

THE INITIAL FORMATION OF BUSINESS NETWORKS: HOW TO CAPTURE THE PROCESS OF STRATEGISING

Competitive paper

Special track: Time and process in business network research.

Lise Aaboen¹, Anna Dubois², Frida Lind³

^{1 2 3}*Department of Technology Management and Economics
Chalmers University of Technology
SE-41296 Göteborg, Sweden
Phone: +46 31 772 10 00
E-mail: lise.aaboen@chalmers.se
E-mail: anna.dubois@chalmers.se
E-mail: frida.lind@chalmers.se*

Abstract

This paper discusses how network pictures can be used as a methodological tool to capture the process of strategising over time. The aim of this paper is to identify ways to capture the process of strategising based on how the networking of companies interplays with their ideas of future network positions. We use three cases of start-up companies to elaborate on strategising and the initial developments of their networks. The strategising involves changes in three related dimensions: (1) the business relationships, (2) the connections between business relationships, and (3) the companies' products/offerings. We suggest that the interplay among the developments in these dimensions and the parallel development of ideas of future network positions are interesting to analyse in order to identify strategising patterns over time as the companies and their relationships and networks develop. To conclude, we suggest network pictures as a longitudinal case study approach to capture the developments over time as the network boundaries expand.

Key words: Strategising; network pictures; methodological tool; time; network position

INTRODUCTION

Strategising in networks is a critical concern for companies. From a research point of view the issue of how to capture these processes of strategising is a related critical concern. This paper suggests network pictures as a methodological tool for capturing such processes. The paper builds on the IMP approach and strategising is understood in relation to firms and their interaction in relationships as embedded in networks (Johanson and Mattson, 1992). According to Håkansson and Ford (2002, p. 134): *"...no one interaction, whether it is a sale, purchase, advice, delivery or payment can be understood without reference to the relationship it is part. Similarly, no one relationship can be understood without reference to the wider network."* Strategising can thus be seen as related to interdependence and interaction in business networks, which gives both opportunities and limitations (Gadde et al., 2003). There are opportunities for innovation in combining the resources of the firm with those of other firms, but the resource dependence between firms also constrains change.

One of the key notions that we draw on in this paper is network pictures (see e.g. Ford and Redwood, 2005; Leek and Mason, 2009). As 'mental pictures' of their networks these may influence the strategising of companies. Welch and Wilkinson (2002) use the term 'ideas' to describe how managers create an understanding of and make sense of relationships with other organisations and wider networks and over time. These ideas are confronted with other ideas and contribute to network development.

Time is central to network pictures and ideas of networks and can be viewed in many ways. Orlikowski and Yates (2002) suggest that time is experienced through a process of temporal structuring, meaning that the temporal conditions are constructed and reconstructed by involved actors. Butler (1995) discusses timeframes as affecting decision making and learning processes. According to this view, the present events are interpreted based on knowledge of the past that is also used for envisioning the future. In line with Butler (1995) we focus on how companies' initial interaction and networking influence and is influenced by their ideas about their future networks.

Focusing on newly started businesses, we assume that the ideas about a future position in the network are formed by the interaction within their first business relationships and that these ideas about an aspired network position change over time as a result from continuous interaction with the initial customers and other counterparts. The aim of this paper is to identify ways to capture the processes of strategising based on how the early interaction and networking of start-ups interplays with their ideas of future network positions. In short, this paper concerns ways to capture companies' strategising in networks. We thus contribute to a call made for additional research by Welch and Wilkinson (2002) of how mental maps affect firm behaviour and how they are interrelated to issues such as how they develop their goals. Moreover, our discussion of strategising in relation to past, present, and evolving goals can help marketing scholars to enrich their case study research by a stronger involvement of time as encouraged by Quintens and Matthyssens (2010).

We build on a study of newly formed companies, so called start-ups, typically beginning their 'life' with limited resources and few contacts and business relationships (Aaboen et al., 2010), and focus on their strategising. Strategic action in networks concerns how to build relationships and influence others in the network, which points to strategising as being especially challenging for start-up companies. Some previous studies of start-up companies have also put an emphasis on their initial networks (Hallen, 2008; Hite, 2005; Yli-Renko and

Janakiraman, 2008; Ozcan and Eisenhardt, 2009). For instance, Hallen (2008) focuses on how start-ups develop their initial network positions as a basis for future networks. In an inductive study of six start-up firms in the wireless gaming industry Ozcan and Eisenhardt (2009) found that firms could develop 'high-performing portfolios' by advocating unique industry architectures in order to motivate multiple types of firms to form ties with them. Both these studies build on the notion that network theory has overemphasised '*the degree to which network structure constrains human agency*' and that it is possible to '*maneuver within networks and be inventive and reflective in their network actions*' (ibid., p. 247). The initial work in the form of three case studies of start-up companies and their strategising are presented in the paper. The cases include descriptions of networking processes that result in certain network positions, which in turn are influenced by interaction with their current counterparts, and so on. This enables analysis of their strategising in terms of development of business relationships, development of product offerings and of direct and indirect connections between their business relationships. The variety among the strategising aspects in the three cases is used as a starting point for discussion of how strategising patterns can be captured over time and across the cases.

In the next section we present some theoretical assumptions and concepts concerned with strategising in networks as a basis for furthering the ideas of how start-up companies' strategising processes can be studied. In the third section we discuss network pictures and the principles of the case illustrations chosen in order to capture the phenomenon based on the theoretical assumptions and concepts. In the fourth section we present the cases and case illustrations. In the fifth section we discuss the cases and case illustrations. In the last section we discuss network pictures as a methodological tool and suggest a way to continue on the particular study of the strategising processes of start-up companies as well as that of using network pictures as a methodological tool for longitudinal case (and cases) studies.

STRATEGISING IN NETWORKS

Until recently, strategy has not been a central (explicit) concern in industrial network studies. In contrast to strategic management literature that focuses on competition, strategic action in a network perspective concerns the efforts of a firm to influence its position in the network in which it is a part (Gadde et al., 2003). Building on the suggested paradoxes of managing *in* networks (Håkansson and Ford, 2002), Gadde et al. (2003) identify three issues of strategising in networks. The first strategising issue is suggested to be that of building appropriate levels of involvement in relationships with individual partners such as customers and suppliers. The second issue for strategising is about finding a balance between trying to influence others in the network and that of being influenced by others. The third strategising issue concerns finding a balanced ambition regarding control in the network. Hence, from a single company's perspective, business relationships with other actors in the network are central in their strategising. The relationships may be direct, i.e. with customers, but also indirect relationships, e.g. with a customer's other suppliers or a customer's customer. The subject(s) of business exchange, i.e. the product or offering, is a vital part of the relationships and may to different extents be developed in interaction with the customers and/or other parties.

