

AN INNOVATIVE APPROACH FOR THE DEVELOPMENT OF DYNAMIC CAPABILITIES IN SUPPLY NETS

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Introduction

Supply chain or supply net (Gadde & Håkansson, 2002) development seems to be on the agenda for most world class companies in e.g. the car manufacturing and the electronics industries (Larsson, 2001). Companies have learnt that in order to rationalise and develop new values (e.g. new or improved products) it often requires co-operative efforts of more than two actors along a supply chain. If, for example, a manufacturing firm wants to have its logistics operations improved it is not only a matter of the firm itself adjusting its behaviour and asking the logistics firm for something else. In order to make significant and sustainable changes also the supplier or the customer to the manufacturing firm needs to be involved and change and adapt its behaviour. Sometimes the changes need to be stretched out over more than three actors in the chain (Waluszewski, 1995). Activities in business systems are thus often chained, synchronised and forged to fit the specific system in which they operate (Gadde & Håkansson, 2002). Therefore, changes of activities inside and between business firms often call for development of resources and product(-) as well as process technologies (Ford, 2001). These changes concern material resources like transportation equipment or immaterial resources like knowledge, e.g. conceptual and cognitive understanding among the personnel. One theoretical field focusing on the resources a firm possess is the resource based view of the firm (Barney, 1991). According to Barney firm resources consists of all “*assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness*” (Barney, 1991:101). The area of capabilities has been developed further and a distinction can be made between capabilities and dynamic capabilities. Teece et al. (1997:516) defines dynamic capabilities as “*the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments*”. To develop dynamic capabilities not only inside the firm but in the whole supply net is a challenge that many firms are facing today. This, however, is no easy task, and the types of knowledge indicated are likely to become more critical and difficult to improve the further down a chain a development takes place. Since the firm gets smaller the resources get scarcer, especially knowledge such as a conceptual understanding of new managerial methods.

Resources are not wholly variable. A robot costs the full price even if it is not utilised more than one hour per day, an engineer is likely to ask for a salary in line with his profession even if his knowledge and skills (in line with the profession in question) are only utilised one hour per day. This means that small firms are not likely to be able to carry the cost burden of the kind of advanced resources, human and knowledge as indicated (Nooteboom, 1994; Äyväri & Möller, 1999). This means that they face, possibly, two other options. If they want to develop they could either rent such capabilities on a time basis, acquire the necessary knowledge and skills by recruiting new staff or train the existing staff. The latter possibility that normally is the most feasible one is frequently restricted in these kinds of firms. Their

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employees often have a limited experience from studying and thereby a resulting lack of absorptive capacity (Leonard-Barton, 1998), at least when it comes to cognitive and conceptual understanding. University education and similar theoretical studies aims at developing such abilities, which also prepare people for continued learning (Axelsson, 1996). Theories and concepts support us in relating different issues and realising the deeper meaning of issues under exploration. If such prerequisites are not in place to the extent necessary and – still – someone wants to improve the entire supply chain also among SMEs, knowledge and capability development needs to be addressed. It needs to be adapted to the specific situation of these kinds of firms and their human resources. This is what is done in the Swedish KrAft¹-project.

The purpose of this paper is to introduce the reader to the KrAft-method to capability development and to analyse the methodology based on the Norrgravel case.

The KrAft-project

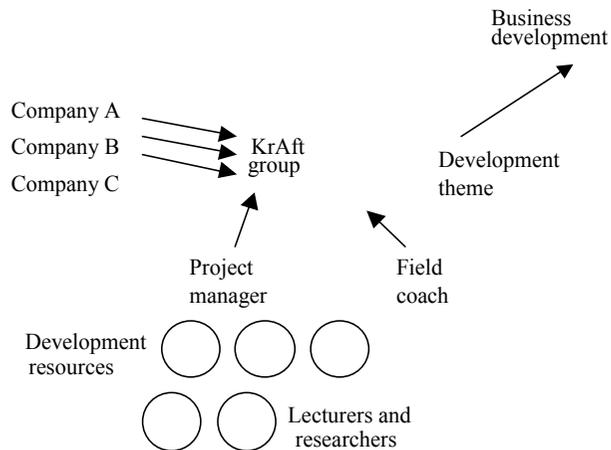
The KrAft-project aims at capability development among SMEs. The basic idea is to connect managers and other significant actors in SMEs to researchers at universities in order to try and bring the two worlds somewhat closer. From the SME perspective it is intended that researchers bring their theoretical knowledge and in a dialogue add its relevance to the practitioners. This does not entail the classical approach to learning with the initiative from the teacher, and plenty of overheads and passive students. The idea is also to create some learning in both directions.

