

***As a Spider Weaving its Web
On the Importance of Business Network
Creation for SME's Internationalization***

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Abstract

This paper uses the case of a Swedish small and medium sized (SMEs) company's internationalization process in order to discuss the question of how such firms purposefully create business networks that eventually facilitates their subsequent internationalization. The study shows that networks indeed are of importance for SMEs' internationalization, however, that the objective behind the development of such networks not necessarily is internationalization per se, but the latter is rather a by-product of the firm's strive for growth and survival. Further, the paper concludes arguing that whereas the question of accessibility to relevant and passable relationships and/or networks obviously is of importance, also a firm's ability to alter existing relationships is central.

Introduction

Already more than 20 years ago, Welch and Luostarinen (1988) argued that one of the limitations of growth through internationalization is a lack of resources (e.g. limited foreign market knowledge and experience), which can be overcome by forming business networks with distributors and customers.

Business network relationships since then have increasingly been recognized to be of outmost importance for the internationalization process of firms (e.g. Johanson and Mattsson, 1988; Axelsson and Johanson, 1992; Johanson and Vahlne, 1992; Andersen, 1993; Ellis, 2000). Johanson and Vahlne (2009) discuss this development in an article pointedly subtitled "*From Liability of Foreignness to Liability of 'Outsidership'.*" They claim internationalization is best understood as a by-product of efforts taken to improve a company's position in its network(s).

Furthermore, as it has been shown by extant research, not at least for the internationalization of small and medium sized enterprises (SMEs), business networks are important (e.g. Coviello and McAuley, 1999; Chetty and Blankenburg Holm, 2000; Moen and Servais, 2002; Chetty and Wilson, 2003; Sharma and Blomstermo, 2003; Blomstermo et al, 2004; Chetty and Campbell-Hunt, 2004; Loane et al, 2004). A common argument made in these and similar studies, is that SMEs due to their commonly experienced lack of resources, experiences and credibility, need to make use of networks in their internationalization efforts (Lu and Beamish, 2001).

Interestingly to note is that, whereas the importance of networks for SMEs' ability to internationalize is generally accepted, there is a lack of empirical evidence for how SMEs as

a matter of fact make use of their business network when internationalizing (cf. Chetty and Blankenburg Holm, 2000). Furthermore, as mentioned by Loane and Bell (2006) a common denominator of most research on the importance of business networks for SMEs' internationalization is that business networks are pre-existing; i.e. SMEs have already established adequate business networks that can be used when deciding to internationalize. However, whereas Loane and Bell (2006) in their study on rapid internationalizing entrepreneurial firms confirm that actors within firms leverage existing intrafirm, personal and social networks, they also found that many firms had no relevant networks at the start due to the leading-edge nature of their offerings that are targeted at emerging global niches. Firms therefore need to build new networks from ground thereby acquiring resources and knowledge in their quest to internationalize. As summarized by Loane and Bell's (2006), the prevailing literature's predominating conception that firms in general and SMEs in particular have access to relevant business networks per se when starting their internationalization is a clear limitation for developing a more comprehensive understanding for firms' use of business networks when internationalizing. With the exception of Blomstermo and colleagues (Sharma and Blomstermo; 2003, Blomstermo et al, 2004 a, b) and the work by Loane and Bell (2006), little attention

has been given on how new ventures and SMEs develop relevant and required networks when internationalizing. Loane and Bell (2005) further argue that network development or building not only is clearly influenced by entrepreneurial decision-makers, but seems to be more strategically intended as previously believed. All the above question marks deserve further research.

Purpose of the study

This paper employing an in-depth single case study of a Swedish SME (Q-Sense) aims to contribute to close the above identified gaps in research on SMEs' use of networks when internationalizing. As will be discussed more in detail in the methodology part, the case is built on secondary information and not at least on interviews with all the important decision makers working in Q-Sense from 1996 to 2007. Hence, the study has access to a very rich and detailed description of the firm's evolution from its inception. Whereas the paper gives a general idea for the firm's entire development, the main focus is on one very specific strategic move of Q-Sense in the year 2000. In that year - four years after inception, Q-Sense very intentionally created a Scientific Network - a set of relationships that proved to have an important impact on the firm's growth in general and on its internationalization in

particular. What makes the case interesting to discuss in regards to how SMEs make use of networks when internationalizing is that Q-Sense by creating a Scientific Network - a network of important opinion makers in the academia - actively and purposefully created a network - as a tool for increased reputation and for gaining credibility for their technology. As mentioned above, interestingly, this active way of 'weaving a net' proved to be successful and a very important element for Q-Sense's internationalization process. In sum, this paper answers the call of Loane and Bell (2005) discussed above, thereby contributing to the literature on SMEs' internationalization and to studies on network creation. The paper concludes with a conceptualization, discussing the active creation of networks during a SME's internationalization process.

