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TO TRUST OR NOT TO TRUST: THAT IS THE QUESTION – A CASE OF FINNISH TECHNOLOGY INDUSTRY SUPPLY NETWORK

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TO TRUST OR NOT TO TRUST: THAT IS THE QUESTION – A CASE OF FINNISH TECHNOLOGY INDUSTRY SUPPLY NETWORK

Introduction

Networks, as a way of organizing both economic and non-economic activity, have become ever more prevalent in our modern societies (Powell, 1990; Kanter, 1991; Raab & Kenis, 2009). Although there are few critical views to the contrary (e.g. Granovetter, 1995), what we can observe around us is much in favor of assertion that networks in their variety of manifestations have proliferated over the past decades. It is safe to say that there has been an increasing appreciation for the role of both informal and organized networks in business, and as a result, their importance has grown noticeably (Smith-Doer & Powell, 2005, 379).

As Harrison (1994) pointed out already over a decade ago "[n]etworking among companies is now in fashion all over the world", and it still seems fashionable from what we can discern in the world around us (Tsupari et al, 2004). Taking an extended view on the issue, one could argue, that in fact "the entire economy may be viewed as a network of organizations with a vast hierarchy of subordinate, criss-crossing networks" (Thorelli, 1986). In discussing networks we follow Thorelli's (1986, p. 37) assertion of networks being "two or more organizations involved in long-term relationships", which, regardless of its apparent simplicity, gives room for multitude of interpretations and concrete manifestations that networks may assume. Because of that, it serves well as a working definition of network for this paper's purpose.

Networks are often seen as intermediate forms of organizing taken to alleviate some of the problems related to markets and hierarchies as forms of organizing economic activity (Powell, 1990, Thorelli, 1986). Ultimately, the motivation for organizations to join a network is the attainment of goals that are unachievable by the organizations independently (as postulated by van de Ven, 1976). They are seen, among other things, to provide competitive advantage (cf. Jarillo, 1993; Alter & Hage, 1993), efficiency advantages (Bradach & Eccles 1989), economic benefits through lowered transaction costs (Parkhe, 1993; Zajac & Olsen, 1993), foster learning (Powell, 1990; Dore, 1983; Hamel, 1991), offer fast access to new technologies or new markets, and legitimacy and status benefits for their members

(Powell, 1990; Nielsen, 2002; Podolny & Phillips, 1996), enable better adaptability to unanticipated environmental changes (Powell, 1990, Kanter, 1991), as well as a capacity to enjoy "spirit of goodwill" between members of the network (Dore, 1983). Networks are considered especially useful for the exchange of qualities or commodities whose value is difficult to evaluate, like know-how, technological capability, a particular method or style of production, or a spirit of innovation and experimentation (Powell, 1990)

While the positive aspects of networks may extend even far beyond those noted above, networks as a mode of organizing are, however, far from unproblematic. Various problems related to collaboration between independent economic agents have remained common in network setting as for instance Liedtka (1996), and Kohtamäki and Kautonen (2008) have recently demonstrated. While claiming that there are inherent problems in organizing economic activity utilizing networks as the vehicle may not bear much novelty in it, the findings of this paper will shed some additional light on the more specific issue of trust/distrust as one of the central factors affecting the likelihood of realization of benefits from networked activities. Although the importance of this topic is pointed out by e.g. Podolny and Page (1998), only a limited number of studies have been done on the formation of trust in the networks (Lee & Mellat-Parast, 2009). Thus this paper may be seen as a response to their call.

The goal of this paper is to better understand some of the main concerns regarding governance and cooperation within a supply network and the role of trust/distrust with regard to these governance and cooperation concerns as expressed by its members. The paper will approach the role of trust in network relationships' governance from three vantage points in our case network. 1) From the viewpoint of the focal company, 2) from the viewpoint of the supply companies, and 3) from the viewpoint of the venture capitalists closely connected with the industry. We adopt this multiple viewpoint approach on trust in order to more fully understand how the role of trust is constructed by different parties and what sorts of meanings, positive and negative, are associated with it by them.

We first discuss the theoretical foundation of the research framework stemming from two distinct, yet closely connected streams of literature. We utilize theory and ideas found within the network literature (see e.g. review by Oliver & Ebers, 1998), as well as literature dealing with trust (for a recent review see e.g. Rousseau, et al., 1998; Bigley & Pearce, 1998). The two streams of literature complement each

other and provide a way of analyzing the issue of trust within network relationships and its relation to network governance and cooperation. After taking a look at the data and methodological issues, findings and concluding discussion will be presented.