A network position is defined by the relationships a company has with other companies (Johanson and Mattson, 1992), i.e. the position is defined by the relationships that a firm is involved in at a certain point in time. However, as a vital part of dealing with the strategic

issues above the ideas of an aspired future network position is also of interest when strategising is concerned.

No actor has a complete view of the network but all actors need to interact and learn from others in order to create their network pictures (Holmen and Pedersen, 2003; Håkansson et al., 2009). Hence, the ideas of a future network position can be assumed to be influenced by interaction within the relationships that the company develops. The learning achieved through interaction with the first counterparts of a start-up company can thus be assumed to have a salient impact on how they form their ambitions in terms of a future network position, which also relates to how they try to develop their resources: *“Learning improves the opportunities to utilise the complementary resources brought into the relationships with the different actors and enhances the value of the resources, compared with situations in when they are employed in isolation”* (Gadde et al., 2003, p. 359).

As part of the ‘technical’ resources involved, the product offerings subject to exchange in the business relationships (Håkansson and Waluszewski, 2002) is a key aspect with regard to the strategising both on the relational level, i.e. as part of the content in business relationships, and on the network and network development level, e.g. how and to what extent product features are exploited and explored across the range of business relationships over time.

To capture the process of strategising of start-ups in terms of how the initial networking interplays with their ideas of the future network, we identify two broad research issues:

- (1) *How do start-up companies strategise with regard to business relationships and their contents?*
- (2) *How do start-up companies strategise with regard to connections between business relationships?*

The reminder of the paper is concerned with *how* to approach these research issues in view of the time and process aspects inherent in strategising. Hence, the main ambition with the analysis is to elaborate on how network pictures can contribute to studying the process of strategising. In the next section we focus on how network pictures may be used as a tool in these efforts and how network pictures are perceived and can be ‘designed’ to address the specific research issues.

NETWORK PICTURES AND PRINCIPLES OF THE CASE ILLUSTRATIONS

NETWORK PICTURES

During recent years there has been a huge interest in exploring the use and importance of network pictures among scholars in the IMP tradition (see e.g. Ford and Redwood, 2005; Henneberg et al., 2006; Leek and Mason, 2009). Ford et al. (2003, p.176) present network pictures as *“the views of the network held by participants in that network”*. Geiger and Finch (2010) suggest that the drawing of network pictures may simplify complex business settings as well as shed light on temporal and spatial dimensions compared to linear measures. In some studies managers have been asked to draw their pictures of the network as a tool in order to visualize the company in relation to the network (cf. Leek and Mason, 2009). A network picture is thus a subjective picture of the world surrounding a company and all actors in a network have their own picture. According to Håkansson et al. (2009, p. 194): *“Each manager has their own subjective interpretation of the world around them and of the*

interactions taking place within it, whether or not they are involved in them“. As an example, Ford and Redwood (2005) studied Booth who included the entire leather industry in their network picture instead of limiting their network horizon to shoe manufacturers. Hence, the network picture concept could be seen as a “tool” that managers use to create their view of the environment.

Early inspiration for the concept of network pictures can be found in managerial cognition, organisational behaviour, network horizon and network context (Leek and Mason, 2009b). Network pictures can be applied at various levels, for instance on the industry level, on the firm level for describing a firm’s strategic positioning within its focal network, or in relation to a make/buy decision or on the relationship level (Leek and Mason, 2009). According to Öberg et al. (2007), network pictures are mainly describing actors, activities, resources, network boundaries, network power and network centre/periphery. Previous studies of network pictures have been made for different reasons and have taken their starting points in different perspectives. For instance, the study by Leek and Mason (2009) focused on a company’s employees’ perceptions of a supplier relationship. As another example, Aune et al. (forthcoming) studied the network picture congruence of two companies involved in a buyer-supplier relationship.

Taking a starting point in the general ideas of network pictures we intend to elaborate on the potential use of network pictures as a methodological tool for analysis of strategising and networking over time. In this endeavour we will also draw on the suggestion that network pictures influence companies in their strategising: *“Such pictures reveal companies’ perception of what is happening around them, and guide in assessing usefulness of various actions and reactions they may undertake”* (Aune et al. forthcoming). Moreover, Aune et al. argue that a company’s network picture is conditioned by its relationships and positions held in the network. However, network pictures as methodological tools and as ‘mental pictures’ of managers differ in logic since the first notion is based on, or framed by, particular theoretical interests and understandings while the latter is empirically grounded (based on managers’ perceptions of their networks) and thus may include other aspects. We will come back to this duality in the concluding discussion.

Next we will discuss how to design network pictures with the particular aim to capture start-up companies’ strategising processes with a focus on development of products, business relationships and connections between relationships.

NETWORK PICTURES TO CAPTURE THE STRATEGISING OF START-UPS

From the literature on strategising in networks, we have identified two broad research issues focusing on business relationships and connections between business relationships. Based on Håkansson and Waluszewski (2002), products are viewed as objects of exchange in business relationships. Hence, we need to be able to capture these basic dimensions or building blocks to illustrate the strategising in networks (see Figure 1).

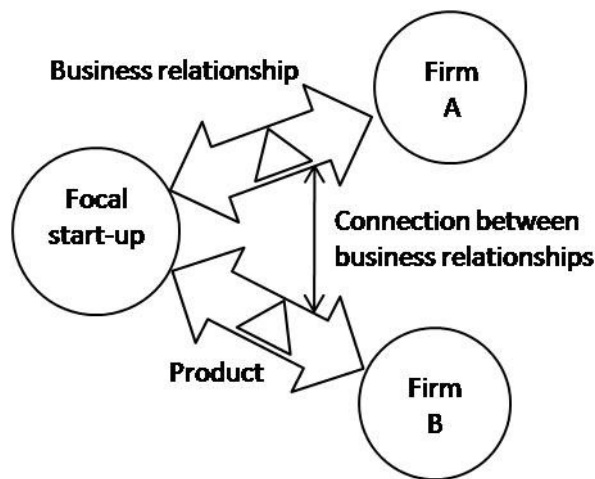


Figure 1: Business relationships, connections and products: Three main building blocks of network pictures.