After the preceding introduction, the paper continues with a literature review discussing for the paper important studies. Thereafter, the methodology is discussed, followed by the case study and reflections on the latter. Finally, a conceptualization illuminating the active creation of networks during a SME's internationalization process is presented, which then is followed by suggestions for future research in the area.

Literature Review

The literature review starts by discussing two different theoretical perspectives on the creation of business networks. Thereafter, a brief overview on studies on the importance of business networks during SMEs' internationalization processes is offered. Finally, a more detailed discussion on the few studies specifically dealing with network creation of SMEs and internationalization is given.

Different Perspectives on the Creation of Business Networks

As mentioned by Chetty and Patterson (2002), research on business networks can be divided into two main streams. A first stream of research - dominated by members of the Industrial Marketing and Purchasing Group (e.g. Gadde and Mattsson, 1987; Ford, 1990) - has applied the ideas of Emerson and colleagues (e.g. Emerson, 1972; Cook and Emerson, 1978) on social networks to business networks. Johanson and Mattsson (1988) - advocating this view - describe business networks as the relationships of a firm with its customers, distributors, suppliers, competitors and government. Activities in the network allow a firm to form relationships, which in turn help to gain access to resources controlled by other firms. Based on mutual trust and common long-term interests, networks are coordinated through interaction among actors in the network (ibid.). Studies

supporting this view on business networks see them as evolving organically and informal in their nature, almost as an unintentional phenomenon brought about through the existence of interpersonal relationships and circumstances (Chetty and Patterson, 2002). Actors within a business networks are dependent on each other's resources, experience a need to coordinate and adapt their activities, and thereby become interdependent (ibid.). Important to note, in regards to the creation and development of a business network, is that companies use networks of their current business partners in order to expand their own business networks. Through such 'bridgehead relationships' (Blankenburg Holm and Eriksson, 2000) companies gain knowledge of business opportunities. Furthermore, when a company with an already established reputation introduces and endorses a third party, a part of their reputation tends to rub off (e.g. Turnbull et al., 1996). Hence, the trust-building phase at the beginning of a relationship is shortened and gaining credibility towards new actors facilitated (Chetty and Patterson, 2002).

According to Chetty and Patterson (2002), the second perspective on business networks draws on a resource-based view of the firm (e.g. Barney, 1991) and advocates that companies participate in relationships and exchange resources with complementary companies in order to minimize threats that other

actors in the industry environment pose and to react towards dynamics within the broader macro-environmental thereby increasing their level of competitive advantage over other companies (cf. Ring and Van de Ven, 1992). In other words, it is companies' lack of resources that drives them to form relationships with companies of complementary resources (Reuber and Fischer, 1997). The strength of and type of relationships, e.g. expressed by the degree of adaptation of two companies, depends on the number of repetition of transactions within a relationship (e.g. Ring and Van de Ven, 1994). As argued by Chetty and Patterson (2002), an important implication of the resource-based view is that involvement in relationships is entirely voluntary and that companies consciously decide to participate with the aim to benefit from the transaction. As a result, networks have clearly defined boundaries - companies are aware of the extent of the network in which they are involved and know which companies impact upon them (ibid). Interestingly for this study, Chetty and Patterson (2002) show that companies can be engaged in a hybrid model of business networks, which combines some ideas from the business network perspective and some from the resource-based view of networks.

SMEs' Internationalization and Business Networks

Drawing on Zain and Imm Ng's (2006) thorough review of the literature focusing on the importance of business networks on SMEs' internationalization, it can be observed that research hitherto has described business networks as triggers for SMEs' internationalization (e.g. Sharma and Johanson, 1987; Chetty and Patterson, 2002) and as influential on firms' market-selection decision, entry-mode decision (e.g. Coviello and Munro, 1997), as well as on the pace and pattern of the process (e.g. Coviello and Munro, 1995; Jones, 1999). Business networks have further been described as an important tool to get access to new nodes in other networks or relationships (e.g. Björkman and Kock, 1995) and to local market knowledge (e.g. Larson, 1992; Coviello and Munro, 1995). Furthermore, the literature discussed not only business networks' ability to lower costs and minimize risk of internationalization (e.g. Coviello and Munro, 1995; Ellis and Pecotich, 2001; Chetty and Patterson, 2002), but also their importance as means to obtain credibility (e.g. Coviello and Munro, 1995; Turnbull et al., 1996; Chetty and Patterson, 2002). Important for this paper, business networks have also been shown to have a constraining impact on firms' future scope and market opportunity (e.g. Coviello and Munro, 1995). Coviello and Munro (1997) show that network relationships not only can drive SMEs' market expansion and development activities, including choice of market and entry

mode, but also facilitate and inhibit product development and market diversification activities.

