Network Competence in the Value Chain: Evidence from Finnish SMEs

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*Lasse Torkkeli**
*Olli Kuivalainen***
*Sami Saarenketo****

**Lappeenranta University of Technology, School Of Business and Management, P.O.BOX 20, FI-53851 Lappeenranta. e-mail: lasse.torkkeli@lut.fi, tel. +358403591740 (Corresponding author)*

***Lappeenranta University of Technology, School Of Business and Management, P.O.BOX 20, FI-53851 Lappeenranta. e-mail: olli.kuivalainen@lut.fi tel. +358403587020*

****Lappeenranta University of Technology, School Of Business and Management, P.O.BOX 20, FI-53851 Lappeenranta. e-mail: sami.saarenketo@lut.fi, tel. +35850308 6181*

Abstract

Network competence has been defined as the ability of companies to develop and manage their business network relationships, with extant research linking it to increased innovation and international performance, and to technological interweavement of companies. However, a holistic strategic view into its relevance has been lacking, and neither the impact of possessing network competence on network development within the value chain, nor its relevance in the context of small- and medium-sized enterprises (SMEs) has received much attention.

This study aims to respond to these omissions, by examining how the different types of network competence, relationship-specific and cross-relational types, influence the number and type of relationships companies develop in their value chain and the importance that the company places upon these types of relationships. In doing so, we apply an empirical sample of 263 Finnish SMEs covering five industry sectors, conducting regression modeling to test the hypotheses.

The results indicate that network competence is more relevant for SMEs when developing relationships downstream, rather than in upstream of value chain. Similarly, higher levels of network competence in the companies determine the more strongly the importance that they place on developing downstream, rather than upstream relationships. Notably, it is the relationship-specific, rather than cross-relational network competence that is linked to the amount and importance of downstream relationships. The results contribute to the understanding of networking capabilities, by highlighting their relevance in value chain activities of companies, and thus further clarify the role of dynamic capabilities in organizational strategy, in particular in the networking strategy of SMEs.

Keywords: Network Competence, Business Networking, Value Chain, Dynamic Capabilities, Performance of SMEs

INTRODUCTION

The IMP group has traditionally examined actors - i.e., companies, nodes - the linkages between those companies, and networks - sets of inter-connected nodes (Håkansson, 1982; Anderson et al., 1994; Håkansson & Snehota, 1995). This view is based on the assumption that all companies are embedded in networks (Håkansson & Snehota, 1989; 2006; Thorelli, 1986), and bonds in a relationship combine to form a "wider web of actors" (Håkansson & Snehota, 1995, p.33) that takes the form of a business network.

Network competence is the ability of companies to develop and manage relations with key partners, such as suppliers, customers and other organizations, and to deal effectively with the interactions among these relations (Gemünden et al., 1996; Ritter, 1999; Ritter et al., 2002). The construct by Ritter et al. (2002) measures the network competence of companies in relation to their technical partners, and the study finds that the extent of network competence is positively linked to technological interweavement and innovation performance. Other studies (Chiu, 2008; Ritter & Gemünden, 2003; 2004) have found positive linkages between network competence and innovation performance. These results imply that network competence is beneficial for companies in the upstream of the value chain, e.g., in network relationships concentrated on R&D or collaboration in product development.

However, these extant studies have left two areas mostly unexplored. First of these is the question on whether network competence is also relevant for companies that mostly engage in relationships downstream in their value chain (e.g., with distributors, re-sellers and other agents performing marketing and sales). We do not yet know whether network competence is relevant to network relationship development independent beyond those relationships that are located in the upstream of the value chain, as examined by the extant literature. Similarly, the size of the company should be accounted for, as smaller companies engaged in network relationships tend to face distinct challenges in many areas, e.g., for safeguarding their dynamic capabilities (Sawers et al., 2008) and proprietary knowledge (Blomqvist et al., 2008). Even more importantly, those companies stand to gain particularly much from their business networks, as the network allows them the access to resources they need in order to innovate (Hadjimanolis, 1999), to enhance sustainability (Jämsä et al., 2011), and to internationalize (Coviello & Munro, 1997; Ojala, 2009).

