Network picturing, messing up, or managing in a dynamic business network?

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Abstract: The aim of this multiple-case study is to extend our understanding of business network management, especially from the viewpoint of B2B companies operating in multiple network contexts. Dynamics in networks are created through the intended and emergent actions of network actors, and in order to manage actors and their activities within a dynamic business network setting, managers need to understand the "network picture" of their company and the network perceptions and interests that the other actors have. We present a multiple case study where network picturing was utilized as a boundary-spanning tool to grasp these aspects.

Keywords: Network picturing, network dynamics, multiple case study

INTRODUCTION

Business network dynamics consist of a complex pattern of activities that are intentional or emerging, strategic or operative (Håkansson & Snehota, 1995; Ford et al., 2003; Järvensivu & Möller, 2009; Halinen et al., 2012). In other words, the dynamics of a network are defined by each actor's actions, which are steered by their past, current and future expectations (Håkansson & Ford, 2002). Thus, varying opinions exist on the extent to which networks are intentional or emergent, giving rise to debate about their manageability (Rampersad et al. 2010). In order to manage actors and their activities within this dynamic business network setting, managers need to understand the perceptions and interests that the other actors have (Valkokari, 2015). In the IMP literature, network pictures have been defined as business actors' subjective mental representations of their surroundings, and thus as sense-making tools that underlie decision-making in networks (Mattsson, 2002; Ford, Gadde, Håkansson, & Snehota, 2003).

Network pictures have also been used by researchers and practitioners as a tool to grasp actors' understanding of their surrounding business network (Henneberg et al., 2010; Ramos & Ford, 2010). In practical network management, as well as in academic discussion, the business networks are most typically explored as vertical 'supplier–customer' relationships, while other dimensions have had scarce visibility. There is a need to take a broader view of networks and to deepen our understanding of network management practices in different network dimensions. Furthermore, more "practice-oriented research" in studies on business networks is required in order to understand dynamic phenomena such as a network's change process (Kjellberg & Helgesson, 2007; Halinen et al., 2012).

This study aims to explore several dimensions of business networks, including perspectives such as networks related to supply, customers, distribution, services, development, and innovation. Furthermore, we have focused on cases in which at the very least there are three parties involved, i.e. our focus has been on networks rather than on purely dyadic partnerships. The research methodology used in this study was a qualitative multiple case study. In addition to the joint business activities and strategic intentions, the evolving and dynamic nature of networks is given as a counterpoint in this study. The twelve case companies participate in a development program where the focus is on relational business practices. Thus, they were already familiar with discussion on inter-organizational networks. Empirical research data were gathered by means of workshops and in-depth interviews with key persons in the companies participating in the program. Drawing from the management point of view, our preliminary research question is: *How does network picturing support sense-making and managerial network positioning in business networks?*

The paper is structured as follows; we first briefly consider the theoretical background of the management of dynamic business networks, network pictures and sense-making as a means to support network development and future-orientation in networks. The second section of this paper presents the research methodology and the latter the case findings. The paper concludes by summarizing the present contributions and also considering possibilities for further research.

BACKGROUND

In this study, we define the network in line with Halinen and Törnroos (2005) as "*a set of companies and potentially other organizations connected to each other for the purpose of doing business*" and apply the school of thought that a firm can intentionally develop and orchestrate its network relations. These intentional business networks, with three or more parties involved, share common goals and efforts to create value for all partners (Valkokari, 2015).

In business networks, the structure and roles of the members may vary from focal company-driven and strongly coordinated networks to distributed, loose forms of cooperation (Möller et al. 2005). Most research on business network management adopts a firm-centric approach, neglecting cross-relational tasks (Ritter et al. 2004). Furthermore, both academic discussion and managerial practices are typically limited to considering one direction or type of network, i.e. each function of an organisation (from sourcing to sales) typically has its own view of networks; academic discussions are distinguished, for instance, by whether the focus is on either supply chain management (Lamming, 1996) or innovation network orchestration (Dhanaraj & Parkhe, 2006). Therefore, a systemic bigger picture for networks and their management is missing.