In general, when discussing network ties, a distinction has to be made between weak and strong ties (cf. Granovetter, 1973). Sharma and Blomstermo (2003) perceive ties as weak when the amount of time, emotional intensity, intimacy, and reciprocity is low. Since weak ties among others connect distant and otherwise disconnected nodes, do not require a high degree of financial and emotional investments, and offer access to more novel knowledge, Sharma and Blomstermo (2003) argue that firms with a large number of weak ties enjoy an advantage over those that are engaged in strong ties.

Interestingly to note, as mentioned by Meyer and Skak (2002); as events in the network are generally beyond the control of SMEs - among others due to the fact that resources in the network cannot be managed to the same extent as internal resources - their strategies are subject to high degrees of serendipity, i.e. fortunate and unexpected discoveries made by chance. Then again, since a firm's ability to access resources and/or its ability to identify opportunities within a network are dependent on the firm's network position, the firm can by unconscious and/or strategic actions increase its chances to succeed with these endeavors, e.g. by investing in the network and continuously improving relations to existing network

partners that have been useful to the firm (ibid.). As mentioned in the introduction, in a similar vein, Johanson and Vahlne (2009) claim that internationalization is best understood as a by-product of efforts taken to improve a company's position in its network(s). Drawing strongly on a business network view, Johanson and Vahlne argue that the problems and opportunities of firms involved in international ventures are less a matter of country-specificity than of relationship-specificity. Rather provocatively, they state their belief that the problems and opportunities associated with foreign market entry are very much the same as those associated with domestic market entry. Whereas research - as shown above - has focused on business networks' importance for SMEs' internationalization since the late 1980s, more recently studies on a particular type of SME, i.e. international new ventures (INVs) have occurred (e.g. Sharma and Blomstermo, 2003; Coviello, 2006). The focus in these studies is predominately on network relationships as means to generate social capital - generated by social ties and/or business relationships - for INVs, which in turn might result in better access to resources and international opportunities, as well as in reduction of liabilities of newness and foreignness. An interesting study is presented by Chetty and Wilson (2003) who

found that INVs collaborate to access resources and enhance their reputation.

Network Creation during SMEs' Internationalization

Interestingly, as noted by Coviello (2006), in the literature various views on the degree of activity or intention of SMEs' network creation can be found. Among others, whereas Larson and Starr (1993) perceive INV to intentionally manage its network - relying on dyadic social ties with family and friends or previous contacts and first when business interests become clear also economic relationships - from the earliest stage of its life cycle; Hite and Hesterly (2001) see conscious network strategies first during later stages. Furthermore, interestingly to note is that in the literature commonly networks are seen as evolving as in a linear and predictable manner (Coviello, 2006). Other studies have shown that INVs follow a reactive approach (Sharma and Blomstermo, 2003) and or both pro- and reactive approaches (Coviello and Munro, 1997) when internationalizing. Coviello (2006) points out that these different findings might partly be explained by differences in nature (e.g. industry, technology) of the INV in question.

Loane and Bell (2006) found that in a greater numbers of cases that they studied; firms were building new networks rather than leveraging established ones; among others since

existing networks were redundant because the firms were working in innovative new niches. Also, network building activities were not just restricted to the first export market, but occurred also in later ones. As mentioned by Loane and Bell (2006), indeed, some of the early network partners often proved invaluable in entering later markets. As mentioned by the CEO of a Canadian firm that provided data mining and interpretation services for recruitment firms (in Loane and Bell, 2006, p. 478): *"Existing networks played no part, as we did not have any; we just went and found out who were the movers and shakers in the HR software market. Then we went after these people. Ok, we soon established relationships and networks, but we started off with zilch!"* Loane and Bell (2006) further report that firms not only build new networks, but also internalized new network connections by acquiring additional management team members.

Coviello and Munro (1997) describe the pattern of internationalization for small software firms. After that the SME has started its operations with the intent to internationalize, commonly an initial relationship with a larger firm is developed within one year. Such a relationship often starts in an opportunistic or reactive manner and usually for the purpose of product development; however, it also provides a mode of entry to a psychically close market.

Thereafter, over time, usually facilitated by this initial relationship, a network of formal and informal contacts is developed, which provides market knowledge and potential access/mode of entry to markets around the world. Relationships within this network facilitate international market development and sales growth (approx. two foreign markets in three years), which in turn leads to increased international visibility for the SME, as well as an increase in both financial and human resource capabilities. Eventually, managerial experience in international markets continues to increase, leading to greater knowledge and confidence in market and relationship decisions. At this point, Coviello and Munro (1997) observe that one of the two patterns might emerge. SMEs either begin to: (1) diversify from its core product areas; (2) proactively pursue new markets, and/or (3) establish its own sales and marketing offices overseas; or due to the major partners' power/control the above desires can not be achieved by the small firms.