Therefore, the aim of this study is to respond to these gaps, by investigating how the extent of network competence possessed by small- and medium-sized enterprises (SMEs) determines where in the value chain their network relationships develop and whether network competence allows them to develop the kind of relationships they value. This can be seen of uttermost importance for the competitiveness of the company. The rest of this paper is constructed as follows: we continue with a review of the literature on the topic, deriving the hypotheses to be tested with the empirical data. Following that, we describe the research methods, with data collection and measure development, and illustrate the results. Finally, we conclude by discussing their implications, further research avenues and the limitations of the present study.

NETWORK COMPETENCE AS CONCEPT

Mutual interaction between the parties in the relationship is determined through the parties involved, the elements and processes through which the interaction takes place, the atmosphere between the participants, and the underlying environment (Håkansson, 1982). Indeed, the dyadic relationships that a given company develops with other companies tend to turn into larger, connected networks of business relationships (Anderson et al., 1994; Turnbull et al., 1996). This suggests that business networks comprise self-organizing systems, built on dyadic inter-organizational relationships (Ritter et al., 2004).

Scholars have disagreed over whether such networks can be “managed” at all, or whether company are merely able to cope with, “manage in” networks (e.g., Ford et al., 2002; Wilkinson & Young, 2002; Ford & Håkansson, 2006). However, building on the four levels of network management (Möller & Halinen, 1999), Ritter, Wilkinson and Johnston (2002) argued that company differ in their abilities to develop and maintain business relationships in a network, with Ritter and Gemünden (2003) noting that network competence facilitates network management, as company with higher levels of network competence are able to more intensely involve other company in the network to their own operations. Therefore, that ability - network competence – determines the extent of their ability to manage the business network they are embedded in (Ritter et al., 2002).

The organizational ability to develop and maintain these relationships has been argued to constitute a dynamic capability (Teece & Pisano, 1994; Teece et al., 1997) or a core competence (Prahalad & Hamel, 1990) of an organization, giving rise to conceptualizations of “network competence” (Ritter et al., 2002), “network capability (Walter et al., 2006), “networking capability” (Mitrega et al., 2012) and "alliance portfolio capability” (Hoffmann, 2007), among others. These types of network-related capabilities are crucial in developing other organizational capabilities (Vesalainen and Hakala, 2014). We further note that the concepts of “capability” and “competence” have often been used interchangeably (Ritter, 2006; Zerbini et al., 2007), having been “used to refer to the same phenomenon” (Äyväri & Möller, 2008, 2). Correspondingly, in line with Ritter et al. (2002), we refer to such a capability in this study as “network competence”.

Ritter et al. (2002) define network competence to consist of the degree of ability in task execution activities of the management and from the degree of qualifications that the people involved in the network relationships have. Therefore, network competence describes the ability of the company to utilize its network relationships in order to achieve outcomes consistent with organizational strategic goals. The task execution activities constitute a set of organizational routines, which Becker (2004) has referred to as cognitive regularities expressed in the rules and standard operating procedures of an organization. As the essential routines tend to operate on the organizational rather than at the individual level (Dosi et al., 2000), we suggest that the task execution ability forms a strategic organizational competence in itself. Correspondingly, in this study we are examining the task execution abilities of organizations with SMEs as the units of analysis, rather than individual employee qualifications.

The task execution activities are further divided into relationship-specific and cross-relational types (Ritter, 1999; Ritter et al., 2002). The former refers to the competence of the company to

manage individual business relationships within the network, and in that role highlights competence in dyadic business relationships. The relationship-specific competence includes the activities relating to relationship initiation and coordination, and the extent to which confidential and general information is being shared between the relationship organizations. From the point of view of the focal company, they describe the ability to maximize the outcome of each individual business relationship to the benefit of the company; the activeness with which the company seeks new potential network partners; to what extent it is able to facilitate information sharing between the partners; and the extent to which each business relationship is coordinated, e.g., via internal meetings within the company (Ritter, 1999; Ritter et al., 2002, 2004; Ritter & Gemünden, 2003, 2004). In practice this would mean that an organization with a high level of relationship-specific network competence is active and able to build trust in each of its network relationships.

Correspondingly, the cross-relational dimension of network competence consists of those activities related to developing the network and trying to manage its outcomes so as to benefit the company and its strategic goals. The corresponding task execution types relate to “planning”, “staffing”, “controlling” and “organizing” (see Ritter et al., 2002). The extent of competence in these activities results in the goals of organizations within the network being aligned, and in all the relationships within the network involve being staffed with employees who are capable of monitoring them (Ritter, 1999; Ritter et al., 2002, 2004; Ritter & Gemünden, 2003, 2004). Correspondingly, a company with a high level cross-relational network competence is one that conducts regular managerial reviews of all its network relationships, carefully assessing the merits of each relationship; one that hosts regular meetings with the people involved in their business relationships; one that has assigned responsibility for each network relationship to a specific employee; and one that conducts regular managerial reviews of how the company benefits from each of its network relationships.