In more detail, the three dimensions come in different forms. The intensity of a business relationship can vary and the product, as an essential part of the business exchange, can be subject to more or less interaction within the specific relationship. The products can hence be pure standard products or complex product offerings including a set of services and customer specific solutions requiring extensive adjustments at both the start-up and its customer. The connections between business relationships can also be of very different natures and might be ‘general’, in spanning several relationships in similar ways, or highly specific to two or more relationships and the exchanges totally dependent on what happen in the connected relationships (Aaboen et al., 2010). They may also be either direct or indirect connections of certain dimensions of the relationships. Hence, the network pictures need to permit or support descriptions of variety with regard to business relationships, connections and products.

The case descriptions are based on secondary information about the companies such as homepages, documents received from the firms and articles in morning papers and business press. Interviews were conducted with their CEOs and/or marketing managers since they had often been the only employee of the firm in the beginning. The interviews were primarily focused on how the companies’ developed their first customer relationships, but they also included information about other relationships and products. In order to capture the time dimension the CEOs were asked to tell the story of the development of their firm and questions were then asked in order to probe for additional information regarding the different activities that took place as well as their thoughts of the activities when they took place. When the stories had reached the present time, questions were also asked about their expectations on the situation two years ahead in time in order to discuss the present plans of the firm and to see the development from the original plans of the firm compared to the present. Actually, it was the initial analysis of the cases that spurred the idea for the present paper. In contrast to a neat development where customers entered the scene sequentially there were many parallel developments and the initial plans were often changed when the firm started to interact with their initial customers. So far, the network pictures and how they relate to strategic ideas and actions are based on our interpretations of the interviews. The three start-up companies are briefly described in Table 1 below.

Table 1: Cases of the initial business networks of start-ups used as illustration.

Start-up	The M company	The OC company	The NC company
<i>Year of founding</i>	2000	2006	2005
<i>Location of firm</i>	In an industrial area in a neighbouring municipality to Gothenburg.	Science Park in Stockholm.	Central Gothenburg.
<i># of employees</i>	9	7	22 of which 10 in sales, 6 in product development and the rest in administration, support, marketing and the CEO.
<i>Type of product</i>	Standardised component as part of a new food packaging method/system.	Customised organic chemical products based on knowledge of organic catalysis.	Software to identify child pornography.
<i>Current financing of the firm</i>	Selling products to customers. Turnover of SEK 35 000 000 in 2008.	Customer financed development projects. Private capital from investors. Research funding from a Swedish funding agency.	Turnover of SEK 500 000 in 2008 from selling products to customers. Still have venture capital left unused in the firm.

Next, we will present the three cases describing the companies' first steps to develop their network positions.

CASE ILLUSTRATIONS

THE M COMPANY

The product of the M company is ‘a method’ of packaging food that is ready to eat after having been warmed up in a microwave oven, including a particular patented valve that is part of a packaging system. The food to be processed is cold but not frozen. The customers of the M company need to invest in an entire packaging line and to buy the trough, plastic covering film and the valve for each food product from the M company. Hence, the sales of the M company are directly related to the quantity of packages that the customer produces. The only part of the system that is developed and produced by the M company is the valve.

In order to use the valve when packaging their products, the customer needs an entire production line consisting of a filling part where the application of the valve is integrated, a microwave tunnel and a spiral fridge. Moreover, specially developed troughs are needed as well as plastic covering film. The machine that takes care of the filling in the production line is supplied by an Italian firm. In collaboration with the M company they have integrated the step where the valve is placed on the package in their machine. Similarly, the M company has a close collaboration with the manufacturer of the specific microwave tunnel that has to be used for their process. The M company and the tunnel manufacturer even install it together and have learned about this process together with the first customers. The spiral fridge producer is also an important supplier as well as the producer of the films to be put on top of the trays. Furthermore, together with a Danish tray manufacturer the M company has been engaged in a long development project in order to find the best shape for the tray that would make it look good also after it had been subject to vacuum. We will refer to these companies as ‘suppliers’ although they may have different roles in relation to the M company in different customer relationships.

The customer either buys the entire package through the M company or, if the customer is a large firm, they negotiate with the suggested other suppliers individually. The M company is dependent on good relationships with the other suppliers in order to ensure integration between the different parts. The suppliers collaborate with the M company in order to adjust their parts of the system to the valve as well as to the particular customers’ needs.

Figure 2 is an illustration of the development of the business network of the M company with important stages of network development to the left. The M company’s ideas of strategic action that was formed in the particular (network) situation is described to the right.

Initially, the M company did not have a functioning product. However, they had developed relationships with some suppliers and venture capitalists. Furthermore, they had developed a relationship with an international corporation that had approached them after finding out about the venture capital investments in the firm. During the interaction with the first two potential customers, both of them large food companies, the product (valve) became ‘fully’ developed. The initial idea was that the customers involved in the development process would also buy the finished product. However, that did not happen but the relationships still became important for the M company: *“It would have taken a longer time to develop the product if we would not have had that push from them and they did after all pay some money for it.”*

The M company was able to initiate relationships with its two first (paying) customers C1 and C2 based on ‘connections’. C1 had a relationship with one of the firms mentioned above. A key person, a chef, had been engaged by one of the potential customers in order to develop suitable recipes for the new technology. As a chef he could see the potentials in the packaging

solution and in cooperation with the potential customer he started a new company, C1, in 2005 to produce and sell ready-made high quality meals in a new chain of food shops. The relationship with C2 was also established in 2005 and was initiated as a result from a connection to one of the board members of the M company. C2 has relationships with national retailers and potato suppliers in the Netherlands.

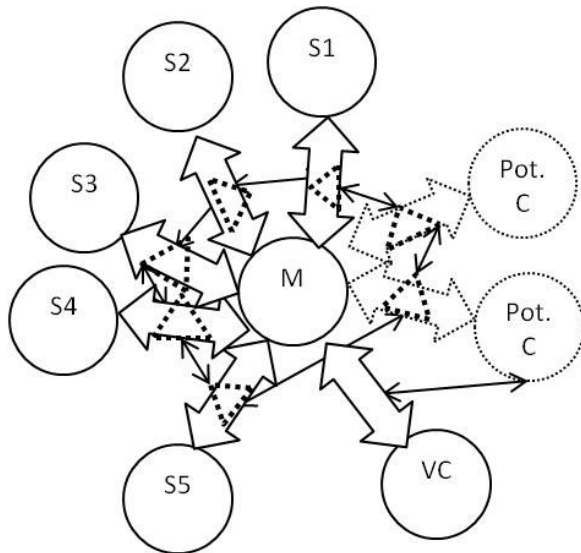
With two customers and a product, the M company envisioned that they would maintain the relationship with the suppliers and that they together would find additional potential customers to approach. They had also realised that the recipes and, hence, chefs were key to succeed with the customers. Therefore the idea of what potential customers to approach was changed from ready-made food producers in general to high quality ready-made food producers.