Coviello's (2006) findings show that network relationships open doors for INVs by providing market access, financing, distribution channels, referrals and a pool of contacts for both internal and external development and therefore should be seen as important intangible resources. Important to note, however, is that Coviello (2006) - confirming the importance of early relationships for new ventures (e.g. Sharma and

Blomstermo, 2003) - shows that these resources are also the result of relationships existing pre-internationalization, pre-growth and even pre-commercialization, i.e. from conception. Furthermore, Coviello (2006) shows that no clear general pattern exists that explains the nature of ties in INV networks. Ties can be either social or economic, and either strong or weak - all types of combinations co-exist. Also, the attractiveness of certain ties (e.g. with a multinational partner) appears to enhance the legitimacy of INVs (ibid.)

Methodology

Due to the explorative questions asked in this paper, a case study approach was chosen (Yin, 1994). The case study - selected by convenience sampling (Merriam, 1998) - can be understood as an instrumental case study that provides insight into an issue and the refinement of a theory (Stake, 1994). As mentioned previously, the focus in this paper is on one very specific strategic move of the case firm - the creation of a Scientific Network. The empirical data for this episode is part of a broader case study on the firm's development and internationalization. The data used for the case was collected by different means as this is typical for the case-study research (Yin, 1994). Hence, the case is built on secondary information and not at least on interviews with all the

important decision-makers working in Q-Sense from 1996 to 2007. All in all, nine interviews¹ (lasting on average 90 minutes) with decision-makers in Q-Sense; of which some had left the company, were conducted. All interviews were audiotaped and transcribed. Inspired by an abductive research approach (Denzin, 1972), empirical evidence was confronted with the prevailing literature. Whereas this confrontation confirmed certain of the initial ideas, others were challenged. Moreover, the case story identified unexpected issues that in turn required additional analysis and resulted in new theoretical insights. This iteration between the empirical data and theory proceeded until a fit between the case story and the final conceptualization was reached.

The Case

Q-Sense, founded in December 1996 started as a spin-off of a research project of four researchers (Rodahl, Höök, Kasemo (professor at the department) and Krozer) at the Department of Applied Physics at Chalmers University of Technology in Göteborg, Sweden. Q-Sense develops and markets research instruments based on the patented Quartz Crystal Microbalance (QCM) with Dissipation Monitoring (QCM-D) technology. Since

¹ The study is retrospective in its nature, i.e. one where the informants have been asked through interviews to reflect on and talk about their experiences. However, through triangulation post-rationalization and individual forgetfulness could be exposed.

1999, when the first commercial system for measurements in liquid was launched (D300 system), Q-Sense has become the leading supplier of acoustic resonator based instruments for molecular binding events taking place on various surfaces. In 2007, Q-Sense instruments have been sold in over 25 countries world-wide and there are currently over 400 scientific publications citing the use of the QCM-D technology. Q-Sense has a subsidiary in the US, a well established distributor network in Europe and Asia and a second generation system on the market, the Q-Sense E4. In 2007, Q-Sense employed 20 people, had sold more than 150 instruments globally, and had 45 million SEK in sales (a growth with 50% in 2007). Production is outsourced.

During the period from its inception in 1996 to 2000 - when the story given beneath begins - Q-Sense struggled continuously with lack of not at least financial resources. Furthermore, the firm initially (again typically for many high tech niche companies) did not have any concrete idea of what the main application area would be. Q-Sense's understanding for the techniques' future potential application areas was broad from e.g. measuring the effects of radiation treatment of cancer cells to measuring harmful bacteria in food. Q-Sense tried to find customers anywhere - from companies within the pharmaceutical industry to actors within the plastic, polymer,

paper, and pulp industry. All were seen as promising. A manager remembers: *"As a matter of fact, everywhere we got a meeting, we went. With the benefit of hindsight, I would say that we discussed with too many potential customers. However, then again this was difficult to know then. It was a learning process to understand customers' needs and to identify application areas."* Due to the constant lack of financial resources, Q-Sense, however soon realized that it had to narrow this learning journey; i.e. needed to make decisions in regards to the future potential application areas.