NETWORK COMPETENCE AND THE VALUE CHAIN

Holm et al. (1996) have suggested that a set of connected business relationships along the value chain can be conceived as a business network. This implies that the business network is not necessarily restricted to certain types of partnerships (e.g., joint R&D development), but rather than it can encompass more of the overall value chain of a company. Whether the business network can be managed has been debated, but value chains can be coordinated and governed in different ways (e.g. Gereffi et al., 2005; Lew et al., 2013). Indeed, value chain management is a core theme in business research (Lindgreen & Wynstra, 2005). However, as Evans and Berman (2001) have noted, much of the earlier research has concentrated on the value chain itself, rather than assessing the business-to-business aspects of the chain.

Gereffi’s conceptualization includes five governance types, i.e. market, modular, relational, captive and hierarchical types (Gereffi et al., 2005). Within the SMEs especially one can note the resource scarcity and the need for external resources with which company are able to tap into larger resource pool. Here, as discussed above, the relational approach, and eventually the network competence is beneficial.

The extant empirical studies on network competence, while not discussing value chain explicitly, have assessed its linkages towards the upstream of value chains. Most notably, Ritter et al. (2002) find positive correlation between network competence and technological interweavement. Chiu (2008) establishes a positive relationship between network competence and innovation performance, and several accompanying studies (Ritter & Gemünden, 2003; 2004) postulate similar notions. The original network competence construct, the NetComp scale (Ritter et al., 2002) also explicitly discusses network competence in light of being able to develop and manage business network relationship with "technical" partners.

As both inter-organizational collaboration with the aim of increasing innovation, as well as partnerships geared toward "technical" collaboration tend to describe activities related to R&D, we surmise from this that extant research implicitly assumes that network competence is more relevant for companies towards the upstream of the value chain. These notions suggest the assumption that both facets of the network competence would lead to a substantial volume of coordinated and rigorous networking activities which would lead to higher number of partnerships towards the upstream of the value chain. Consequently, possessing higher levels of network competence should enable companies to extract more value from those partnerships, thus highlighting their importance for the company:

- **H1: The higher the level of network competence in an SME, the more upstream partnerships it has.**
- **H2: The higher the level of network competence in an SME, the more importance it places on its upstream partnerships.**

As mentioned above, the extant research on network competence has concentrated on the types of partnerships located towards the upstream of a company's value chain. However, in the SME context in particular, we could expect better network competence to result in more beneficial outcomes towards the downstream of the value chain as well. For one, SMEs tend to have different roles in supply chains, in that they can often be suppliers, producers, distributors and customers (Hong & Jeong, 2006). This implies that the benefits they gain from business networks may by less dependent on where their network partners are placed across the value chain continuum. In addition, their relatively small size sets restraints to their growth and internationalization (Knight & Cavusgil, 2004), restraints that they can overcome by gaining access to network resources of various types.

One critical type of resource SMEs tend to lack is marketing resources. Therefore, network partners towards the downstream of the value chain, e.g., independent distributors that can engage in marketing of the products and services of the SME can provide crucial help in providing access to such resources. Czakon (2009) has noted that for SMEs, power asymmetry can lie behind formation of relationships, but flexibility is needed for their further development. We postulate that network competence may provide this flexibility for smaller companies, implying that the type of partnership (e.g., technical or distributor-type) is less important for them than the limitations set by their organizational characteristics. Thus, by gaining the access to the marketing resources available through partnering downstream, network competence should help SMEs in both forming such partnerships, as well as valuing them more through the access to such resources:

- **H3: The higher the level of network competence in an SME, the more downstream partnerships it has.**
- **H4: The higher the level of network competence in an SME, the more importance it places on its downstream partnerships.**

METHODOLOGY

Data Collection

The empirical data used to test the hypotheses were collected between February and July 2008 via an online survey of Finnish SMEs across five industry sectors. The sample selection process proceeded as follows: First, the Amadeus online database was searched for Finnish company employing between 10-500 employees, as suggested by the definition of SMEs (OECD, 2008). In order to enhance the potential generalizability of the research results across different industrial contexts, a cross-sectional sample across distinct industries was sought. The aim was to acquire a sample including company from more traditional manufacturing industries, as well as from increasingly service-oriented ones. As a result, the search was restricted to SMEs representing five industry sectors: metal, food and furniture industries, software industry, and knowledge-intensive business services (KIBS).