The third customer, C3, is a Norwegian company and the first potential customer that the M company approached that actually became a customer. Bringing packaged food produced by C1 to the first meeting was important to get the discussions going. The fourth customer, C4, is a large Finnish food firm that approached the M company themselves. Finland's most famous chef is working in the company. The fifth customer, C5, is a Dutch firm originating from a potato supplier that C2 had a relationship with.

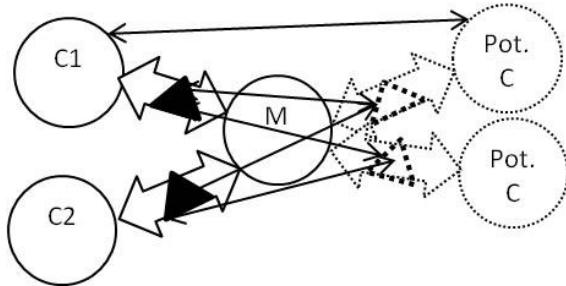
By now, the M company also started to realise that they were not able to overview 'the market' themselves in order to know who to approach and when. Furthermore, the customers were likely to know more about the product in large production settings than the M company. Therefore, they figured that the larger and better their network would be, the better the sales would develop since they would be able to find customers and provide knowledge with the help of their network. Following this vision, the M company started to mediate contacts between its customers. Moreover, new relationships with two American firms were initiated and contacts were mediated so that they were able to visit the production sites of the Norwegian and the Finnish customers. The Dutch customer was bought by a larger firm that was part of a German umbrella organisation and that organisation is seen an opportunity to make the product known in other European countries. Moreover, a relationship was initiated with a Japanese firm. Japan was approached since it is a country where people are used to eat comfortably. However, Japan is also seen as a starting point in Asia that could lead to business in China and South Korea. The M company therefore thought that in addition to having a network of customers that are connected to each other it would be good if there was one key customer in each country. Simultaneously, the M company had started to realise that they were approaching a 'limit' in terms of how many customers they were able to handle given their current size.

Early on the M company had given their customers exclusive rights on a national level and now the national division was seen as another way to ensure that the customers were not planning to compete with each other. Furthermore, countries are very different when it comes to eating habits and the packaged food will be different depending on country.

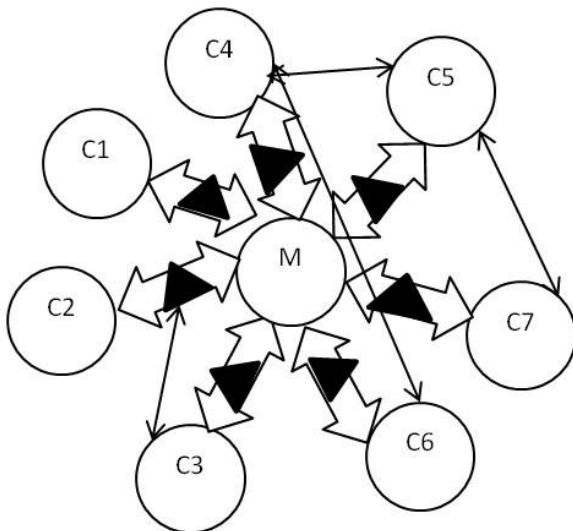
Towards the suppliers, the M company tried to strengthen the relationships by using the same suppliers for all customers. In that way the supplier can be sure that if they generate an additional customer for the M company, they have also generated an additional customer for them. The M company hopes that will make the sales staff at the suppliers more willing to promote the M company's solution when they are interacting with their customers.



The initial strategising focus of the M company was to develop the product in order to work in relation to the other suppliers' (S1-S5) products and to the customers' products and production processes. The dotted lines of the products illustrate the mutual adaptations with the products of the suppliers. Potential customers are drawn with dotted lines, VC illustrates the venture capitalist.



Since the sales of the M company depends on the success of their customers it was early a strategising focus on developing additional customer relationships with ready-made high quality food producers. In this way, they could interact with chefs at the customers when they developed suitable recipes for the packaging solution.



When the M company discovered that their customers knew more about their product, their strategising focus became to strengthen the customer relationships by connecting them and strengthen the relationships with suppliers in order to encourage them to refer customers. Thereafter, the M company saw the effects of their strengthened relationships and changed their strategising focus to growing by developing one key customer relationship in each country.

Figure 2: Network development and strategising of the M company.

THE OC COMPANY

The OC company was founded in 2006 and is built around research in organic chemistry and more specifically in organic catalysis at the Stockholm University and the Swedish University of Agricultural Sciences. The knowledge is used to attach molecules to cellulose materials, e.g. different types of paper, textiles and non-woven, to create certain features of the materials, such as water resistance and mechanical properties. This is all done in an environmentally friendly manner based on natural catalysis from fruit and plants but not only that, it is also argued to be more cost effective compared with other methods. The OC company started with a patent on functionalising of cellulose, and has filed for another four related patents. The origin at the universities and the continued relationship with them was and is still central for the OC company since it gives access to certain equipment and information about ongoing research projects of relevance for the company.

The ambition has been to build a company relying on private capital (no venture capital) and customer financed development. In 2006, the company had one employee, the CEO, while in 2008 the company had seven employees who were mainly working with laboratory work connected to different customer projects. Funding has also been received from the Swedish Agency for Innovation to commercially develop products from the research-based knowledge.

The OC company started to think in terms of developing a 'customer portfolio' strategy with customers in different parts of the 'value chains', or stages of refinement, of cellulose products. It was not clear where in that chain the products could best be applied from a technical and business point of view. During the autumn 2006, the CEO of the company made a number of 'cold calls' to potentially interesting customers. Out of these, three came to a deal of starting pre-studies in the spring 2007. We will refer to these as C1, C2 and C3. None of them knew about the others. Later on also a fourth customer, C4, signed a pre-study deal based on the initial contacts.

Today the OC company has seven customers in different stages of a 'three stages model': First, *pre-study/lab tests*, where the basic product features are developed in interaction with the customer. Second, *pilot tests*, in which the product is further developed in interaction with the customer in the customer's pilot plant. Third, *full scale industrial testing*, where the product features are developed in the customer's production plant. In total, ten products have been tested. Two did not work out well enough and these projects were then ended. The OC company takes the cost for the lab tests, while the customer pays for the pilot and full-scale tests. The substances needed to perform the tests are standardised and the quantities are small and bought from suppliers without much interaction.