After having received its first venture capital money in 1998, Q-Sense started to focus more on companies working within the polymer area (e.g. Akzo Nobel). Through these initial contacts and the reactions from other industrial actors (e.g. AstraZeneca), Q-Sense realized that working processes and not at least output expectations within the industry could not be met with the prototype-like instrument at hand. It became evident for Q-Sense that they could not win industrial customers at that moment of time. Q-Sense started to understand that they had to go through the academic customers first for which the value added by Q-Sense's techniques and instrument was more obvious. Employing Q-Sense's instruments and technology, academic researchers could get new research results that could not be reached previously. Thereby, their chances to

publish papers in scientific journals would increase, which in turn not only would be a push for the individual researchers, but also would make the research group/institution/university etc renowned. Interestingly to note is that academic customers' increased chances for publishing articles also had a positive effect for Q-Sense since these publications could be used as references in order to attract and convince new customers. Once Q-Sense had made the decision to initially focus on academic customers, the potential market became niched with only 15 potential customers in the Nordic countries. In the US; Q-Sense believed the market potential would be 1500 instruments; in Japan, 750 and in Europe 450. The company realized that they had to think global.

At the end of January 2000, Tengberg was appointed the new CEO for Q-Sense. At that time, Q-Sense had sold approximately 10 instruments to mostly other academic research institutes - all based on already existing relationships of the researchers (not at least Kasemo) behind Q-Sense. It had further started to work with a distributor on the UK market. Tengberg came from Nobel Biocare, where she started to work in 1988 and had worked up her way to the highest management level. As it was the case for Q-Sense - also Nobel Biocare tried to launch a new technology and was therefore very much depended to get important opinion leaders on their side (in their case dentists

etc). A manager reflects: *"Tengberg brought this experience with her and she knew that a new technology - not at least if it is not fully developed yet and thereby cannot be launched on the industry market - can successfully be introduced by involving important opinion leaders. Hence, in her initial analysis, she felt that we should do the same thing with Q-Sense despite of the fact that the company did not have the same financial muscles as Nobel Biocare."*

The overall idea with Q-Sense Scientific Network was to create a vibrant forum for the advancement of the QCM-D technique. Members of Q-Sense Scientific Network would preferably be active within different research regimes, but share QCM-D related issues. By exchanging experience all members would achieve a deeper insight in the interpretation of QCM-D measurements and learn about new measurement possibilities. When a new research technique is launched to industrial actors, the demand for validation and documentation is significant. Q-Sense believed that the future members of Q-Sense Scientific Network could significantly contribute in the validation process of the QCM-D technique. Moreover, Q-Sense experienced the need to have prominent actors within various research areas acting as spokespersons of the technique. A manager explains: *"We wanted to attract a couple of opinion leaders. We realized if I or someone other young, inexperienced*

person with a master of science from Chalmers says that Q-Sense has the best technology in the world - few would listen; however, if a well known professor from a prestigious university tells the same thing; this is something else!" Q-Sense further believed that a close connection between different research groups in the Scientific Network and with Q-Sense would have strong synergetic effects. Whereas Q-Sense would keep the research groups updated with recent developments of the QCM-D technique, Q-Sense would be updated of scientific trends and possible new areas of interest. One tool to facilitate such a transfer of knowledge would be through seminars where members present their QCM-D results and Q-Sense presents the latest development. Q-Sense also believed that an open dialogue regarding interpretation of measurement result and direction of Q-Sense's R&D efforts would be beneficiary for all involved partners.

Q-Sense made a screening: Who had published what? Which were the leading universities? Etc. Then they let Kasemo verify who was important to include. A manager remembers: "We looked closely at Kasemo's network - he had fantastic contacts all over the world. Within this network, we aimed to find our opinion leaders - they should missionize for us - these were our angels." Q-Sense also tried to have a good geographical spread among the members. Asia had to wait due to lack of

resources. Eventually, 11 persons/ research teams were identified. Another experience that Tengberg brought with her from Nobel Biocare was that it was important to reach the Ph.D. candidates working with the well known professors - they would be the potential leaders in the future. They are further also open for new technologies. Thereby, Q-Sense could make sure that the various research groups were engaged in their technology on a long term base.

Q-Sense put together an offer for the first potential members of the Scientific Network. As been mentioned: *"We needed their commitment, we needed them to publish. Hence, we wrote individual contracts with each of the members. How many measurements they were supposed to make; how many publications to publish; in what journals, if they could act as guest lectures at fairies and conferences etc. In return, they received a discount for our instrument and consumables."* Another manager remembers how the idea was developed: *"I will never forget this. Two of us went to Tengberg's summer cottage in Bohuslän and started to work out a concept for this. We put together an offer - how could we attract them? We gave them a discount on our product and appliances; we would have annual meetings where knowledge and experience could be shared. We simply wrote down what we can offer and what we would expect in return. Then we went out with the offer; and received a*

positive response. After a while we also offered some earlier customers the same terms - but overall we were relatively choosy - and wanted to keep the touch of exclusivity. All human beings - including high profile professors are conceited - it is simply flattering to be part of a very exclusive group."