Trust and Networks

There is an intimate connection between the concepts of network and trust, inasmuch as to talk about one without mentioning the other is difficult. Trust as a concept has multiple meanings and it is widely-used as a construct in theorizing in various fields of science. As a result, its usage varies considerably (Bigley & Pearce, 1998). Numerous typologies have been suggested to make sense of the diversity related to the concept (see e.g. Bromiley & Cummings, 1995; Mishra, 1996; Sitkin & Roth, 1993; McEmily & Zaheer, 2006; Van de Ven & Ring, 2006). As Lewicki and Bunker (1995) argue, the field of studies related to trust may be grouped into three categories with a disciplinary perspective of their own: 1) personality theorists' view of trust as an individual difference, 2) sociologists' and economists' perspective on trust as an institutional phenomenon, and 3) social psychologists' view of trust as an expectation of another party in transactions.

Furthermore, the concept of trust has been defined as ""a generalized expectancy held by an individual that the word, promise, oral or written statement of another individual or group can be relied upon" (Rotter, 1980 p. 1), or the willingness of one to accept vulnerability based on positive expectations about another's intentions or behavior (Mayer et al., 1995; Rousseau et al., 1998). It has been proposed by Zucker (1986) that much of the personal beliefs about the others' trustworthiness are preconscious in nature in that they are taken as granted as part of the world known in common, until they are violated. This makes the concept of trust essentially, if not deeply rooted, at least closely connected to the concept of culture, be it professional, organizational or even societal/national. In fact, we can find several studies discussing the issue of trust as a concept closely related to national culture (see e.g. Fukuyama, 1995; Yamagishi et al., 1998; Dyer & Chu, 2003). The above views are concluded in the three mechanisms building trust outlined by Adler (2001): First, familiarity through repeated interaction can lead to trust (or distrust), second, interests can lead to a calculative form of trust via a sober assessment of the costs and benefits accruing to the other party through exploiting other's

vulnerability (in the sense of Williamson, 1993), and third, shared values and norms can engender trustworthy behaviour.

The issue of existence or lack of trust for business organizations is manifold. It has been found in previous research that an organization's ability to develop relationships characterized with trust is an increasingly important source of competitive advantage (Barney & Hansen 1994; Lane 1998; Sako 1998). It has also been found that advantages accrue to firms that enjoy an internal climate of trust (Shockley-Zalabak et al. 2000), and that can develop trust and cooperative relationships with external partners (Zaheer et al. 1998; Dyer & Singh 1998; Barney & Hansen 1994). Even more to the point, as Miles and Snow (1992) point out, trust promotes adaptive organizational forms, such as network relations, and furthermore, it enables mutual commitment and shared risk-taking of network partners (Ruuskanen, 2003, p. 12). Powell (1990) has even argued that trust between network partners leads to lowered need to safeguard the parties' interests through explicit contracts. Thus, the above observations clearly accentuate the importance of trust and social norms in the network setting.

Furthermore, previous research into the nature of trust suggests that trust may be a "meso" concept, a concept that integrates microlevel psychological processes and group dynamics with macrolevel institutional arrangements (House et al., 1995), i.e. social and institutional norms. In order to study trust as an interfirm phenomenon, what is needed, as Rousseau et al. (1998, p. 393–394) so elegantly put it: "is to ride the organizational elevator up and down a variety of conceptual levels". This is needed to catch the multitude of meanings that are associated with the concept of trust and social norms in business networks.

It has recently been suggested that context sensitivity should be increased in trust research. Rousseau et al. (1998, p. 402) conclude that "context is critical to understanding trust. Acontextual research will be limited in its ability to represent the true functioning of trust". This is exactly why we want to be very clear on the context of this study: we study trust in a Finnish supply network in which high technology and engineering expertise as social norms are pronouncedly present and challenged by the changes in the business environment.

With this study we aim to contribute to our understanding of whether trust may be perceived as a cause, outcome or a moderator in supply network relations, and on the dynamic nature of trust in network relations. One way of perceiving the dynamics of trust and its likely outcomes in network setting is suggested by Tsai and Ghoshal (1998, p. 467):

> When two parties begin to trust each other, they become more willing to share their resources without worrying that they will be taken advantage of by the other party. Thus, cooperative behavior, which implies the exchange or combination of resources, may emerge when trust exists. As trusting relationships develop inside a network, actors build up reputations of trustworthiness that may become important information for other actors in the network. It is reasonable, therefore, to expect that a more trustworthy actor is more likely to be a popular exchange partner for other actors in the network.

Tsai and Ghoshal quite clearly perceive trust as cause, quite the same way as do many others taking an economics-based viewpoint on the issue (Rousseau et al., 1998). However, while trust based on previous experiences with a partner in interactions may have a tendency of resulting in the decision to cooperate, the question still remains: why do parties choose to trust one another in the first place? The possible answer may lie in the developments taking place in the business environment. The constant drive toward specialization and core competencies in search of competitive advantage only highlights the fact that while this has happened as businesses have tried to become more unique, and more clearly experts in their own more narrowly defined domain, business organizations have grown more and more dependent on one another.