In order to manage actors and their activities within this dynamic business network setting, managers need to understand the perceptions and interests of the other actors (Valkokari, 2015). Already in 2003, Ford and colleagues proposed a "managing in networks" model built on three interrelated elements: network pictures, networking, and network outcomes (Ford et al., 2003). Network pictures have been defined as business actors' subjective mental representations of their surroundings, and thus as sense-making tools that underlie decision-making in networks (Mattsson, 2002; Ford et al., 2003). The network picturing tool builds on the assumption that through understanding relationships, activities and interactions between network members, the development path of the network can be managed as well as guided by influencing other network actors. Thus, a careful review of one's own position in networks as well as different networking directions offers managers new "theories in use" for how their business networks currently operate or how they may look in the future. In practice, firms are simultaneously acting in various networks in different roles (Figure 1). Furthermore, based on their perceptions of the most relevant network dimensions, companies are constantly making both intentional and subconscious decisions on how to proceed in their business networks and relationships.

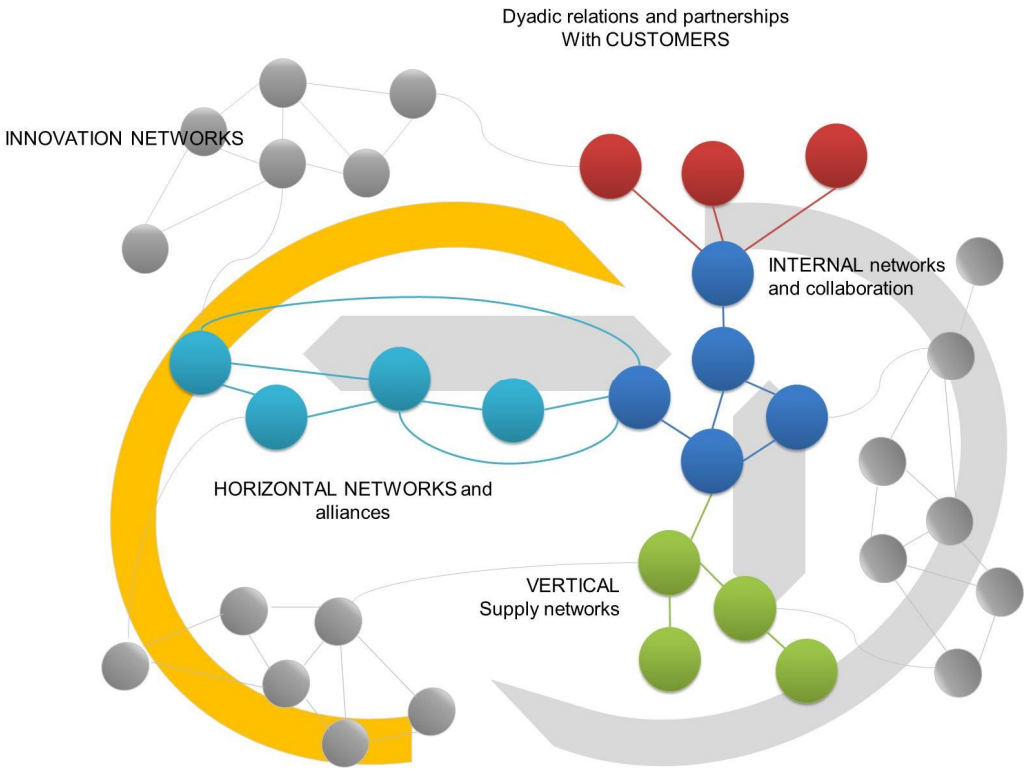

Figure 1. Network picture dimensions.

According to Möller and colleagues (2005), strategic business nets can be classified into three categories based on their value-creation principles: 1) hierarchical and stabilized current business nets, 2) development-oriented business renewal nets, and 3) radical change-seeking emerging business networks. In line with that typology, the network dimension picture (Figure 1) utilized in this study differentiates between vertical, well-defined, and long-term customer–supplier networks (1), horizontal development networks and alliances (2), and innovation networks that cross industrial boundaries (3).