In general - remember the contract were written differently for all the members, in the final proposed contracts, members were offered: (1) free technical and scientific support; (2) all present and future software free of charge; (3) meetings with other members arranged by Q-Sense; and (4) 40% discount on accessories including measurement chambers. In return, members were expected to: (1) Share their QCM-D know how and experience with Q-Sense; (2) Let Q-Sense use results and publications for promotional purposes; (3) Give input to future product development; and (4) act as references for potential customers.

Eventually in 2001, there were 10 members throughout Europe and North America; namely: Biophysical Chemistry, University of Groningen (the Netherlands); Institut Charles Sadron, Université Louis Pasteur (Strasbourg, France); CPIMA, Chemical Engineering, Stanford University (USA); Applied Physics, Chalmers University of Technology (Göteborg, Sweden); Max Planck Institute of Polymer Research (Mainz, Germany); Materials Science, National University of Singapore (Singapore); CBM, Chemistry,

Rutgers University (USA); Forest Products Technology, Helsinki University of Technology (Finland); Surface Science and Technology, ETH (Zürich, Switzerland); and Chemistry and Chemical Biology, Harvard University (USA). Interestingly to note is that all the initial identified candidates gladly accepted the offer. As it has been argued by a manager; *"this for me proved that this concept worked."* Q-Sense made sure that they had close contacts with the various members of their Scientific Network through e.g. annual meetings and further tried to make sure that they would keep their promises. A manager argues: *"The members of the Scientific Network were seen by outsiders as an exclusive club. We created a family-like relationship. They were almost Q-Sense. They felt as the chosen ones."*

Important to note is that many of the early sales originated from this initial network and that the network besides increasing Q-Sense's legitimacy and credibility also resulted in new contacts within the members' individual networks. A manager points out, *"the establishment of a scientific network was a huge success. This was a not a new concept in the industry, but it worked very well for Q-Sense: We were a small company and a well motivated gang. Maybe, others recognized themselves in us since we also came from the academic world."* Q-Sense tried to be commercially present at all the conferences

where professors from the network were giving presentations. Many leads and contacts emerged. Q-Sense suddenly had a much higher credibility since there were several well-known researchers who were using Q-Sense's technology. After a while, Kasemo started to 'not recognize' new customers anymore - for him this was proof that the idea worked. As been pointed out: *"Everything was about connecting our earliest customers close to us. They should work as ambassadors for us. The discussions with them helped us to speed up our product development process. To start a scientific network was a genius idea; first afterwards, we actually have understood how genius this idea was."*

Eventually, Q-Sense broadened this network concept and started to work with so called 'reference centers', i.e. on a lower level of exclusivity. The idea was to have at least one reference site -usually a top university in all the important markets. Also these research groups received some discount. In return, they were expected to welcome potential customers in their own countries and to present the technology and instrument; let them test the instrument. Also, they were assumed when publishing to mention the QCM-D technology. Also this move worked well, in 2007, the number of peer-reviewed papers with QCM-D results passed the 250 mark. The research fields covered include characterization of Biointerfaces,

polymer films and different aspects of nanotechnology. This was a clear proof of concept; a validation for that the QCM technology works well. Trust and confidence has been built. As mentioned by a manager: *"Today, when we receive a new inquiry, we can almost always and immediately send a couple of articles that are relatively close to the potential customers' research area. This of course shortens their decision-making process and thereby our sales process tremendously. Interesting to note is that this has also been important for our international growth. If we get an inquiry from Korea or South Africa; it does not really matter from where - as long as we have reference articles from well-known researchers."*

On December 1-2, 2006 in Boston, MA, Q-Sense held the first QCM-D World Conference, coinciding with the company's 10-year anniversary. The interest for the conference widely exceeded the expectations and a decision has already been made to arrange future, similar meetings. Biointerfaces, material sciences and nanotechnology were the main topics of the 24 talks, presented by QCM-D users from all over the globe. In addition, over 10 posters gave further insights into the world of QCM-D.

Reflections

As it is discussed in the introduction, a prevailing understanding in the literature focusing on SMEs' internationalization processes is that business networks are (1) important or even necessary facilitators throughout the process and that (2) these business networks are existing prior to the firms' internationalization. Also, (3) there are various views on how active and strategically intended SMEs as a matter of fact create business networks or try to get access to the latter. In the following paragraphs, these three aspects will be discussed by using empirical evidence of the case.