In total, 1147 SMEs derived from the database search and contacted first by phone. The research team first contacted the person in the company who they had determined to be likely the most knowledgeable on the issues related to the strategy of the organization, including capability development and networking. The most relevant person in the company to respond to the questionnaire was determined in discussion during the initial call, and was in most cases the managing director, owner of marketing manager of the company. Those who had agreed to participate were then sent a link to the online questionnaire, and those who had not responded within a month were sent four additional reminder e-mails one week apart.

In order to ensure linguistic accuracy, the survey was back-translated with the help of a professional language editor, with the entire survey being first developed in English, followed by its translation to Finnish and back to English. Moreover, as Baumgartner and Steenkamp (2001) have suggested that acquiescence and disacquiescence response styles of managers may result in patterns of ‘yea-saying’ and ‘nay-saying’, some of the items include in the survey were negatively worded. Finally, the entire survey was piloted with three managing directors from comparable company.

A paper version of the survey was offered to be sent to the potential respondents as an alternative to the online one, but this offer was not taken up by any of the company. In total, 298 responses were received during the data collection period, resulting in a 26% response rate (from 31% in furniture industry company, to 16% for those in metal industry). The responses included both strictly domestically operating company (179) and those that had international operations (119), comprising a 60%-40% split between the two types of company. The average age of the

respondent company was 18 years, and their average turnover 5.7 million €. The averages in the latter also varied considerably between industry sectors: while KIBS SMEs had an average turnover of 3.3 million €, the respondents in the food industry reached up to 6.2 million € turnover in average. The respondent SMEs employed on average 40 people, ranging from 43 in the food industry SMEs to 33 in those from the furniture industry sector.

The respondents were of three alternative types: the survey inquired upon the respondent's title, by offering a choice between "managing director", "owner" or "other key person", and in the case of the last, asked the respondent to clarify their title. Most of the responses were from managing directors (191) or owners (59), indicating sufficient knowledge for responding to the questions related to both daily operations as well as to overall company strategy. In order to ensure that the title of the respondent would not influence the empirical results, we conducted one-way ANOVA tests on the used variables. As none of the measures indicated statistically significant differences between the respondents ($p > 0.05$), we considered that the position of the respondent would not significantly alter any of the empirical results. In addition, we tested for potential non-response bias, following the recommendations of Armstrong and Overton (1977), and no significant differences between early and late respondents were found. As 263 of the 298 total respondents had answered both to the inquiries on network competence, as well as to those on the type of partnerships, this final sample of 263 Finnish SMEs thus comprised the final effective sample size for the purposes of testing the hypotheses in this study.

Measure Development

Statements related to network competence were adapted from Ritter et al. (2002), who suggested shortening the original scale. Thus, our set of items included 26 items in all, with the selection being based on our assessment of the potential fit of the individual network competence items to the Finnish SME context. The resulting scale is identical to that of Torkkeli et al. (2012), consisting of 15 items (see appendix 1), and encompassing relationship-specific and cross-relational dimensions of network competence. The means and the factor analysis indicated construct equivalence (see Douglas & Nijssen, 2003), as the network construct had the same latent task execution variables and structure in both Ritter et al. (2002) and Torkkeli et al. (2012). Therefore, we found sufficient equivalence for the network competence scale even through an 'etic' mindset. Moreover, while noncontingent responding could in some instances be an issue (Baumgartner & Steenkamp, 2001), in this study the items on network competence were measured through a 7-point Likert scale placed in the middle section of the survey next to other similar Likert-scale items, with their means and standard deviations sufficiently similar to each other, we considered potential noncontingent responding to not be an issue in the present study.

The number of upstream and downstream partnerships was measured by asking the respondents for the number of different types of partnerships that they had: domestic and foreign retailers/representatives (downstream) and the number of domestic and foreign subcontractors/suppliers and product development partners (upstream). The importance of each of these types was measured through a 7-point Likert-scale items, by asking for the extent to which the respondent agreed or disagreed that the type of partnership was important for the success of the company. In conducting the analysis, we also controlled for company size (as

measured by the number of employees) and industry (with service-oriented, knowledge-intensive industry company, i.e. software and KIBS SMEs, being coded as "1", and the more traditional manufacturing company (metal, food, and furniture company) being coded as "0". The descriptives and intercorrelations between the variables used in the analysis are illustrated in table 1.