At the most general level, the issue of creating and sustaining competitive advantage is at the heart of supply network arrangements. Creating and sustaining competitive advantage in network setting obviously requires some governance and coordination of activities. Sustainable competitive advantage hardly ever just arises out of the blue, but instead, requires a great deal of attention and coordinated activities to materialize (Barney 1991). This makes the role of trust and the related other coordination mechanisms very delicate matters to balance in networks.

Context of the empirical study

The focal company studied in this study is a Finnish corporation operating in global markets. It employs over 29,000 people in more than 50 countries. It is the leading supplier of highly tailored project delivery capital goods in its own worldwide segment and is considered the global technology leader in its field. The net sales in 2008 were EUR 6.4 billion.

Typical for technology-driven industries in general, the focal company of our study is highly focused on its core competencies. It has been aiming at long-term development of subcontracting already since 1990's (Honkanen, 2006). The emphasis put on the development of subcontracting becomes easily understandable with the fact that the purchases amounted 65% of focal company's net sales (Focal company CEO, 2007). As the supplier network performs more than half of the production, its competence and development is of great importance to the focal company's business.

The focal company has a total of 20,000 suppliers, with one fifth of the sourcing volume covered by the one hundred largest suppliers. (Company's web-pages). While the company states that "providing jobs and income for its partners and subcontractors" is its social responsibility globally, it also acknowledges the risks related to supply network: "Increasing global contract manufacturing not only challenges us to manage a functional supplier network, it also requires us to assess the ways of operating, the quality and the local impact of our cooperation partners." (Annual report, 2008, p. 24).

The main drivers for the industry's profitable growth strategy have traditionally been R&D and constant flow of innovations integrated into the final product. Much of the R&D is carried out in close cooperation with the final customers and the subcontractors, as well as research facilities and universities. In recent years it's aspiration has been to transform from product focused company into a global service company. Two years back, in an annual consultation meeting with subcontractors, suppliers and partners, the focal company's CEO stated that the company will purchase more, but from fewer suppliers (2007b). It aims at having more partnerships, but it will have several competing suppliers in order to guarantee the best supply of products in all circumstances. The partners are expected to take larger responsibility in the value chain, and to deliver larger modules together with its

own net of subcontractors. They are also expected to be innovative and improve the products, for instance with respect to the production technologies.

In this article we describe the major challenges, which were recognized in the interviews to impede the joint research and development efforts within the supply network: differing views regarding intellectual property rights (IPR), and the conflicting needs for close partnership and competition. When discussing these challenges the interviewees were constantly referring to trust or distrust between the network partners.

Methodology and Data

The results and discussion of the paper build on a qualitative case study. The data was collected in 2008 through semi-structured interviews. The interviewees were identified by using a snowball sampling procedure (Laumann & Pappi, 1976) where the initial interviewees, representatives of senior management of the focal company in charge of managing supply relationships were asked to identify persons in close contact with supply companies taking care of the relationship at the operational level on constant basis. In turn, the operational level representatives of the focal company were asked to identify some of their counterparts in the supply companies with whom they had interacted for a while so that the supply company representatives too would be the ones with most experience of the interaction between the parties. Through the snowball method we were able to identify 13 candidates for interviews. All of them also agreed. In all we conducted 17 semi-structured theme interviews – each lasting around 2 hours. The interviewees represented 11 companies. Six interviewees were from the focal company, one from its subsidiary, six from supplier companies, and four interviewees represented venture capitalist firms. The interviewees of the supply companies and venture capital companies were – with the exception of one person – CEOs or founding members of their companies to be able to depict their strategic intent and role in the network.

Each interview was transcribed by one of the researchers present at the interview situation to guarantee accuracy. The analysis of the empirical data was conducted by utilizing qualitative thematic analysis (Boyatzis, 1998; Leininger, 1986; Aronson, 1994). In addition to the interview data, we have occasionally used secondary sources where additional information was needed, such as newspaper or

magazine articles, and the Internet site of the focal company to gain more complete picture of the network and its situation at the time of interviews and analysis of the data. What is sought after with the use of additional sources is increasing validity, reliability and credibility of the research findings though data triangulation (Jick, 1979; Denzin, 1989).

Findings

The study lends further support to the oft-noted fact that the coexistence of formally independent, but practically mutually dependent organizations within supply networks is not without difficulties. Instead, the coexistence has some noticeable friction points. The most important of those based on our analysis appear to be the following two issues that both the focal company's and the SME supply firms' representatives, as well as the venture capital firms' representatives had strong and diverging beliefs about: 1) issues related to intellectual property rights, and 2) issues related to attributes used by the focal company to distinguish supply firms' role between "partner firms" and "purely sourcing firms".

Next we will take a more in-depth look at these issues to discuss the role of trust or lack of it to better understand their relations. For clarity, in what follows, when utilizing quotes from the interviews, we will denote focal company representatives' comments with (FC), supply company representatives' comments with (SC) and venture capitalist company representatives' comments with (VC).