In practice, network management is typically distributed in different operational units within a firm and the focus of network management differs in different dimensions (Table 1). Both the exploration of new ideas for innovation and exploitation of present knowledge in order to develop their offerings require firms to integrate different knowledge sources and network actors into their business development. It is important to notice that besides formal, observable business relationships, there are underlying informal relationships between the actors - and these social networks and interconnections may be an even more efficient way to find new solutions and fill structural holes within networked operations. Table 1 summarizes the main characteristics of these network dimensions.

Table 1. Main dimensions of business networks and their management (modified from Valkokari & Rana, 2016)

Network dimension	Focus	Management	Responsible
Supply networks	Vertical, exploitation of current business	Control through business relationships	Sourcing, R&D, Production
Customer relationships	Vertical, exploitation of current business and growth (new customers)	Business negotiations	Marketing, Sales
Development networks and alliances	Horizontal, both exploitation and exploration (with current partners)	Influencing and agenda building (equality between actors)	R&D, Business development, others?
Innovation networks	Horizontal, exploration of new business (including technologies)	Exploring future opportunities	R&D, Business development

Due to their network position, companies have different opportunities to influence, guide or control other actors, network relationships, and the whole network. Consequently, through collective sense-making, the network actors create a conceptual and empirical clarification of how network pictures are combined to produce managerial actions (Henneberg et al., 2010). These actions then emerge as the behavior of networks and their actors. Furthermore, the network structures are constructed by the involved actors, as they form the views of how the network activities should be delimited and how they relate to each other (Håkansson & Johansson, 1993). Nevertheless, joint sense-making and trust building between network actors are long-lasting processes, while in a current fast-changing business environment, understanding is also needed about network dynamics and networking practices that quickly satisfy emergent market needs and demands (Rigby et al., 2000).

Furthermore, a strategic mindset towards the future in a business environment may differ from planning and adapting to visioning and building the future. Wiltbank and colleagues (2006) managed to identify two questions that reveal a great deal of the underlying mindset of a firm's decision-making and sense-making: (1) Do we believe that it is possible and desirable to be able to predict the future? (2) Do we believe that we can change aspects of the environment or are we controlled by it? In other words, are we able to manage business network dynamics or are we just messing up?

RESEARCH METHODOLOGY

The research methodology used in this study is that of a qualitative case study. The case study method was chosen because it is suitable for situations that include complex and multiple variables and processes (Yin, 2003). The purpose of the research was not to test hypotheses, but rather to understand a complex phenomenon and increase our knowledge of that phenomenon. Therefore, a qualitative and descriptive approach (Eisenhardt, 1989) was chosen.

In total 20 companies participated in the development program focusing on relational business practices. Twelve of them participated in this study; the other eight companies were not available for interview due to scheduling reasons. Empirical research data were gathered mainly from in-depth interviews with key persons in these twelve case companies. In companies where there were more than 2 representatives available, a network picturing workshop was organized. The twelve case companies are quite representative of industrial companies that are actors in multiple networks and are interested in developing the different dimensions of network relationships. A total of 31 persons participated in the workshops or were interviewed during 2015 and 2016 (see Table 1).

Most of the case companies represented the technology industry. The interviewees included, for example, members of the management team (*top management* in the table below) and R&D team leaders (*engineering*). The typical interviewee was a purchasing manager (*supply chain management)* or a key account manager (*sales, customer relations*) that had been active in the network relations development project.

The network picture (figure 1) was shown as a starting point in the interviews and workshops. The participants first discussed the network picture as a whole and then its different dimensions based on their own knowledge and interest, before finally focusing on the dimension related to their own responsibilities. The dimensions that were included in the interview themes were 1) supply network: the suppliers and subcontractors, 2) customers and the possible sales and service network utilized in reaching them, 3) R&D networks: collaboration with different types of companies, i.e. suppliers and customers, in R&D activities 4) innovation networks: horizontal, boundary-crossing industry activities, and 5) internal network, e.g., how R&D, sales and purchasing departments share information and work together. The researchers supported the discussion with questions concerning perceptions of different actors, relationships and development needs in the business networks. The interviewees were encouraged to share experiences and examples of recent developments in the networks.The use of this kind of qualitative method was important for capturing the thinking and practices of the representatives of the case companies (Sparrow, 1999).