(Take in table 1)

RESULTS

First, we conducted regression modelling analysis for testing H1 and H2 – the influence of network competence on the amount and importance of upstream business relationships for the companies. The results, as seen in tables 2 and 3, do not provide support for either of these hypotheses: In table 2, only the first step of the model including the control variables was statistically significant ($F=3.56$, $p<0.05$), while the second model (model 2, table 2) that included the network competence items was non-significant ($F=2.34$, $p>0.05$). Moreover, none of the standardized coefficients were statistically significant at the 5% risk level.

(Take in table 2)

For H2, the results were similar. As seen in table 3, neither of the two models (the controls-only model 1 and the one including the network competence items, model 2) was statistically significant at the 5% risk level ($F=0.44$ and $F=2.16$, respectively). Furthermore, again neither of the network competence coefficients indicated statistical significance. Therefore, we surmise that the network competence of SMEs was not linked to the amount or importance of business relationships in the upstream of their value chain – a result contrary to previous studies, e.g. Ritter et al., 2002.

(Take in table 3)

Consequently, we tested for H3 and H4 with similar means. The results, seen in table 4, indicate partial support for H3: the model (table 4, model 2) was statistically highly significant ($F=7.27$, $p<0.01$) and the relationship-specific network competence coefficient was both positive and significant (0.43, $p<0.05$). While we note that the industry control variable was also significant in both models (-0.35, $p<0.01$ and -0.38, $p<0.01$, respectively). The results indicate that about 16% of the variance in downstream partnerships is explained by relationship-specific network competence. However, interestingly, cross-relational network competence was not found to influence the amount of downstream relationships (-0.01, $p>0.05$).

(Take in table 4)

Finally, we found similar results when examining the impact of network competence on the importance of downstream relationships for the companies. As seen in table 1, the controls-only model (model 1) was non-significant, as were both of the control variables. The explanatory power, then, was captured in model 2 by relationship-specific network competence (0.38,

$p<0.05$). While we note that this explanatory power was not high (Adjusted R square = 0.07), the model was statistically significant ($F=2.54$, $p<0.05$) and thus, provided partial support for H4: relationship-specific network competence was found to be positively linked to the importance with which the companies placed on their downstream relationships.

(Take in table 5)

DISCUSSION AND CONCLUSIONS

The aim of this study was to investigate how the network competence of SMEs is related to the amount and importance of their business network relationships according to their place in the value chain. In doing so, we aimed to respond to several gaps in extant literature, most notably to the lack of research investigating how network-related dynamic capabilities such as network competence influence both deep inter-organizational collaboration in the upstream, e.g., joint R&D development in technical partnerships and innovation (Ritter et al., 2002; Chiu, 2008) and also downstream, e.g. with independent retailers and re-sellers. In addition, we examined the SME context in particular, since their networking is often considered borne from distinct motivations and challenges, and thus the importance of network competence across the value chain could be expected to be distinct and thus, to provide new insights into capability development and to network scholars.

In sum, we found that network competence is for SMEs most relevant for their downstream, rather than upstream partnerships. This result is contrary to extant studies (e.g., Ritter et al., 2002), who linked network competence to the context of technical partners and innovation – a distinctly upstream context. However, ours was a context of SMEs, which by nature tend to lack resources across the value chain. Thus, our assumption that network competence could also have implications in their downstream partnerships turned out to be correct. However, it was the competence in dyadic network relationships, rather than the competence in managing the set of network relationships at an overlying level, that turned out to be significant for both the number of, as well as the importance placed upon those partnerships by the company.

Partially our result can be explained from contextual perspective. Many Finnish SMEs in the sample are based on technical innovation and in their current stage of development there is a practical need for achieving sales. In this endeavor marketing and sales partners tend to be of importance. It may also be that the lack of human resources in SMEs mean that they do not have the capacity to construe the network level, or that they lack the network position to exert the necessary influence on a set of network relationships beyond being able to manage individual partnerships: For instance, they may not be able to apply network competence in the context of strategic nets (Möller & Svahn, 2003; Möller & Rajala, 2007; Möller et al., 2007). We suggest that these results are in need of further elaboration beyond the present exploratory study. Still, we suggest that, in light of our results in this paper, the SME context may provide a fruitful research context for further investigation on the role of networking capabilities in business networking, particularly when accounting for structural aspects of the network, such as where in the value chain the network partners of the company are majorly located.