Intellectual property rights and trust

The most obvious issue where trust comes into play in the network relations in our case supply network is the questions pertaining to subject of intellectual property rights. Representatives of the focal company, the supply companies and the venture capital companies all saw the issue of the intellectual property rights as key questions to be handled properly for the networked operations to be successful. However, the treatment of intellectual property rights within the studied supply network was the issue that raised the most diverging comments from the interviewees.

The venture capitalists clearly recognized the benefits of joint development of technology and related innovations, but at the same time they acknowledged the inherent difficulties in it related to intellectual property rights. They maintained that proper handling of intellectual property rights is an important precondition for their involvement in any of the companies within the network. Their suggested

solution to the issue clearly represents a deterrence-based trust approach in which trust has only secondary role to explicit contractual governance of the relationship.

> [L]ets say that parties are developing some solution together. Obviously they get exclusive rights for that solution … but that needs to be agreed beforehand. (VC)

> [T]ypical fear is that someone with a good idea is worried that it will be stolen … if for instance there is some technology for which [Corporation X] might be the customer, and every other company within the industry might also, the fear is that [Corporation X] will snatch it and block its use for any other customer … This is what the investors and entrepreneurs are afraid of. But this fear is easily overcome by establishing a partnership agreement that everyone can live with … If things are agreed properly, there should be nothing to fear for anyone. (VC)

However, a typical feature of innovations and ideas to be further refined by joint efforts of network members is that the innovation or novel idea may be ill defined to start with; the proverbial diamond in the rough to be cut and polished in cooperation. In such instances it is quite hard to make an elaborate binding contract between the parties involved regarding intellectual property rights and possible applications emerging further down the line. Furthermore, it was pointed out by an interviewee that even the Finnish legislation sets some hindrances for such joint development, and in fact, offers possibilities of opportunistic behavior.

> … if the idea is publically given out to the network for further development there should be very clear guidelines concerning the public nature of the idea: no one should be allowed to "expropriate" it after its been made public ... ideas should be considered within the network as matters covered by nondisclosure agreement … anyone within the network is able to utilize the idea in their products or services if they see it fit … However, the Finnish legislation is not fully thought out regarding open innovation processes. In the US it works fine, they have this first-to-invent principle; the one who first publishes the idea has all the rights. In Finland the principle is first-to-file meaning that the first to file a patent application or registration application has all the rights. Now there's this little dilemma that we have in our hands. (FC)

We may interpret the above so that the network partners have to resort to the relational dimension of social capital, basically trust and trustworthiness in the face of inability to contractually govern all the details of the interaction around the innovation or idea under development. As Uzzi (1996) has noted, trust can act as an important governance mechanism for embedded relationships.

The implicit concerns of the venture capitalists are echoed in the supply companies' comments. There seems to be major concerns with intellectual property rights-related issues by some of the supply network members, while others have not faced any, or very few problems only. Some appear to have accepted the intellectual property rights policy of the focal company, while others feel it unjust.

> We have quite boldly taken up the product development challenge ... by doing that we have gained more than lost … Our edge is that we have deeper knowledge of the product … If seven-year experience in production does not give us the upper hand against someone who was handed the design and makes their bid in three weeks and comes up with a cheaper solution and manages to actually manufacture it too, that means that we really suck at our business. (SC)

> Take for example the development of these constructions. Why we don't give too many suggestions for their development is because there is not much for us in it … we just hear from them [Corporation X] that obviously, if you make suggestions, you are considered a better supplier, and maybe, we might buy more from you in the future. But, if we are to invest a lot into the development of the construction, they won't buy from us after all when we have included the cost of development into our price of the part. (SC)

There seems to be some apprehension among the suppliers as to whether investing time and money into product development would be worthwhile endeavor. While it might be sound decision for the future competitiveness and from the competence development point of view in situations where there is a wider market beyond the focal company, the soundness of the investment is questionable in cases where the focal company is the only customer

Especially in those cases, where supply companies are actually developing products for the focal company, they have the feeling that the benefits for the focal company (as savings or otherwise) are not

compensated for the developers at fair price. There is no incentive for the supply company to invest in further development although that might be in the best interest of final customers, and the network as a whole. In the case network the focal company has established arrangements with at least a few key suppliers to try and deal with the voiced concerns:

> We have established with certain partner companies these development meetings. With them we have managed to push the costs down. We have agreed a win-win principle with the partner companies; if you manage to lower your cost, we split the savings, half for you and half for us … we are talking about labor hours … material cost savings will go fully to our benefit. (FC)

A related problem is that after the contract term is over, the product rights are transferred to the focal company. Then it has the possibility of disclosing the joint design to any company in search of lower price. This is a major origin of the feeling of injustice among suppliers.