C2 is a Swedish paper manufacturer and mainly interested in using the new technology for water resistance features. Today, the OC company and C2 are jointly working with a pilot study performed in a small paper machine with a paper breadth of one meter. In this machine they have come to conclusions as to where in the paper manufacturing process that it is appropriate to add the fluid of organic catalysis. Hence, C2 is working in a very structured manner and has e.g. a pilot set up that is very useful for running tests. C2 is considered to be very skilled and the OC company has learned a lot about the process of paper manufacturing and has been able to use this knowledge in relation to other customers, e.g. C4. The relationship with C2 has over time developed to become more complex and also to include interaction with the customer's customers.

C4 is a French company that develops and manufactures plaster boards. A plaster board has a paper sheet on each side of the plaster and C4 was interested in developing three different

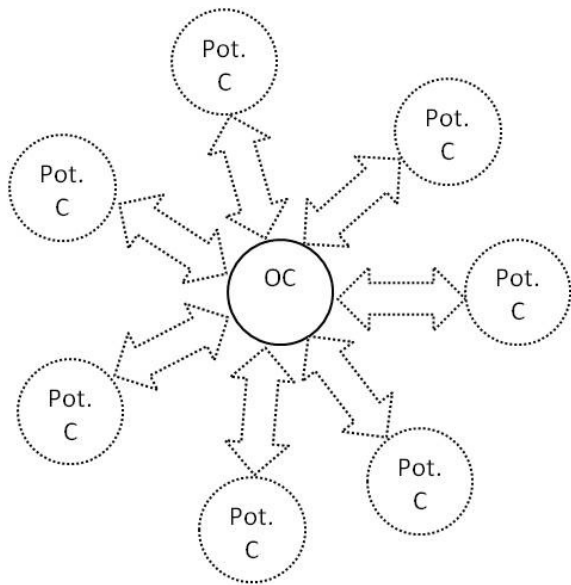
features of the paper. Developing paper is not the core of the activity of C4 but still important and they own several paper mills. One of the mills is located in the middle of Sweden and at this mill, the OC company has managed to perform their first full scale tests, mainly based on what they learned in interaction with C2. At C4 they went directly from the pre-study lab tests to full scale testing, partly due to that this customer did not have a pilot machine to use.

Normally there are long testing projects for this type of development, around two years from initial pre-study tests to a customised commercial product. One exception is a Spanish fabric manufacturer, C5, where the project only took around one year. The reason for the short time in this case was related to that OC could reuse parts of a product that they had developed for a paper manufacturer and adapt it to the textile application. In addition, the fabric manufacturer uses many but small lines, which facilitated the testing process.

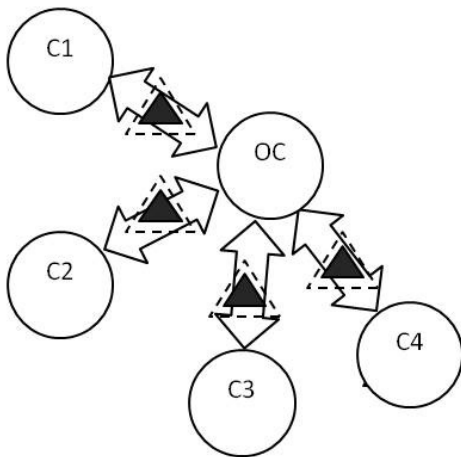
While the OC-company's growth ambitions were initially focused on adding to the number of customers they have changed their focus through interacting with their first customers. Based on these experiences and by getting to know the customers' business contexts, the OC company has come to the conclusion that it is possible to grow extensively by developing many more products for each one of the customers. Hence, instead of aiming primarily for developing more customer relationships, they now intend to grow within each relationship and to develop more products together with its existing customers. Since the interaction needed to learn about the customers' needs, their production processes and their customers is extensive this also enables the OC company to make more use of these efforts.

In addition, the OC company have realised that although each of the products developed is highly specific to the particular end-product and production facility there are possibilities to use knowledge about product features in a systematic way across the customer relationships as in the example of C5. However, although these connections are of great importance for the OC company to develop their knowledge about the product and how its features interact with different paper and textile qualities and production processes, there are no direct contacts between the customers.

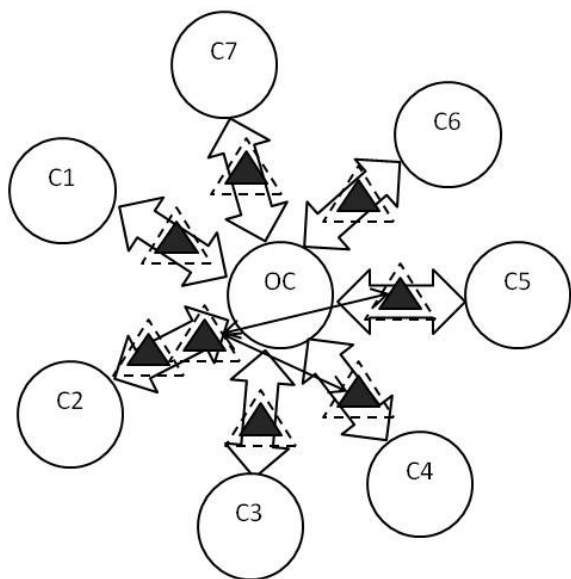
See Figure 3 for illustration of the network development of the OC company and the focus of strategising in different phases. It needs to be noted that the current product of the OC company is tests, illustrated with a dotted line around a focal triangle, and it is still a rather long way to mass-production and use of the product i.e. the organic catalysis substance. When starting large scale production the suppliers will become more central than what they are today.



Initially the OC company made contacts with companies in different steps of the value chain of cellulose products to identify their potential customers (potential customers are illustrated with dotted lines). The strategizing focus of the OC company was to find the right customers and the right place for the product in the chain of refinement.



During this phase, the first tests (illustrated with broken lines around the products) were conducted with the customers, that came out of the initial contacts. These tests are part of the business model of the OC company and the research based knowledge of OC is in a way a 'finished' product used to develop products at the customers. The strategizing focus was on learning how to interact and to build relationships with the individual customers .



In this phase, the strategizing focus of the OC company was on connecting what they learnt about developing different features of the products across relationships. Furthermore, realising the potential in developing more products (illustrated with two 'test products' in the relationship with C2) within existing customer relationships.

Figure 3: Network development and strategising of the OC company.

THE NC COMPANY

The NC company is based on software that detects child pornography on the Internet. The software has so far been developed into four different products. The first product, P1, helps the police force investigate crimes by identifying users of these web sites. The second product, P2, is intended for companies to reveal employees surfing on such pages. P3 is designed for Internet operators that want to block such contents for all its users. P4 is their latest addition and helps parents protect their children when using the Internet. The challenge is considered to be to convince potential customers that there is a problem and that the NC company has the right solution both 'emotionally' and technically. Figure 4 illustrates the development of the business network of the NC company.