Table 2. The interviewees and their roles in the networks.

Case company	**Actor (node) role**	**Representative(s)**	**Role in networks**
Case A	Brand owner, medium-sized	top management, middle management (2)	Supply chain management
Case B	Service provider,	middle management (1)	Sales, customer

	large		relations
Case C	Manufacturer, large	top management (1)	Supply chain management
Case D	Solution provider, large	middle management, experts (6)	Project management, engineering
Case E	Brand owner, large	middle management, experts (4)	New product development, supply chain management
Case F	Service provider, small	middle management (1)	Project management
Case G	Solution provider medium-sized	top management (1)	Customer relations
Case H	Solution provider, large	middle management (1)	Process development
Case I	Solution provider, large	middle management, experts (6)	Project management, engineering
Case J	Brand owner, medium-sized	top management, middle management (3)	Sales, customer relations
Case K	Subcontractor, medium-sized	middle management (2)	Sales, customer relations
Case L	Solution provider large	middle management (3)	Supply chain management

The interviews and workshops took approximately one and a half to two hours and were conducted by both authors, except in case E. In addition to notetaking, interviews were recorded and later transcribed. The qualitative analysis for this paper was carried out according to the main themes relevant to the business network management and dynamic in multiple network contexts. Analysis of the empirical material proceeded by applying the grounded theory approach. Each company was analyzed separately and then compared to others. Open coding was applied to the empirical material, which is "the process of breaking down, examining, comparing, conceptualizing and categorizing data" (Strauss and Corbin, 1990). The coding process created bundles of network perspectives that were later grouped and categorized – constituting the main viewpoints of the data. Based on the coding, the companies were categorized according to their main network management perspectives. The case findings section below first summarizes the typical perspectives on network management, and then highlights examples of network dynamics.

FINDINGS

Both the participant's own efforts to manage the network and examples of the network dynamics experienced were collected from the data. Table 2 presents the findings from our case study, with a summary of network management examples in each company case. The examples of network management efforts especially highlight companies' perspectives on

their ability to manage or change aspects of their networked environment, i.e. in the business networks where they operate. On the other hand, examples of network dynamics explain how companies have perceived changes arising from the actions of other network actors.

Table 3. Summary of network management stories (own efforts and network dynamics)

Case company	Example of own network management efforts	Examples of network dynamics
Case A	Supply network and its linkages drawn and the picture utilized in new supply network building and existing supply network development. Development concentrated on improving transparency and communication	• Customers' demand to use certain suppliers • Customers require more data on comparisons of different supply networks
Case B	Innovation network building: small companies and start-ups supported to standardize certain issues in the ecosystem.	• Partners invited case company to act in an integrator role with large customers in new markets. • Customers have strong preferences which partners should be used
Case C	Development of new logistic system with a solution provider and involving two other (local) logistic service customers to build an ecosystem/customer base that would make the system feasible and viable in the long run.	• The decisions of the development partner to discontinue certain projects affecting a whole ecosystem
Case D	An attempt to strengthen own position (integrator) with partnership and larger solution offering where revenue, not only cost for customers, is the focus.	• Suppliers' customers in other (volume) industry sectors are drivers in their new product and process development • Conflicting needs of end customer and direct customer
Case E	Creation of a supplier development group to secure the supply of certain components (suppliers to compete against each other)	• One group of suppliers is multinational giants that are not interested in customization or development based on case company needs • Lots of different stakeholders in customer network, end users, owners, designers,
Case F	Actively looking for optimal setup of project networks by combining low cost country players and local highest quality players (new network members and new combinations)	• Strong outsourcing trend of big players have made the industry scattered (too small units to be able to evolve as expected)
Case G	An effort to build a new partnership with a company from a different industry sector in order to offer novel services to customer.	• Merger of two big players, the other a competitor and other a client that the case company represents, might make a local business completely obsolete
Case H	Active customer market development; Defining the important stakeholders around the customer and trying to affect and create market for customers	• Network cyclic, turns around several times during the project, reaction (solution): global internal network and overlapping roles in different phases of project/process
Case I	Aiming to create "faith in the future" by regular discussions on current needs with customers and a separate team to innovate	• End customer-manufacturer-solution provider triad, with conflicting preferences on development