> If we invest money in it, come up and develop a good solution, and then along comes someone else who [unwarrantedly] capitalizes on it … not having had to invest into product development, they can obviously sell it cheaper than the one who invested into its development and has personnel for R&D. We are the only ones in our field of expertise with R&D personnel on our staff. (SC)

The comments above, as well as previous comments by sourcing company interviewees have an underlying theme in common. One cannot escape the interpretation that there is some sort of trust deficit between the focal company and supply companies concerning intellectual capital. While the parties may in principle trust one another, incidents in the past and perceived injustice in business practices may have shaken the trust foundations in a fundamental way, influencing the present situation. National culture has been seen as an important influencing factor on the development of trust. As for instance Doney et al. (1998) have argued, specific national cultural norms and values relate to the creation of trust. This is very true in Finland. Trust and trustworthy behavior in general, as well as in business relations are issues that the Finns take great pride in and hold in high esteem. The following quotes bear witness to the above conclusion.

… this is what we [the Finns] are good at, I mean that you can trust the word of a Finn, and that applies to most of the Scandinavians too … like if a person says that he/she is going to do something, most often he/she will actually do it too … We have that trust in the Finnish business culture. (SC)

Well of course, now, distrust … it breeds from a situation where words and actions don't meet. That's where it starts from. (SC)

… you cannot go around bullshitting customers and suppliers, you have smart people on both sides … you need to aim for as open communication as possible. I do remember when 30 years back things were different; if you succeeded in bullshiting a supplier in a deal, that was considered a good purchase … but that just doesn't work anymore, that cannot be done. (FC)

I appears that either the suppliers within the case network have an elephant's memory, or otherwise the legends of the focal company behaving in manner breeding distrust in the past have lingered on and the "folklore" of the alleged wrongdoings of the past has created some sort of parallel reality of its own in the minds of the supply company representatives that cannot be overcome easily. However, some of the current distrust between the network members may be due to more recent phenomena, such as the focal company's definition of intellectual property rights policy and it being perceived by at least some supply companies to be unreasonable.

… what we aim at is that – depending somewhat on how much the supply company invests its own money into the product development project, but if it's all financed by us [the focal company] – we do want all the rights ... if the supply company invests some of its own money into the project, we have no problem in limiting our rights so that we only get them in our field of business … if the product is utilizable in some other field, the supply company is free to use it in other businesses. But we are quite jealous of product development commissioned by us … we don't want to see them to use it directly, to market it directly to our customers, or to our competitors. That's where we draw the line – strictly. (FC)

The problem for the supply companies with this definition of policy is that the focal company's business line is very extensive and covers basically the whole industry-wide value chain it supplies the tailored capital goods to. This means that the avenues for additional business for those doing joint product development with the focal company are few. This only highlights the importance of trust and open communication, because often strict contractual control is difficult, or otherwise may result in excessive limitations for the supply company. As a venture capitalist comments:

> The problem with the situation is that, maybe, maybe we have one too big player, and that player is [Corporation X] … it has soaked up all the know-how there is in the field. If we had more competition over here, we would have more suppliers and more industrial activity in the field. (VC)

Supply network role determination and trust

Role confusion creates friction within the supply network. It seems, based on the interviews that the focal company and some of the supply companies have differing interpretation of the role played by the supply companies especially in relation to parties' roles in joint development and resultant intellectual property rights.

The role confusion is linked to the intellectual property rights in that some of the friction on that front may very well spring from the aspirations and interpretation of the supply company that what it is doing is actual joint product development, while judging from the focal company's perspective, what a supply company is doing is "merely normal engineering work" that is geared towards normal small scale improvements and streamlining of the product design for it to be more efficiently produced.

> … related to intellectual property rights, we aim to predefine the issue … for instance if we order a product from a supply company, if we provide the specs and design for them and they carry out the normal engineering work related to it, that's simply an assignment and all the intellectual property rights belong to us. (FC)

While the venture capitalists clearly saw the benefits of joint development within the case supply network, they were somewhat doubtful whether the operational decisions and processes within the

focal company were really geared toward such a mode of operation, or whether the mind-set at the focal company side was really supportive of such efforts. Moreover, the venture capitalists' comments reflect the political nature of supply network arrangements. The power relationship between the large focal company and its relatively much smaller supply companies is heavily tilted in the focal company's favor.

> Yes, there should be more innovations fed from within the network for other members so that more responsibility would be given to further develop the innovation or idea in cooperation with others. I don't know if it's so much harder to do in Finland or not, but it is fair to say, it's not very easy in other places either. (VC)

> There's a downside to it, and that's that the big corporation wants to hog all to itself, and in a way, possibly without explicit intention, at the same time it hinders the development of supplier. Although the big corporation expresses that it is their interest to have the small suppliers develop such side business … it is not really appreciated or might get downright sabotaged. (VC)

> … now these corporations operating in the industry [X] are rather big and they are … pretty self-sufficient, and in many ways one gets the feeling that they feel they don't need such small firms at all, that they have invented all that there is to invent themselves, that they have all they need. (VC)

While cooperation between buyers and sellers has increased over the years due to outsourcing of operations, the research on the likely benefits of outsourcing various operations has shown inconclusive results (Hoegl & Wagner, 2005). While this is the case in general, Hoegl and Wagner (2005) note several positive aspects of cooperative product development in networks; among other things improved quality, better budget control, and better scheduling were noticed accruing from joint product development. As this is the case, and as the venture capitalists interviewed point out too, the studied supply network would seem a likely candidate for various benefits. It seems, however, that there is some sort of mismatch in the studied network in this respect, and that while at some level there seems

to be understanding of the benefits on the focal company side also, something is missing or hindering effective cooperative product development.