First of all, the case story in this paper evidently shows that the creation of the Scientific Network indeed was an important step for the company's internationalization, enabling Q-Sense among others a first foothold in France, Switzerland, Finland, USA, Belgium, and Denmark. As previously argued in the literature and as summarized in the literature review, the process leading to the creation of and the actual Scientific Network itself not only (further) triggered internationalization, but also influenced the decision on which markets to focus (i.e. where the opinion makers were located). It had an evident impact on the pace of the internationalization process (i.e. the process was accelerated) and without a doubt it can be seen as an important key or tool to get access to new nodes in other networks or relationships

(i.e. offering Q-Sense access to the Scientific Network members' networks both in the academia and the industry) and to local market knowledge (i.e. members acted as reference site in their countries/regions). Furthermore, by employing the various members of the Scientific Networks as "ambassadors" for Q-Sense, the involved risk for this form of internationalization was relatively low and except a certain support as well as price reductions cost little. Also, maybe most importantly, the Scientific Network increased the credibility of Q-Sense and its technology in an international context. Finally, as discussed in the literature, the Scientific Network had an impact on further product development (Q-Sense expected the members to be part of future product development).

Interestingly to note is that, drawing on the thoughts of Johanson and Vahlne (2009), the case clearly reveals that Q-Sense's strategic move to create a Scientific Network not only should be described with the exclusive objective to internationalize in mind. Indeed, it was Q-Sense's need to gain credibility for its technology - in order to as a matter of fact in the long run once more approaching industrial customers - that gave rise to the decision. Since credibility could be gained by engaging important academic opinion makers and those happened to be spread out all over the world, Q-Sense - as a by-product - internationalized its activities. Through the

members of the formed Scientific Network and in turn also their networks, internationalization continued and accelerated. Hence, using the words of Vahlne and Schweizer (forthcoming), internationalization occurred through activities aiming to develop and grow the business as such - internationalization was not necessary the objective per se. Indeed, when internationalizing - intentionally or not - what matters is access to relevant networks and not country-borders.

As the companies studied by Loane and Bell (2006), Q-Sense not only offered a new technology targeted at an emerging global niche market, but also constantly faced challenges to attract enough financial resources. Interestingly to note, however, is that the firm did not see its market as niche or global from the beginning at all. It was first when Q-Sense realized that it would not be able to meet the requirements from potential industrial customers, the market became very niched and global. Hence, regarding the second prevailing assumption mentioned above, the case shows that Q-Sense after somewhat reluctantly having realized that the company needed to first focus on the global academic market, as a matter of fact had access to the adequate network. As it could be seen, not at least Kasemo - one of the founders - had an incredible network within various fields of the academia. These relationships were social ties and weak in its nature - i.e. amount of time spent,

emotional intensity, intimacy, and reciprocity was low (cf. Sharma and Blomstermo, 2003). Hence, as the case shows in order to be able to take advantage of these weak ties, Q-Sense needed to transform those into more formalized and strong ties through the creation of the Scientific Network. In the line of Larson and Starr (1993), Q-Sense's business focus had become clear and now the firm started to emphasize on economic relationships, however, build on previously existing social ditto. In other words, interestingly, the case demonstrates that it is not enough to have potential access to relationships/networks, i.e. contact to various nodes of networks; the firm also needs to actively bring those together. In other words, when trying to understand how and if SMEs actively create or try to be part of a business network - using it as a tool for internationalization - the question is not only if the firm has the relevant business relationships/networks or not, but rather if the firm is capable to either create those and even more importantly - when existing - to use them properly.

Sharma and Blomstermo (2003) argue that firms with a large number of weak ties enjoy an advantage over those that are engaged in strong ties. In the case studied in this paper, this argument is partly confirmed. Indeed, for Q-Sense the numerous already existing weak ties to important opinion leaders - again mostly through Kasemo's large personal network

- was an important prerequisite for the forthcoming success of the Scientific Network. However, as the case reveals, the transformation of this informal, organically grown network, into a more formal shape was an important step to be taken in order to in fact be able to make use of the members' reputation, knowledge and networks. Hence, whereas weak ties are of importance for identifying business opportunities (e.g. her to create a Scientific Network), when trying to exploit the opportunities (here to gain credibility) strong ties are important.

As mentioned by Meyer and Skak (2002), Q-Sense needed to invest in already existing relationships, thereby intentionally transforming them into a vivid business network. In contrast to the arguments made by Loane and Bell (2006), the case provokes the statement that the emphasis should not only be on the existence of relevant or irrelevant networks, but rather the focus should be on SMEs' (dynamic) capabilities to use already existing relationships - their ability to transform and create networks. Thereby, also the pre-internationalization stages become of interest. As pointed out by Coviello (2006), if the early mobilization of INVs is facilitated by network relationships, it is reasonable to assume that such ties emerge pre-internationalization.