We also note several limitations in the present study. First, the cross-sectional nature of the empirical data presents a limitation for establishing strong causal effects between the development of network competence and the development of business relationships across the value chain. The question on whether there is a feedback loop, or in fact whether the network competence of SMEs is developed through experience with partners in the upstream of the value chain, would require applying different research methods and optimally a longitudinal follow-up study. Moreover, business networking has been found to be different across cultural contexts (Luo, 2003; Möller & Svahn, 2004), and thus our single-country context could be argued to represent a limitation. Further studies could therefore seek to establish the generalizability of these results to national contexts where the importance of traditional culture on business culture is notable, e.g., in Russia and China.

REFERENCES

Anderson, J.C., & Narus, J.A. (1991). Partnering as a Focused Market Strategy. California Management Review, 33, 95-113.

Anderson, J.C., Håkansson, H. & Johanson J. (1994). Dyadic business relationships within a business network context. Journal of Marketing, 58 (4), 1-15.

Armstrong, J. Scott, and Terry S. Overton (1977), Estimating nonresponse bias in mail surveys. Journal of Marketing Research, 14 (3), 396-402.

Baumgartner, H., & Steenkamp, J-B.E.M. (2001). Response Styles in Marketing Research: A Cross-National Investigation. Journal of Marketing Research, 38, 143-156.

Becker, M.C. (2004), 'Organizational routines: a review of the literature', Industrial and Corporate Change, 13 (4), 643–78.

Blomqvist, K., Hurmelinna-Laukkanen, P., Nummela, N., & Saarenketo, S. (2008). The role of trust and contracts in the internationalization of technology-intensive Born Globals. Journal of Engineering and Technology Management, 25 (1), 123-135.

Chiu, Y. T. H. (2008). How network competence and network location influence innovation performance. Journal of Business & Industrial Marketing, 24 (1), 46-55.

Coviello, N.E., & Munro, H.J. (1997). Network relationships and the internationalization process of small software firms. International Business Review, 6 (4), 361-386.

Czakon, W. (2009). Power asymmetries, flexibility and the propensity to coopete: an empirical investigation of SMEs' relationships with franchisors. International Journal of Entrepreneurship and Small Business, 8 (1), 44-60.

Dosi, G., R. Nelson & S. Winter (eds) (2000), The Nature and Dynamics of Organizational Capabilities, New York: Oxford University Press.

Douglas, S.P., & Nijssen, E.J. (2003). On the use of "borrowed" scales in cross-national research: A cautionary note. International Marketing Review, 20 (6), 621-642.

Evans, J. R., & Berman, B. (2001). Conceptualizing and operationalizing the business-to-business value chain. Industrial Marketing Management, 30 (2), 135-148.

Ford, D., Gadde, L. E., Håkansson, H., & Snehota, I. (2002, December). Managing networks. In 18th IMP Conference, Perth, Australia (11-13).

Gemünden, H.G., Ritter, T., & Heydebreck, P. (1996). Network configuration and innovation success: An empirical analysis in German high-tech industries, International Journal of Research in Marketing, 13, 449–462.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. Review of International Political Economy, 12 (1), 78-104.

Hadjimanolis, A. (1999). Barriers to innovation for SMEs in a small less developed country (Cyprus). Technovation, 19 (9), 561-570.

Holm, D. B., Eriksson, K., & Johanson, J. (1996). Business networks and cooperation in international business relationships. Journal of International Business Studies, 27 (5), 1033-1053.

Hong, P., & Jeong, J. (2006). Supply chain management practices of SMEs: from a business growth perspective. Journal of Enterprise Information Management, 19 (3), 292-302.

Håkansson, H. (ed.). (1982). International marketing and purchasing of industrial goods. New York : Wiley.

Håkansson, H., & Snehota, I. (1989). No Business is an Island: The Network Concept of Business Strategy. Scandinavian Journal of Management, 5(3), 187-200.