Moreover, the focal company has clearly different kinds of modes of operation it uses in interaction with different kinds of supply companies within the network with regard to the level of complexity of the sourced product or service. This in connection with the role confusion among supply companies is very likely to cause even more misunderstandings within the network for supply companies that consider themselves as doing valuable product development for the focal company, but judging from the overall process perspective of the focal company, they are tinkering with miniscule details of the final product only.

> … sourcing that is so to speak, "easy", that's something that we usually resort to competitive bidding … but those kinds of matters that are hard to control - judging from the process perspective, those types of things we tend to handle with yearly contracts or partnership agreements. The more complicated the product, the longer-term arrangements we seek. That guarantees the quality and timely delivery. (FC)

So basically, what the issue of network role determination and related confusion boils down to, is differences in perception of the qualities required of partner, system integrator, and subcontractor, and overall, a poor understanding of some supply companies of their role in the total process of manufacturing the final product. The focal company makes quite clear distinction between the types of suppliers based on what they contribute to the final product in terms of product development activity. In fact, an interviewee from the top management of the business line concludes that the focal company does not have that many product development partners at the moment. However, judging from the data, it seems that this state of affairs has been inadequately communicated within the supply network.

> … system integrator, that status requires that we have a relatively extensive experience of cooperation with the company. We, like, trust the company to posses certain reliability, certain quality and that they have sorted out these sustainable development issues already, that's required before we can talk about any kinds of partnership and long term commitment with the company … what goes typically with partnership is that we have specifically committed to the

company for the long-term, and have taken internal steps to intentionally reduce our own know-how and workload in that area … the other end of the spectrum, pure assignment, that's more like an isolated case in its own right … it too may lead to deeper and more long-term cooperation. (FC)

Speaking strictly about developing the product itself in joint projects, that's something we don't do that much, I hope that it would be more commonplace sometime in the future ... in product development we have not reached partnership arrangements with anybody this far, we are more or less just giving out assignments for others to carry out … to talk about the criteria we use when deciding on product development subcontracting, the overriding criteria is where the best know-how resides. In such cases we hardly ever resort to competitive bidding for projects ... There are some cases where we have ended on a collision course related to product rights, luckily they are few. Obviously in such cases we have to seriously think whether we want to continue cooperation with such party. (FC)

There seems to be only limited possibilities for the supply network members to get deeply involved with product development at present, especially when it concerns focal company's core technology. However, there seems to be at least some aspirations at the top management level to include companies determined to posses a partner or system integrator status/role sometime in the future in the product development related to the complex and technologically demanding end product.

Know-how related to more advanced technology – those suppliers I would like to keep here in Finland and would use the possibility to develop them in cooperation, even to the extent that I would be willing to let the supplier to develop these technologies and solutions for our benefit … it would be beneficial to maintain and develop their strategic know-how here, close to our core technological hub and then use the supply networks abroad around our centers there to push down the costs.(FC)

While at the moment the focal company is very protective of its technological core and has chosen to keep the soaked-up know-how deeply hidden "in-house secret" it seems that it is at least considering lifting the veil of secrecy on some aspects of its technology.

… with [Supply Company Z] we have a partnership relationship, and our aim is to have them supply us major system components … and when [Supply Company Z] emerged, our know-how related to the technology it supplies has become thinner … this is the way it should be, where would the benefit be for us if we had to maintain as strong resourcing in every field as we used to have previously? If this was the case, what would be the sense of setting up partnership arrangements in the first place? (FC)

The connection of the supply network role and trust may be seen to come about through the role of trust in creation of shared understanding between different parties. When actors interact over time they are more likely to perceive each other as trustworthy (Gabarro, 1978), and furthermore, interorganizational trust increases the use of less formal mode of governance (Gulati & Nickerson, 2008).

Trust in frequent and close social interaction is essential for sharing important information, and to learn a common shared viewpoint. However, the common point of view is vanishing in our case supply network. Shared understanding related to members' roles in the bigger picture, and the roles in delivering the final product are things that the members of the supply network should consider more thoroughly in the future to relieve at least some of the role confusion This bears great importance for the studied network, because as Dyer (1994, p. 181) has noted in his research of the Japanese manufacturing system:

First, competition occurs among production networks, or value chains and not simply among companies. Consequently, managers need to form a strategy for their entire production network not just their company. Second, the arms length model of supplier relationships in which buyers use competitive bidding to select suppliers that make relatively uniform productions, is simply obsolete for a network that makes a complex product. A tightly integrated production network, dedicating supplier assets to the customer, will virtually always outperform a loosely coupled production network.