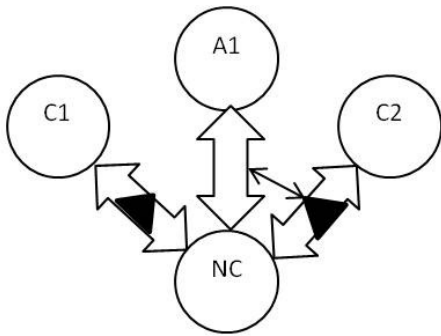
The initial idea when the NC company was founded was to develop the four products for different types of customers. The NC company started with the two products P1 and P2. P1 was developed together with the Swedish police force who is now a (non-paying) customer/user (C1). In addition to using P1 the police also provides information about what type of content that is illegal, and this information has been used for the development of the basic software. Furthermore, the NC company realised that the Swedish police force (C1) could be a door opener towards police forces in other countries. Another organisation that has a relationship with the NC company on a more general level is A1, a charity organisation focusing on children. A1 mediates contacts to potential customers and provides legitimacy to the NC company. The relationship with the police force also provides legitimacy to the company and the product and the NC company has learnt that this is important in order to motivate potential customers.

The first major customer of P2 was C2. Through contacts in the board of A1 the NC company was able to contact the CEO directly when their initial attempts to approach the firm had failed. The CEO wanted to have P2 installed and made the decision to buy within a week. Previously, P2 had only been tested at ten computers at a time but at C2 the number of computers is more in the range of 10 000, which caused a number of unforeseen bugs to occur. However, these problems were solved through hard work by the NC company in collaboration with C2 and the incident actually turned out to improve, and build a foundation for, a good relationship with C2. Furthermore, it taught the NC company that their product could work in large networks, and that all problems were solvable. C2 is a valuable reference customer since they have been involved in the development of the security departments at many companies and are therefore well-known. Furthermore, the manual written by C2 of how to handle alarms from the program has been somewhat re-written and is now offered to the NC company's other customers. Since it was the CEO who decided that the software should be bought by C2, the NC company thought that all other customers of P2 would be accessed through the CEOs. However, they had to change this assumption after a couple of failed attempts to find other P2 customer in this way. Instead, C3 was approached through the identification and persuasion of two members of their organisation and this model to approach new customers has been used since then. The idea is to find a member of the organisation that becomes enthusiastic about the product and one person that supports the enthusiastic person before the decision making is made. The two persons are usually found within the IT, security or HR departments.

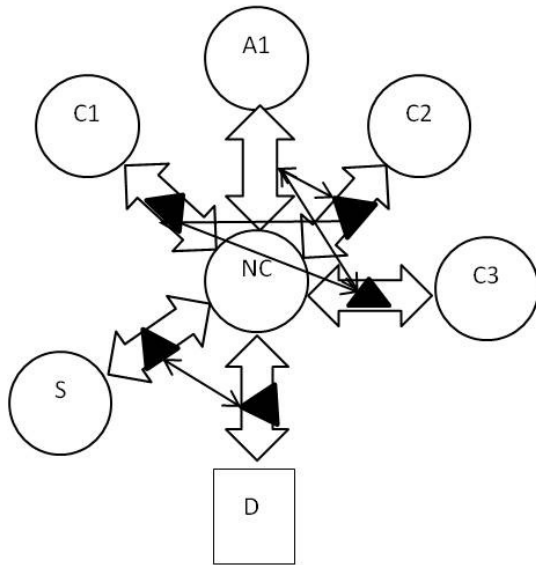
P3 was developed by another firm together with two employees that had the NC company as their only customer. P3 is sold by distributors (D) and their personal networks and understanding of their markets is of importance. P3 is often sold abroad to large Internet providers or entire countries. Through feedback from their first distributors the NC company

was able to make necessary adjustments, in addition to translations, of their marketing material. New Zealand and Monaco were the first customers to buy P3. The reason why they became the first was that a distributor was found in New Zealand who is very eager to sell P3, and also a Swiss distributor with good connections in Monaco. Both New Zealand and Monaco got rather favourable contracts since the NC company plan to use them as reference customers. Furthermore, the NC company has understood that just as in the case of P2, these customers and internet operators also need to be motivated through understanding that there is a problem and that the NC company is the way to solve it. The NC company is therefore dependent on that their distributors recognise windows of opportunity, e.g. when child pornography is currently on the news, and to act upon it.

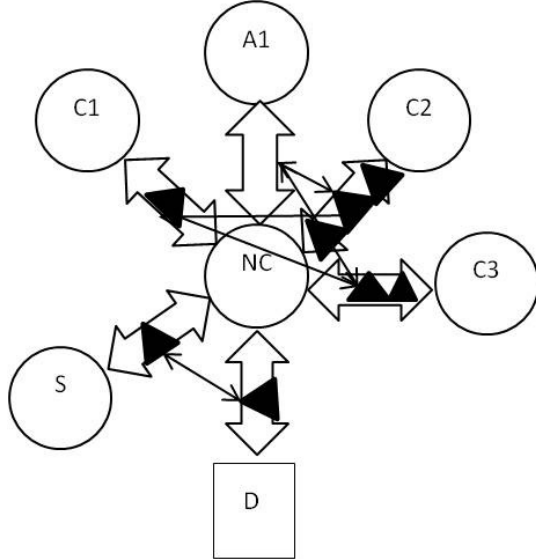
When introducing the fourth product, P4, the NC company started to ‘market’ it to its existing customers as a complement to the products that they were already buying. P4 can complement the other products since it is helping the user rather than preventing or monitoring as the other products. P4 can therefore for instance make the implementation of P2 in an organization easier. Having initially considered each one of their products separately in relation to different potential customers they now started to focus on expanding within their current customer relationships. C2 for example, is a large provider of network access and telecommunication services. They are therefore interested to be a distributor for P3 and to provide P4 to both their employees and customers. To this end, the NC company plans to hire an information director in order to develop a more structured way of dealing with the customer relationships. The NC company also considers that it would be easier to reach all computers in the world, with their products, through the customer network of one big actor rather than by trying to approach each one of the potential users by themselves. However, this would move the NC company towards a more peripheral position in the network as its software would become a small part of an extensive software package.



The first strategizing focus of the NC company was to develop customer relationships for the planned four products. In the illustration the initial two products are included. A1 was an important actor for the NC-company, but not as a customer.