	and discuss future needs	• Lots of internal customers, "some functions too far from the customer", difficult to organize such that all the functions have a joint objective
Case J	Customer network development: customer's customers identified and attempts to build new connections over direct customers	• Limited R&D resources driven by regulations not customer needs • Sales representatives represent several brands and focus on those clients whose products that are easy to sell
Case K	Identifying customer's customers' needs and the critical and value-adding characteristics of one's own product and in order to focus resources on value-adding processes.	• Supply network lead by customer, group of suppliers invited to both joint problem solving and joint new development
Case L	Local sales effort (without concern for sales) in order to find new markets and customers	• Customers and HQ of the company may have different opinions on the role of the local company in customer projects (triad)

The focus of the vertical customer–supplier networks and relationships was typically, and by definition, on the supply of present products, as illustrated by the cases (A, D, E, F, I, J, K, L). The joint operations are typically managed within direct business relationships and through formal governance mechanism like agreements. Eight cases stated that in vertical customer–supplier networks there are different settings and thereby different governance mechanisms and development needs. Furthermore, three cases (H,J,K) highlighted the need for understanding the businesses of their customers' own customers and in that way to have a broader view of the business environment rather than simply focusing on customer relationship management. Naturally, customers are important sources of knowledge about needs, requirements, desires, and ideas that are crucial to developing new offerings that meet market demand. Both Case D and I present a triad between the end-customer (brand owner), the system integrator, and the solution provider, where the dilemma is to deal with the needs of all three actors. The search for a "win-win-win" situation requires actors to discuss openly in order to compromise. On the other hand, in addition to direct supply in the form of products or resources, there are a range of types of intangible knowledge, such as reputation, network connections and experiences, which are important to business development. Project delivery networks are a special case in vertical supplier–customer networks, as illustrated by Case F. The challenge in the Case F network was the need to actively seek an optimal setup by combining low-cost country players and the highest quality players locally. In that way, new combinations with new network members are continuously built.

In the customer–supplier collaboration, the vertical relationship often guides the actors to a one-way mindset regarding actions, where the customer is a major player and a supplier is the subject of actions. In such relationships, feedback loops and bi-directional interaction are often missing. Especially for smaller supplier companies, claiming and protecting their rights regarding their relationships with larger customers is typically inconvenient. Thus, Case E highlights that the situation may also be contrary, while some of the suppliers can be significantly larger than a customer company. In such a case, multinational giants may not be interested in customization or development based on customer (Case E) needs.

The horizontal development networks and alliances cover different direct and indirect relationships with other companies, consultants, and regional development agencies. The focus is for instance, on development learning, benchmarking, or joint activities in a limited area like research, marketing or export. Thus, horizontal relationships may act as a counterpoint to the equality between the actors, and thereby merge the needs for vision and mechanisms for decision-making and management of the operations. In Case E, the network-picturing workshop generated an idea to go deeper into sense-making within the R&D network in order to optimize the R&D and innovation network by taking into account the roles of different stakeholders and to also define where they should discuss/share information more.

In innovation networks, important sources of knowledge are universities, research centers, innovation inter-mediators, and funding agencies, which can provide information, technology and finance for the innovation process. Case B has an active role in innovation networks, enhancing technology development in start-ups and SMEs. In such co-operation settings, the similarity between the knowledge bases as well as network positions have a significant influence on the possibilities and willingness to share or transfer knowledge. Case C highlights the need to involve different actors in the joint innovation and business development process. In such a case, network picturing can function as a tool for joint scenario-building, enabling comparisons between the viability of different system constructions. Further, Case H highlights the need for a broader view within vertical supplier–customer networks, i.e. the development approach can be steered from exploitation to exploration, by defining the important stakeholders around the customer and trying to affect and create markets for customers.