Our case network revolves around a very complex product, both in technological and in project management sense, which makes the issues pointed out by Dyer crucial for the functioning of the network. The growing interest for competitive bidding and resulting role confusion and feeling of being mistreated were commented by a venture capitalist in the following way:

> If I think about it, in principle it [competitive bidding] is a good thing for the focal company … but thinking the importance of the focal company … there is this problem related to it … obviously they have to keep the competition alive at times … lets say, they [the focal company] has said that you are our number one supplier. Then, one day, they [the focal company] just state that we looked around and got the same product/service cheaper elsewhere. What they [the focal company] don't seem to realize is that if we are talking about single assignment here, of course they will get it cheaper … the supplier offering for the first time is willing to offer at zero profit, or even at substantial loss, just to get in to the focal company's network. (VC)

If trust between the network members keeps being eroded due to feelings of being mistreated because of apparent role confusion there is a risk of further downward spiral in trust. It would appear that what is needed in the future is more open dialogue between the focal company and the supply companies to create shared understanding related to actors' roles, what is expected from them and why they are being handled in the business relations the way they are.

Discussion and Conclusion

Our empirical data comes from a technology industry supply network. It operates in a business sector that has very long tradition in Finland. The focal company has been delivering highly tailored capital goods for its customers since 1940's and during last decades it has build up a large supplier network. While the suppliers have engineered and produced specific parts of the final product, the focal company has concentrated on project delivery management and superior technological knowledge that it considers as its core capabilities.

The business sector, and the skills and knowledge of the people working in the sector, have been highly valued in Finland. Even though the focal company is operating globally, still approximately 80% of its

suppliers are Finnish. The professional culture within the community has been strong and often also built on personal relationships, as an interviewee pointed out:

> Surprisingly often [collaboration between companies] begins from old personal contacts. Either the person has first been employed by us and then moved to some other company, or the person was classmates with someone of our staff. I must say, it is the most common way for establishing [inter-organizational] contacts in R&D. (FC).

Powell's (1990) suggested that interfirm cooperation is often found in economic activities based in a particular region, such as Scandinavia. The above provides one explanation why this might be so: The shared history and knowledge of the particular business sector, as well as a common national culture and strong professional community have helped to form close business relationships. Furthermore, when considering our findings in the light of Adler's (2001) categories on trust sources we conclude that in the last decades the case network has built the inter-organiasational collaboration largely on norms and values, and also on familiarity through repeated interaction.

However, the interviewees consistently pointed out that, today, the business environment is changing radically. Due to the stagnation of the business and the current aspirations of the focal company to change from a traditional technology provider to a global service provider, the business sector in Finland is in turmoil. The focal company is re-categorising it suppliers to those having potential to become first-tier partners and the others being more or less substitutable. Thus, the rules and boundaries for inter-organisational collaboration are being redrawn.

This restructuring has provoked uncertainty within the network. The interviewees presented their fear that the norms and values, and familiarity would be substituted in the network relationship management by mere calculative type of trust (Adler, 2001). This would, in the worst case scenario lead to a negative cycle, where the trust and network collaboration diminishes and finally dies.

In our empirical case the discussion over trust comes explicit in the negotiations over intellectual property rights and role determination within the network. Both issues stir up heated debate between the supply companies and the focal company. Even though the new strategy is to assign larger parts of

the business and R&D to selected partners, many employees within the focal company still seem to consider technology knowledge as its core competence, and are reluctant to give more responsibility of R&D to its supply network. This is also reflected in strict interpretations regarding intellectual property rights. Suppliers, in turn, are annoyed about how intellectual property right rules hamper their possibilities in finding new customers. The case is rather similar in reorganisation of network roles: the strategy set out by the CEO is not yet been operationalized in practises of e.g. buyers of the focal company. Whereas, some partnerships are already been managed with rules that pay more attention to mutual development, some others feel that they are still constantly being forced to compete against other potential suppliers.

Hence, our interpretation is that while the previous source of trust – strong culture and norms building on local professional community – is losing its importance, these above two issues will in practice determine the new structures, norms and rules guiding interaction and trust between parties in near future.

While there seems to be some congruence of thought between the top management of the focal company and the external experts – the venture capitalists – in that both feel it would be beneficial for both the focal company and the members of the supply network to form closer and more meaningful partnership arrangements with one another, it seems that there are several incongruent logics operating within the focal company on the issue. At the top, the bigger picture of likely benefits of partnership arrangements and their strategic goals are easier to piece together than at the lower levels of the organization. In terms of supply strategy, it might make sense to outsource more of product development and do joint development work with few important partners on long-term basis. However, if the parts of the organization carrying out the day-to-day operations with the supply network more or less exclusively follow the short-term cost efficiency-driven mode of operation as the data would suggest, the likelihood of realization of benefits of the networked operations will deteriorate.