During the development of the customer relationships the strategizing focus became directed towards the utilization of relationships. The NC company identified the possibility of using C1 to get other police forces as customers for P1. Furthermore, the NC company developed contact patterns with customers, which benefitted how they approached potential customers of P2 and P3. The NC company realized that they could utilize their relationships with A1 and C1 as important references to get legitimacy when contacting other customers. The third product developed (P3) became sold by distributors (D). The square refers to distributors as a group.



When all four products were developed and the NC company realized that P4 could be of interest for their existing customers the strategizing focus shifted to customers that were able to buy or distribute all products. The NC company also started to contemplate the potential in integrating the products as a component in a more extensive software package as a long term strategy.

Figure 4: Network development and strategising of the NC company.

CASE ANALYSIS

PRELIMINARY ANALYSIS OF THE STRATEGISING

The cases give some illustrations to how the strategising focus changes over time as the start-ups' networks develop. For the M company the focus moved from developing the product together with two 'potential' customers and suppliers/partners to a focus on what customer relationships to develop and how to interact with the customers. Having developed some customer relationships they moved on to a focus on connecting the customer relationships by mediating direct contacts between them in order to make them help each other to solve various problems and to developing the relationships with the suppliers to make them more active in finding additional customers. Their ideas on how to relate relationships to one another (and when not to) was taken further into the idea of developing key customer relationships in different countries.

The strategising of the OC company shows a partly different pattern. The current products of the OC company are tests performed with their customers. While the tests are still rather distant in time from 'real' products, the tests are made in close interaction with their customers with the ambition to develop products. Hence, the strategising has had an emphasis on developing the customer relationships. Initially, the OC company had a rather random approach making 'cold calls' to potential customers but with time they have learnt that to get into the production processes of the customers' intense and complex interaction is necessary. The scope of the relationships has expanded to also include other actors such as the customers' customers to gain an understanding of the needs of the customers. Now, instead of trying to find more customers, the OC company put their efforts into trying to include more products (first by tests) into their current customer relationships. Regarding connections between relationships, the OC company has realised that what they learn about the product features in one customer relationship could be utilised in other customer relationships. In contrast to the M company, however, the OC company keeps their customer relationships separated and thus build on indirect connections between its customer relationships.

The strategising of the NC company was initially concerned with the four different products and how to approach potential customers of these. In approaching potential customers they learned that they needed to ensure that the technology of the products of the NC company would function but also to convince the customers that there is a problem and that the products of the NC company are the best solution to solve that problem. This changed the focus of strategising for the NC company in the sense that they put focus on developing legitimacy by drawing on the relationship with the police force, the charity organisation and one of its first customers as a reference customer. Another insight was when they were about to launch their fourth product and could use 'connections' among their products. This insight led to a new approach to its customers with a focus to include several products. In sum, the strategising of the NC company had initially a main focus on the product dimension but developed into a focus on customer relationships. In addition, other relationships than pure business relationships have been central in the strategising of the NC-company, and the connections among relationships has been a key part of developing new relationships.

DEVELOPING THE NETWORK PICTURES

By applying the basic principles of network pictures to capture strategising in the three specific dimensions on our empirical material we were able to suggest some preliminary findings regarding the firms' strategising. We also found that more nuances are needed to describe the dimensions or components of the pictures and that the boundaries of the studied network pictures will have to be continuously discussed throughout the study.

First, when products are concerned, there is a range from standard to customised products. In the example of the NC-company, there was a 'standardised' product, developed without interacting with the customer that needed to be mutually adjusted with the systems of the customers. Furthermore, the products of the M company are standardised but in order for the customer to be able to use the product it has to be included in a customised package consisting of the product together with other products from suppliers. Since the contents of the package are consisting of a compilation that depends on the needs of the customer, while the valve in itself is standardised, we have illustrated the product as a standardised product with a customer specific 'frame'. Moreover, we also found another case in terms of not yet developed products, i.e. development projects that the customers pay for. This is well illustrated in the case of the OC company in terms of selling tests. In the illustrations, the triangles with dotted lines are used to show these development projects. The development projects may be terminated before the goal of developing a product is reached or the results of such project may become a developed product. It is interesting to note that these development projects often develop in parallel with the development of the business relationships, as in the case with the OC company and its customers.

Second, we would need to be able to illustrate the development of business relationships in terms of the content and intensity of the relationship for instance as arrows ranging from initial to developed. For example, the relationship between the OC company and C2 became intensified not only with regard to complexity in terms of the number of people involved but also with regard to an increased number of products that were jointly developed. In addition, there are relationships that are not subject to business exchange in the sense that a product is sold and bought. It may be, as in the case with the OC-company, relationships with the university and funding agencies. These relationships also need to be differentiated from the pure business relationship in that they for instance are drawn as thin double-way arrows.

Third, there are also connections between the relationships in terms of what happen in one relationship will influence and be influenced by what happen in another. In more detail, we think that it will be of value to be able to show the exact connections from what dimension they are going. For example, if two relationships are connected through a mutual knowledge exchange based on what the respectively companies have learnt regarding the process, as in the case of the M-company, or if the focal start-up has learnt regarding how to solve certain issues of the developed product this is not shown for the different customers. Then the customer relationships are connected indirectly through the focal start-up.

In addition, when there are many 'similar' (as perceived by the focal companies) actors involved it can also be useful to use categories rather than individual actors. Early in the development of the start-ups there could be rather vague ideas of which actors to approach other than what category they are considered to belong to as in the cases of the M company and the OC company. Similarly, it can be difficult for the interviewee to retrieve from memory exactly who it was that did what at a particular point in time, and it may not even matter if the entire category is treated as a group. However, this may also change over time.

Importantly, the boundaries of the network pictures need to change at later stages of the study. For example, as was seen in the example of the M company, the specific supplier relationships were not included at this early stage of the study since they were rather distanced, compared to the customer relationships included in the picture, by the initial conditions and contracts. However, at a later stage these relationships may become more interactive and some of the customers may continue to rely on the coordination and mediation of the M company while others prefer to interact with the suppliers individually and directly. The boundaries may also need to be changed in order to include more of the indirect relationships. As was seen in relation to the M company their sales depend on the amount of valves that they sell and that depend on the amount of products that their customers produce. This, in turn, depends on the production skills, marketing knowledge and the success of the recipes of their customers. The M company has already started to facilitate the learning required to using the product for their customers by mediating contacts between them. Later, the M company may try to get more involved in or to influence these connections more and then these relationships will be even more interesting to study. This was also seen in the case of the OC company where individual customer relationships were intensified with time. This also led to an expansion of the network boundaries of concern for the customer relationships by including the customers' customers in the interaction.