On the other hand, Case G illustrates how changes in a business environment can generate threats to the existence of an actor, i.e. a merger of two big players, the other a competitor and the other the client that the case company represents, might make a whole business unit obsolete. In such cases, network picturing may help to foresee threats, and in that way to prepare for these changes.

To sum up, the above cases and the workshop discussions as a whole demonstrated that for practitioners, the vertical supplier–customer networks are the most familiar dimension within networks. Moreover, there were typically clearly defined management practices for the supplier–customer networks, while in the case of development or innovation networks, the joint work was often organized in projects guided by external actors. Network dynamics and timing pose challenges for management, i.e. network actors can have different perceptions of how the network should work as well as having different reasons for participating. For instance, one of the network actors might consider their objective to be an exploration of new knowledge and future business opportunities, while others are operating within the present business model and so expect that the benefits will be realized faster.

The role and the network position of the firm are critical factors in the selection of suitable methods for network development and management. The choices and decisions of network actors can be perceived only when managers have a clear understanding of their development agenda and strategic targets. Thus, in a business environment, managers' strategic mindset

towards the future has a strong influence on their perception of the manageability of networks and the related actions. In other words, the companies that focus on planning and adapting also more typically concentrate on the management of present supplier and customer relationships, whereas companies aiming to envision future changes also have an active approach to innovation networks.

CONCLUSIONS

The managerial challenge is to guide development within dynamic business networks. More information is needed on how actors' network strategies actually come into being and how they can be affected through interaction. This study deepens our understanding of how utilizing network picturing as a sense-making tool can be used to create an understanding of the dynamics of multiple network settings.

Many businesses are of a complex nature, and network picturing gives a possibility to see the multiplicity of dimensions and the network beyond the most obvious and traditionally closest actors. In the case study companies, network picturing resulted in the identification of new (to them) relevant network actors and activities, development needs and trajectories, as well as an elaboration of the network dynamics. Our research suggests that different network picturing tools can be utilized as a means for transformation in companies seeking growth and new opportunities. The study also suggested that companies need different partners and network models for different (business) activities, even though sense-making between these network settings was typically quite limited in the case companies. Therefore, there is a constant need to build and re-build managerial understanding of the different dimensions of business networks.

Often, companies anchor themselves to a single vision of their customer needs and network structures, which may preclude considering the viewpoints of other network actors. Network picturing gives a possibility to discover structural holes and missing links between the actors and network dimensions, where knowledge creation and transfer is needed. The managers who understand the different forms of inter-organizational relationships are also able to manage their dynamics and consequential uncertainty better, while they are more aware of the choices and decisions of others and their influence on the game as a whole. Managing in a dynamic network is a continuous process with intended and unintended results. While it sometimes looks like messing up, there are moments where the results of management efforts appear clearer.

As with any research effort, this one also has its limitations, some of which offer possible avenues for future research. First, due to the multiple-case approach and networks being the main unit of analysis, it was not possible to give deeper consideration to strategic positioning and the management process itself within one company. Still, the case findings demonstrate that the role of managers in the orchestration of networks is challenging. Therefore, one important subject for future studies would be a longitudinal study of network orchestration through the exploration of strategic choices of all the actors involved. This kind of research setting could provide new insight into managerial sense-making of inter-organisational relationships and provide understanding about "networks-as-practice", and thereby

complement the view of network dynamics as a constant and joint change process between the network actors. Secondly, all of the case companies operated in the same industry sector, i.e. the technology industry. Therefore, industrial and cultural differences regarding networking and management practices were not in focus. Further research on other kinds of contexts could either validate the study results or provide interesting complementing views on the topic of network dynamics.

Within the context of business networks, it is also important to integrate intangible and tangible value flows between the network actors. Therefore, social network analysis (SNA) could be used to understand knowledge flows and the network patterns from the social network connections of managers' expert communities, while value network analysis (VNA) could be used to integrate both tangible and intangible value flows.

REFERENCES

Dhanaraj, C. and Parkhe, A. (2006), "Orchestrating Innovation Networks", *The Academy of Management Review*, Vol. 31, No. 3, pp. 659-669.