Interestingly to note in the case is that the new CEO of Q-Sense had an important impact for such a transformation. It was her experience from her previous position at another company that faced a similar situation as Q-Sense that inspired Q-Sense to create the Scientific Network. Hence, the case serves as a good example for the importance of (new) professional managers during the internationalization process of SMEs by introducing new strategic thinking, knowledge and experience (cf. Chandra et al, 2009). The case also serves as a good example for the arguments made by Johanson and Vahlne (2009) on liability of outsidership. When Q-Sense tried to market its instruments to industrial customers initially, the market was more or less so limited to the Nordic countries or maybe even to the Swedish home market. Q-Sense did not have access or relationships with foreign actors within the industry. It suffered on the liability of outsidership. However, once the company was forced to change focus back to the academia, suddenly Q-Sense once more could make and also did make use of its - maybe most valuable resource - i.e. strong and relevant relationships to important actors within the global academia.

Also for the third topic - the question of how active SMEs are in the creation or accessing business networks - the case offers interesting empirical evidence. On a first sight, Q-Sense very actively and intentionally created the Scientific

Network. However, as will be discussed more in detail beneath, this is only partly true. If we focus on the creation of the Scientific Network in a vacuum, i.e. without considering the previous events in Q-Sense's attempt to grow, the move seems to be strategically and intentionally planned as well as implemented. However, the case evidently shows that the creation of the Scientific Network is an outcome of the learning journey that the company went through and that ended with Q-Sense realizing that the firm had to target a global niche market. Furthermore, it was a market to which the various researchers behind the company - and not at least Kasemo - had an important key; i.e. personal relationships with opinion makers all over the world. With the creation of the Scientific Network, Q-Sense to a certain extent formalized already existing social, personal relationships with other actors within the academia. It transformed already existing weak ties into strong ties. In other words, whereas the already existing relationships with other actors within the academia can be described as organically developed, informal in nature brought about through interpersonal interaction (cf. Johanson and Mattsson, 1988), with the creation of the Scientific Network, those were converted or used as the building blocks for forming a more formalized network (cf. a resource based view on networks) with the aim to make use of the others' reputation

and to gain credibility, as well as access to the others' networks.

The case confirms the findings made by Chetty and Patterson (2002). Also Q-Sense's Scientific Network is an example for the existence of a hybrid business network; thereby combining some ideas from the business network perspective and some of the resource-based view of networks. Whereas the creation of the Scientific Network has been planned and implemented; the trigger and its outcome is still very much based on interpersonal relationships and on leveraging contingencies. Furthermore, the Scientific Network is obviously formal in its nature, with very clear borders showing who is in and who is not, however, the activities within are not fully under the control of Q-Sense. Also, whereas Q-Sense approached the potential members of the Scientific Network with the clear aim to get access to their resources - i.e. reputation, thereby following the ideas of a resource-based view on business networks, considering the events prior to the decision to create the network, the latter's evolution is clearly organically brought about through the existence of interpersonal relationships and circumstances.

Conclusions

The purpose of this paper has been to contribute to the research on SMEs' use of networks when internationalizing by studying a case where the SME purposefully created a business network, which subsequently facilitated the firm's internationalization. As the reflection section above revealed, indeed also this case clearly shows that networks are of importance for the studied firm's internationalization. However, the paper also argues that research should more carefully focus on the actual reason behind the creation of networks. Here, the reason was to reach credibility; hence, internationalization was a by-product of the firm's strives to grow. As sketched by Johanson and Vahlne (2009), this view of internationalization as a by-product of firms' common strategies for growth would increase our understanding of the internationalization process and deserves more research. The paper further argues that when explaining the importance of networks on SME's internationalization, the focus should not only be on if the firm has access to adequate networks or not, but also on the necessary resources and capabilities in order to alter existing adequate relationships. As the discussion above showed, to have access to passable relationships is not a sufficient precondition for internationalization; they might need to be altered, e.g. formalized. Also this discovery deserves further research. Furthermore, as we could see, the

paper confirms the findings of Chetty and Patterson (2002) on hybrid business networks, however adding a time dimension. Also, the paper raises another important question to be answered in future research: What determines the way how firms use business networks as a tool for their internationalization; is it the overall strategy of the firm or the accessible relationships/networks? This question might be answered by using the distinction on decision-making given by e.g. Sarasvathy (2001). Sarasvathy distinguishes between a causation view and the logic of effectuation. In contrast to causal logic, effectuation rationality lies in exercising control over what can be done with available resources, rather than optimizing decisions about what ought to be done given a set of predictions about what will happen next (ibid.) Finally, drawing on the thoughts of Coviello (2006) who argues that when trying to understand the creation of networks as a facilitator for INVs' internationalization, emphasis should be put on relationships and networks prior to internationalization, including pre-founding, the paper suggests that the more recent literature advocating a path dependency view in International Business (e.g. Hutzschenreuter et al, 2007) is an important key to improve our understanding on how SME as a matter of fact make use of networks when internationalizing.

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