-well-determined value systems that are modified through incremental and local improvements (Möller and Svahn 2003).

Even though Meconet was operating as a net, managers decided that the method of operation did not yield adequate efficiency gains in terms of logistics and scheduling. A mutual decision was therefore made to transform the net into a concern consisting of seven small and medium-sized companies and managed by a team made up of managers from all the companies involved. As no financial transfers took place, the merger was an ideal example of balancing power between companies. The net employed a number of people to run its operational routines, and it was deliberately

developed and benchmarked against similar structures in other industries. All activities were organized as projects.

Companies attempted to ease communication problems between companies through a development project. Firstly, information systems used between companies were integrated. Knowledge-management challenges in Meconet are related to managing knowledge flows between projects and combining the organizational cultures of different companies into a common culture. Meconet already improves knowledge transfer by, for example, moving people between shifts, since some operations are still based on competencies possessed by a small number of individuals. It has also founded a "yellow pages" system which details who knows what in the organization.

According to the interviewee, the success and unique nature of the Meconet net are founded on competent personnel and the skills and capabilities these people possess. Meconet has an environment of trust, but managers were surprised that building this trust took such an enormous amount of time. In the main, rules have been concerned common ways of operating. One key issue in developing this net has been the commitment and enthusiasm shown by one particular manager in developing the business further. Meconet has utilised this individual's extensive social networks and good relationships with national organizations.

Meconet has developed "back to hierarchy-concern" out of a decentralised form of net, with the objectives being shorter delivery times, increased operational integration, and credibility through scale. Efficiency and effectiveness are in balance in Meconet. Efficiency is the result of successful deliveries and effectiveness is the result of active learning, for example innovations in the handling of special materials, responding to customers' demands, and partnering with demanding companies such as

Nokia. In summary, Meconet's competitive advantage is based on matching rapid deliveries and the continuous development of capabilities and knowledge.

Codetoys conclusions

Codetoys represents the right end of the Möller and Svahn (2003) value-system continuum, i.e. an emerging system aimed at developing new technology, a software development toolkit. This is a completely-new business concept that is developed with the help of net partners through radical changes in existing value systems. It is a typical example of emerging mobile services that are created by strategic nets involving a telecommunications operator, several "middleware-type" software producers, and content/services producers. Development work on the toolkit is based on complex collaborative learning processes. For example, factors such as important partners leaving the net and new emerging technologies introduce uncertainty into the net. Nets that create emerging value systems pursue technology and business solutions which are significantly more effective than existing ones.

Codetoys's activities have a firm foundation in website pages that are available via the Internet. For example, the distribution of new product versions and recruitment of new partners take place this way. Codetoys has a strong role as developer of the technology, other partners have a strong influence on further development of the technology, for example the toolkit's usability and characteristics. Allowing potential partners to use the product as part of a free trial offers opportunities for growth since Codetoys can collect information about how customers actually use the product. Knowledge is transferred and created and partners provide Codetoys with concrete advice to Codetoys on improving product characteristics. The primary risk in collaboration is that of piracy, this risk can be limited by collaborating with companies rather than private individuals.

Codetoys performance is primarily based on its effectiveness, i.e. employing innovative ideas to develop both its toolkit and mobile games. It is a joint R&D net of developers and customers. In the first phase of Codetoys' operations, development of the toolkit took priority. Currently, it is developing both the toolkit and the virtual community around the Codetoys company.

Conclusions of the study

The nets described in this paper were formed with the aim of achieving advantages in terms of cost, quality, scale, specific know-how and learning. These issues were regarded by the participants as the most obvious advantages provided by the nets. Managerial issues were given little consideration, but all three nets are starting to pay more attention to management issues, for example partner evaluations and net organization. Knowledge management, especially the transfer and co-creation of knowledge, continues to be a challenge for all the nets. Social networks played an important role in building up the nets; in general this consisted of cooperation between acquaintances. Even though trust was given considerable emphasis, all the nets were in the process of replacing verbal agreements by written rules and contracts.

All the ideal types of strategic net described in this paper support the value-creation framework. In the Puustelli net, the main characteristics are: tight logistics, a central role for information systems, and high net efficiency. Meconet is simultaneously efficient and innovative by developing new manufacturing techniques to match customers' needs and matching these with tight delivery schedules. Codetoys' net is based on innovations in which the hub is the developer and the other partners provide advice on development work through a virtual community. Management is different in each type of net: Puustelli dictates from the hub, in

Meconet, each company is equal in its ability to influence events; and in Codetoys, partners can share opinions but the hub company makes the final decision.

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