Håkansson, H., & Snehota, I. (eds). (1995). Developing Relationships in Business Networks. Routledge:London.
Håkansson, H., & Snehota, I. (2006). No business is an island: The network concept of business strategy. Scandinavian Journal of Management, 22 (3), 256-270.
Hoffmann, W.H. (2007). Strategies for Managing a Portfolio of Alliances. Strategic Management Journal, 28(8), 827-856.
Jämsä, P., Tähtinen, J., Ryan, A., & Pallari, M. (2011). Sustainable SMEs network utilization: the case of food enterprises. Journal of Small Business and Enterprise Development, 18 (1), 141-156.
Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. Journal of International Business Studies, 35 (2), 124-141.
Lew, Y. K., Sinkovics, R. R., & Kuivalainen, O. (2013). Upstream internationalization process: Roles of social capital in creating exploratory capability and market performance. International Business Review, 22 (6), 1101-1120.
Lindgreen, A., & Wynstra, F. (2005). Value in business markets: What do we know? Where are we going?. Industrial Marketing Management, 34 (7), 732-748.
Luo, Y. (2003). Industrial dynamics and managerial networking in an emerging market: the case of China. Strategic Management Journal, 24, 1315–1327.
Mitrega, M., Forkmann, S., Ramos, C. & Henneberg, S.C. (2012), Networking capability in business relationships: Concept and scale development, Industrial Marketing Management, 41, 739–751.
Möller, K., & Rajala, A. (2007). Rise of strategic nets—New modes of value creation. Industrial Marketing Management, 36 (7), 895-908.
Möller, K., Rajala, A., & Svahn, S. (2005). Strategic business nets—their type and management. Journal of Business research, 58(9), 1274-1284.
Möller, K., & Svahn, S. (2003). Managing strategic nets a capability perspective. Marketing Theory, 3(2), 209-234.
Möller, K. & Halinen, A. (1999). Business relationships and networks: Managerial challenge of network era. Industrial Marketing Management, 28, 413-427.
OECD. (2008). Definition of small and medium sized enterprises (SMEs).
Ojala, A. (2009). Internationalization of knowledge-intensive SMEs: The role of network relationships in the entry to a psychically distant market. International Business Review, 18 (1), 50-59.
Prahalad, C.K., & Hamel, G. (1990). The core competence of the organization. Harvard Business Review 68(May–June), 79–91.
Ritter, T. (1999). The Networking Company: Antecedents or Coping with Relationships and Networks Effectively. Industrial Marketing Management, 28 (5), 467-479.
Ritter, T. (2006). Communicating Firm Competencies: Marketing as Different Levels of Translation. Industrial Marketing Management, 35, 1032-1036.
Ritter, T., & Gemünden, H.G. (2003), Network competence: its impact on innovation success and its antecedents. Journal of Business Research, 56(9), 745-755.
Ritter,T., & Gemünden, H.G. (2004). The impact of a company's business strategy on its technological competence, network competence and innovation success. Journal of Business Research, 57 (5), 548–556.
Ritter, T., Wilkinson, I.F., & Johnston, W.J. (2002). Measuring Network Competence: Some International Evidence. Journal of Business & Industrial Marketing. 17 (2/3), 119-138.
Ritter, T., Wilkinson, I.F., & Johnston, W.J. (2004). Managing in Complex Business Networks. Industrial Marketing Management, 33, 175-183.

Sawers, J. L., Pretorius, M. W., & Oerlemans, L. A. (2008). Safeguarding SMEs dynamic capabilities in technology innovative SME-large company partnerships in South Africa. Technovation, 28 (4), 171-182.
Teece, D., & Pisano, G. (1994). The dynamic capabilities of firms: an introduction. Industrial and Corporate Change, 3 (3), 537-556.
Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. Strategic Management Journal, 18 (7), 509-533.
Thorelli, H. B. (1986). Networks: between markets and hierarchies. Strategic Management Journal, 7 (1), 37-51.
Torkkeli, L., Puumalainen, K., Saarenketo, S. & Kuivalainen, O. (2012). The effect of network competence and environmental hostility on the internationalization of SMEs, Journal of International Entrepreneurship, 10 (1), 25-49.
Turnbull, P., Ford, D., & Cunningham, M. (1996). Interaction, relationships and networks in business markets: an evolving perspective. Journal of Business & Industrial Marketing, 11 (3/4), 44-62.
Vesalainen, J., & Hakala, H. (2014). Strategic capability architecture: The role of network capability. Industrial Marketing Management, 43 (6), 938-950.
Walter, A., Auer, M., & Ritter, T. (2006). The impact of network capabilities and entrepreneurial orientation on university spin-off performance. Journal of Business Venturing, 21, 541-567.
Weerawardena, J., Mort, G.S., Liesch, P.W., & Knight, G. (2007). Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective. Journal of World Business, 42, 294-306.
Zerbini, F., Golfetto, F., & Gibbert, M. (2007). Marketing of Competence: Exploring the Resource-Based Content of Value-for-Customers Through a Case Study Analysis. Industrial Marketing Management, 36, 784-798.
Äyväri, A., & Möller, K. (2008). Understanding relational and network capabilities: a critical review. In: 24th IMP conference, Uppsala, 2008.