Eisenhardt, K.M. (1989), "Building Theories from Case Study Research", *The Academy of Management Review*, Vol.14, Iss. 4, pp. 532–550.

Ford, D., Gadde, L.-E., Håkansson, H. and Snehota, I. (2003), *Managing business relationships*, John Wiley & Sons, Chichester

Halinen, A., Medlin, C.J. and Törnroos, J.-Å. (2012), "Time and process in business network research", *Industrial Marketing Management*, Vol. 41 (2), pp. 215-223.

Halinen, A. and Törnroos, J.-Å. (2005), "Using case methods in the study of contemporary business networks", *Journal of Business Research*, Vol. 58, issue. 9, pp. 1285–1297.

Henneberg, S. Naudé, P. and Mouzas, S. (2010), "Sense-making and management in business networks — Some observations, considerations, and a research agenda", *Industrial Marketing Management*, Vol 39, Iss. 3, pp. 355–360.

Håkansson, H. and Ford, D. (2002) "How Should Companies Interact in Business Networks?", *Journal of Business Research*, Vol. 55, Iss. 2, pp. 133-139.

Håkansson, H., and Johanson, J. (1993), "Network as a Governance Structure", In Grabher, G. (ed.), *The Embedded Firm. The Socio-Economics of Industrial Networks*. Routledge, London.

Håkansson, H. and Snehota, I. (1995), Developing relationships in business networks, Routledge, London.

Järvensivu, T. and Moller, K. (2009), "Metatheory of network management: A contingency perspective", *Industrial Marketing Management*, Vol. 38, pp. 654–661.

Kjellberg, H. and Helgesson, C.-F. (2007). The mode of exchange and shaping in markets: Distributor influence in the Swedish post-war industry, *Industrial Marketing Management*, Vol. 36, pp. 861–878.

Lamming, R. (1996), "Squaring lean supply with supply chain management", *International Journal of Operations & Production Management*, Vol. 16 Iss: 2, pp.183 – 196.

Mattsson, L.-G. (2002), “Dynamics of markets: How ‘actor–network theory’ and ‘markets-as-networks’ can learn from each other”, Paper presented at the Nordic Workshop on Interorganizational Studies, August 2002 Kolding.

Möller, K., Rajala, A. and Svahn, S. (2005), ”Strategic business nets - their type and management”, *Journal of Business Research*, Vol. 58 , issue 9, pp. 1274–1284.

Ramos, C. and Ford, I.D. (2010), “Network pictures as a research device: Developing a tool to capture actors' perceptions in organizational networks”, *Industrial Marketing Management*, Vol.40, Iss. 3, pp. 447–464.

Rampersad, G., Quester,P. and Troshani, I. (2010), "Examining network factors: commitment, trust, coordination and harmony", *Journal of Business & Industrial Marketing*, Vol. 25 Iss: 7, pp.487 – 500.

Rigby, C., Day, M., Forrester, P., and Burnett, J. (2000), “Agile Supply: Rethinking Systems Thinking, Systems Practice”, *International Journal of Agile Management Systems*, Vol. 2, Issue 3, pp. 178-186.

Ritter, T., Wilkinson, I. and Johnston, W. (2004), “Managing in Complex Business Networks”, *Industrial Marketing Management*, Vol. 33, issue 3, pp. 175-183.

Strauss A.L. and Corbin, J. (1990), “Basics of qualitative research: grounded theory procedures and techniques”, SAGE Publications.

Valkokari, K. (2015), “Describing network dynamics in three different business nets”, *Scandinavian Journal of Management*, Vol. 31, 2, ss. 219-231.

Valkokari and Rana (2016), “Towards sustainability governance in value networks”, in: Liyanage and Uusitalo (Eds.) Value networks in manufacturing: sustainability and performance excellence, Springer (in press).

Wiltbank, R., Dew, N., Read, S. and Sarasvathy, S.D. (2006), “What to do next? The case for non-predictive strategy”, Issue *Strategic Management Journal*, Vol. 27, Issue 10, pp. 981–998.

Yin, R.K. (2003), *Case Study Research.* (Third Edition) Sage Publications.