CONCLUDING DISCUSSION: NETWORK PICTURES AS A METHODOLOGICAL TOOL

In this paper we have elaborated on how to capture the process of strategising for start-up companies. We have suggested that network pictures may play a dual role in this endeavour, as mental pictures based on which managers form their ideas of future network positions and as methodological tools.

Halinen and Törnroos (2005) distinguish four major challenges of case research for research on industrial networks: (1) the problem of network boundaries, (2) the problem of complexity, (3) the problem of time, and (4) the problem of case comparison. It can be argued that every case study design must include 'solutions' to these problems. First, the 'setting of (network) boundaries' can be made in many different ways. Here, we suggest an approach permitting a continuous study of how the network expands, i.e. the boundary is set in an inductive manner as it is in focus of the empirical inquiry. Second, the network complexity is 'reduced' by a particular theoretical focus aiming at capturing only some aspects of network complexity: the focal companies' products, relationships and networks. By this deductive approach to the complexity dimension some key aspects of strategising processes over time can be studied in a systematic way. Third, when the problem of time is concerned we have tried to use some soft form of 'critical event' approach with regard to perceived changes in the ideas of future network positions. Aiming for a continued study of how the start-up companies and their networks develop an additional time boundary concern will be how to 'condition' any conclusions of their development in relation to the arbitrary points in time when we update and analyse the cases. Fourth, when case comparisons are concerned in these continued efforts, the variety among strategising patterns will be addressed. A focus on patterns instead of 'variables' may be a way to balance the benefits from a variety across the cases while maintaining an in-case logic. While cross-case longitudinal approaches have mostly been 'variable' and episode focused we suggest that network pictures may be a tool for systematic study and analysis of (some aspects of) network development over time.

Hence, we suggest that the four boundary challenges can be addressed either by inductive (empirical) inquiry or by relying on theoretical frameworks that limits the boundaries. Deciding what boundaries to address and in what ways seems to be a key issue to consider for any study of network phenomena. In the case of the study of strategising processes for start-up companies we have suggested an approach that limits the strategising aspects while allowing for a continued study of network expansion. As methodological tools the network pictures will enable us to analyse changes in the start-up companies' initial, current and aspired network positions. In addition, the network pictures may support reflections on how they influence and are influenced by each other over time in an interactive way as well as how they develop through interaction with various counterparts.

REFERENCES

- Aaboen, L., Dubois, A. and Lind, F. (2010) Start-ups starting up – Firms looking for a network, *IMP Journal*, forthcoming.
- Aune, T., Holmen, H. and Pedersen, A-C. (forthcoming) Network pictures from two perspectives in a business relationship. Working paper, the Department of Industrial Economics and Technology Management, Trondheim University of Technology (NTNU).
- Butler, R. (1995) Time in organizations: Its Experience, Explanations and Effects. *Organization Studies*. 16 (6): 925-950.
- Ford, D., Håkansson, H., Gadde, L-E. and Snehota, I. (2003) *Managing Business Relationships*. Chichester: John Wiley & Sons Ltd.
- Ford, D. and Redwood, M. (2005) Making sense of network dynamics through network pictures: A longitudinal case study. *Industrial Marketing Management*. 34 (7): 648-657.
- Ford, D. and Håkansson, H. (2006) The Idea of Business Interaction. *IMP Journal*. 1(1): 4-20.
- Gadde, L-E., Huemer, L. and Håkansson, H. (2003) Strategizing in industrial networks. *Industrial Marketing Management*. 32 (5): 357-364.
- Geiger, S. and Finch, J. (2010) Networks of mind and networks of organizations: The map metaphor in business network research. *Industrial Marketing Management*. 39 (3): 381-389.
- Halinen, A. and Törnroos, J-Å. (2005) Using case methods in the study of contemporary business networks. *Journal of Business Research*. 58 (9): 1285-1297.
- Hallen, B. L. (2008) The Causes and Consequences of the Initial Network Positions of New Organizations: From Whom Do Entrepreneurs Receive Investments? *Administrative Science Quarterly*. 53 (4): 685-718.
- Henneberg, S.C., Mouzas, S. and Naudé, P. (2006) Network pictures: concepts and representations. *European Journal of Marketing*. 40(3/4): 408-429.
- Hite, J. M. (2005) Evolutionary Processes and Paths of Relationally Embedded Network Ties in Emerging Entrepreneurial Firms. *Entrepreneurship theory and practice*. 29 (1): 113-144.
- Holmen, E. and Pedersen, A-C. (2003) Strategizing through analysing and influencing the network horizon. *Industrial Marketing Management*. 32(5): 409-418.

- Håkansson, H. and Ford, D. (2002) How should companies interact in business networks? *Journal of Business Research*. 55(2): 133-139.
- Håkansson, H. and Waluszewski, A. (2002) *Managing Technological Development*. London: Routledge.
- Håkansson, H., Ford, D., Gadde, L-E., Snehota, I., Waluszewski, A. (2009) *Business in Networks*. Chichester: John Wiley & Sons Ltd.
- Johanson, J. and Mattson, L-G. (1992) Network positions and strategic action – an analytical framework. In Axelsson, B and Easton, G. *Industrial Networks: A New View of Reality*. London: Routledge.
- Leek, S. and Mason, K. (2009) Network pictures: Building an holistic representation of a dyadic business-to-business relationship. *Industrial Marketing Management*. 38 (6): 599-607.
- Leek, S. and Mason, K. (2009b) The utilisation of network pictures to examine a company's employees' perceptions of a supplier relationship. *Industrial Marketing Management*. Article in press.
- Orlikowski, W.J. and Yates J. (2002) It's About Time: Temporal Structuring in Organizations. *Organization Science*. 13 (6): 684-700.
- Ozcan, C. P. and Eisenhardt, K.M. (2009) Origin of alliance portfolios: entrepreneurs, network strategies, and firm performance. *Academy of Management Journal*. 52 (2): 246-279.
- Quintens, L. and Mathssens, P. (2010) Involving the process dimensions of time in case-based research. *Industrial Marketing Management*. 39: 91-99.
- Welch, C. and Wilkinson, I. (2002) Idea Logics and Network Theory in Business Marketing. *Journal of Business-to-Business Marketing*. 9 (3): 27-48.
- Yli-Renko, H. and Janakiraman, R. (2008) How customer portfolio affects new product development in technology-based entrepreneurial firms. *Journal of Marketing*. 72 (5): 131-148.
- Öberg, C., Henneberg, S. and Mouzas, S. (2007) Changing network pictures: Evidence from mergers and acquisitions. *Industrial Marketing Management*. 36 (7): 926-940.