Table 1. The means, standard deviations and correlations of the variables used in hypotheses testing.

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1 CRR	4.12	1.30	1							
2 RSS	4.47	1.41	0.82**	1						
3Amount of downstream partners	14.15	17.89	0.33*	0.43**	1					
4 Amount of upstream partners	21.11	22.24	0.17	0.10	0.11	1				
5 Importance of downstream partners	4.10	1.81	0.36**	0.36**	0.48**	0.12	1			
6 Importance of upstream partners	4.53	1.31	0.24*	0.31**	0.24	0.30**	0.15	1		
7 Firm size [employees]	33.12	38.26	0.00	0.04	0.14	0.30**	-0.05	-0.08	1	
8 Industry [1=knowledge-intensive, 0=other]	0.44	0.50	0.07	0.02	-0.36**	-0.27	-0.20	-0.08	-0.08	1

*p<0.05, **p<0.01 (two-tailed)

Table 2. Results of hierarchical regression analysis on the number of upstream partnerships

	Model 1	**Model 2**
Control variables		
Firm size	0.27	0.27
Industry (1=K-I, 0=other)	-0.23	0.24
Independent variables		
CRR Network competence		0.18
RSS Network competence		
Adj. R sq.	0.10	0.12
F	**3.56***	**2.95***

*p<0.05, **p<0.01 (two-tailed)

Table 3. Results of hierarchical regression analysis on the importance of upstream partnerships

	Model 1	**Model 2**
Control variables		
Firm size	0.46	-0.11
Industry (1=K-I, 0=other)	0.32	-0.10
Independent variables		
CRR Network competence		-0.04
RSS Network competence		0.35
Adj. R sq.	-0.02	0.12
F	0.44	2.16

*p<0.05, **p<0.01 (two-tailed)

Table 4. Results of hierarchical regression analysis on the number of downstream partnerships

	Model 1	**Model 2**
Control variables		
Firm size	0.25	0.13
Industry (1=K-I, 0=other)	**-0.35****	**-0.36****
Independent variables		
CRR Network competence		-0.01
RSS Network competence		**0.43***
Adj. R sq.	0.17	0.33
F	**6.37****	**7.27****

*p<0.05, **p<0.01 (two-tailed)

Table 5. Results of hierarchical regression analysis on the importance of downstream partnerships

	Model 1	**Model 2**
Control variables		
Firm size	0.03	-0.00
Industry (1=K-I, 0=other)	-0.11	-0.12
Independent variables		
CRR Network competence		-0.08
RSS Network competence		**0.38***
Adj. R sq.	-0.01	0.07
F	0.56	**2.54***

*p<0.05, **p<0.01 (two-tailed)

APPENDIX 1: NETWORK COMPETENCE SCALE ITEMS

Relationship-specific network competence:
Initiation subscale:

- We search actively for new partners.
- We visit potential partners in order to get to know them.

Exchange subscale:

- We exchange confidential information with our partners.
- We inform others in our firm about the requirements of our partners.

Coordination subscale:

- We put people from our partners in contact with key people in our firm.
- We put people in our firms in contact with key people from our partners.

Cross-relational network competence:
Planning subscale:

- We evaluate the way our relationship with each partner helps our relations with other partners.
- We evaluate the way the results of collaboration with each of our partners fit together.
- We compare our partners in terms of their technical knowledge.

Organizing subscale:

- We share the same goals with our partners.
- We initiate meetings and discussions among those in our firm involved in relationships with our partners.

Staffing subscale:

- We assign people to each relationship with our partners.
- We coordinate the activities involved in different relationships with our partners.

Controlling subscale:

- We assess how much effort our people put into relationships with partners.
- We monitor the extent to which relationships with our partners work to our advantage.