It would appear that to certain extent the focal company suffers from what might be termed as "control syndrome", a mode of operation that is in stark contrast with the requirements of effectively run network governance not based on power, but instead on cooperation. The difficulty of adopting more cooperation-based mode of governance may stem from the fact that the case network may be

characterized as a stable upstream network portraying many of the defining features of stable upstream networks outlined by Miles and Snow (1992); the focal company is aiming to maintain a supply network of limited number of carefully selected suppliers for certain components of its final product. The stable network bears close resemblance to the traditional functional organization from which it derives both its structure and operating logic (Miles & Snow, 1992).

However, as the operating logic of stable upstream network stems from the functional organization, the expectations laid upon the operating logic of the network organization by the supply companies and the realities of its functioning and governance from the viewpoint of the focal company stand in stark contrast. The focal company has at the functional level a tendency of treating the network comprising of mutually dependent, yet individual enterprises as an extension of its organization as the operational logic of functional organization would suggest it should do. The problem obviously lies in the very fact that the supplier network members are not part of the focal organization, and as such, not in the direct control of the focal company. Accordingly, they do not wish to be treated in a way as if they were.

> … these big companies, that they would assign responsibility to the subcontractor also, because that would help the subcontractor to develop its know-how. But in the current situation, the focal company has like this dual role. It carries out the product development, but then hands the manufacturing work to someone else. This means that it keeps the other [the supply company] in a paralyzed state. It [the supply company] only performs the manual labor and that doesn't add to its know-how in any meaningful way. (VC)

This kind of a situation is clearly not beneficial for the supply companies in the long-term. Nor is it beneficial for the focal company or the whole network either. Quite the contrary. If the focal company chooses to utilize its supply network mainly or only for cost reduction purposes without paying enough attention to the replenishing of the supply networks resource and competence bases, ultimately the whole network will run into difficulties if the suppliers are not able to develop their operation sufficiently due to excessive cost pressures put on them by the focal company.

Finally, to discuss the influence mechanisms and dynamism of trust, it appears that trust may be seen as cause, outcome and a moderator, all at the same time. While it is obviously not possible to make exact

inferences about the causality as such in a qualitative study as this, we may conclude that trusts appears in each of the above functions in our case network. First of all, the issue of familiarity with long-term partners has been suggested to breed strong bonds of mutual understanding and trust that have the role of facilitating cooperation (Gulati 1995). This feature is clearly present in our case network, the long-standing personal relationships among a group of people considered elite of the Finnish engineering profession facilitate trusting relationships not only within the case network, but previously it has been seen as the decisive factor in major business decisions between the focal company and its customers. As an interviewee comments on the issue, and at least implicitly laments the change:

> It has to be said though, that historically, even with customers, personal relations were decisive in closing the deal, but today it is more related to the numbers, you basically only evaluate the price and promised delivery terms and that the warranties are in order. In that sense the business has moved to toward more figure-dictated direction than it was like ten years ago when the personal relations of the big bosses of buyers and sellers played a big role.

Traditionally, then, trust has played what could be seen as a combination of cause and moderator effect. Prior acquaintance has paved way for future trusting relationship. Moreover, the role of trust may be seen as an outcome of interaction between business partners within the network, which leads to circular reasoning. As said, to be able to nail down the direction of causality, other means than qualitative study should be used, although it is questionable whether quantitative research would be any better in deciding on the final direction of causality either as we are ultimately dealing with complex issue.

Regarding the dynamism of trust, what we were able to find and interpret in our case supply network; it would appear that there is inherent dynamism related to trust. Taking an extended view on the issue, we may argue that every relationship has some fluctuations in terms of the "amount of trust". Judging from the situation of our case network, the amount of trust is on a downward trend at the moment. However, in the long run it would be essential that that trusting relations between the parties would be restored so that the network would be able to harness the full innovation potential of the network in the form of joint research and development.

The role of trust is essential for networks to fully benefit from the positive effects of networked activities but that applies to any other kind of business activity as well. As every conceivable situation cannot possibly be water tightly contractually governed, what we have left is trust in varying degrees. While even drawing extensive contracts to govern interaction may require some trust to materialize as well as confidence in their enforceability, such trust – deterrence-based trust enforced by costly sanctions – is not considered trust at all by some (e.g. Sitkin & Roth, 1993), but instead, a mechanism to try to shield oneself from the likely to occur deceptive behavior of the other. As this is the case, basically we do not have any other option available than to trust our fellow man. Obviously, the degree to which one trusts another in any given circumstance is an open question and affected by social norms. But, without trust, no network will function, nor will business be conducted. Certain amount of trust is paramount in the functioning of civil society. Without it not much would be accomplished. So to answer the question posed in the title: there is no other choice.

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