The basic set-up is that the small firm is invited to a development program and is urged to bring the CEO and one more key actor. The issues dealt with should be decided by the participating firms. A typical KrAft-group consists of around 15 people and, thus, 7-8 companies. The theme for the group should always be a part of a firm’s strategic development. But this means that the specific theme(s) could be anything from logistics, production improvement, organisational change, design, branding and many other issues. The specific KrAft-group could also concentrate on one theme during the entire program or move between a number of themes. The organising team consists of one Project Manager who is an academic from the university (or business school) and who is responsible for the content and the level of the program. It should, however, be strongly emphasised that the participants are deciding on the content based on their needs. The Project Manager should be a part of this process and support the participants in identifying and making explicit what kind of learning (themes) should be best fitted to the needs expressed and also to connect experts from academia with his KrAft-group. The Project Manager is supported by a Field Coach who should be an experienced business manager or similar with an interest in development issues.

A typical KrAft-group spend 15 days physically together to jointly discuss important topics, share experiences and to get input from the Project Manager and other resource persons hired by him/her. Often the 15 days are split into 8 times 2 days. In between those gatherings, each individual company is expected to perform assignments decided on at every joint meeting. The typical duration of a program is one year.

¹ Kraft is the Swedish word for Power. Here it is used as an acronym where k stands for kompetens (competence), r for reflektion (reflection), af for affärsutveckling (business development) and t for tillväxt (growth).

Figure 1: The structure of a KrAft-group



The Field Coach is a resource who could be called on by the participating firms during the process. It is expected that he or she should visit each participating firm at least twice during the program. His/her role is then to support the learning at the specific company, give advice and train the people at the firm to make preparations and the analyses asked for by the participating firms. In this way, the Field Coach acts as a “translator” of the theoretical aspects of the capability development from the academic world but also the reverse way from the practitioners to the academic world. This is meant to become a genuine experience-based learning venture. The basic idea behind the decision to connect researchers is to try to make the participants move from their specific problem and ways to approach it to more generalised learning in line with e.g. Kolb (1984)². The total cost per company is 8.000 Euro. Half of it is subsidised by government funds, the other half is paid by the participating firms. It is considered important that each actor invests both time and money in order to establish higher commitment to the project as such.

Introduction to the Norrgavel case

The Norrgavel case is especially interesting for several reasons. Firstly, in this KrAft-group the initiative to change and development is taken by a customer who challenges its suppliers. Norrgavel is increasing its sales and is in a process of international expansion. Those of their suppliers who intend to follow should need to improve their capabilities, both in volume and by increasing the quality of their processes, such as logistics. The suppliers are challenged to improve their professionalism in terms of lead-times, in logistics utilising the possibilities of ICT, etc. That calls for a substantial share of cognitive understanding. Secondly, all the involved firms have a common interest in that Norrgavel achieves its vision, even though many of them operate in different industries. This, in turn, makes it evident that a

² Kolb (1984) describes the Lewinian experiential learning model. The Lewinian learning model starts with the concrete practical experience of the actors involved. Observation should be followed by reflection. The reflection part is followed by the formation of more abstract concepts so that the reality observed could be generalised to be valid for the different actors. The model further suggests that these concepts are tested in new situations, which in turn creates new practical experience. In this way there will be an accumulated qualitative growth among the involved individuals and firms.

temporary project like KrAft should have good odds not to cause the participants to fall back after the project is finished. They are all in continued operation and need to be as capable as possible. The project should act as an injection. Thirdly, Norrgavel acts in this case as a locomotive in the network (Lorenzoni & Ornati, 1988). Research has shown that such a point of departure, i.e. the existence of a company taking that role, strengthens the likelihood of a positive outcome (Lorenzoni & Ornati, 1988; Miles et al., 1992). Similarly, experiences from product development clearly demonstrate the importance of demanding customers for the likelihood of success (von Hippel, 1986; Håkansson, 1987). The other participants in this network are six of Norrgavel’s suppliers.

The research presented in this paper is based on participant observation from the meetings and in-depth interviews with the actors in the KrAft-group. Also on the last day of the project an anonymous evaluation was made to investigate the perceived results in terms of learning and changes to the business of each individual and firms.

Norrgavel markets products with an attractive design based on key words like timelessness, genuine solid raw material, Scandinavian style, and strict coherent design. It has its own stores which act as showrooms for the entire product line. The firm is still a rather small producer and retailer in the field with a turn over of roughly Euro 4 million. It is strongly niched and has a top-of-the-line price level, but does not have the necessary body of resources to train its suppliers to the standard desired. Norrgavel is currently in the process of making a strategic internationalisation effort. When the project started Norrgavel had planned to set up a store in Copenhagen, Denmark, about a year later. This was expressed as “*Be with us in Copenhagen next year and join us on our international adventure*”, or a message intended to attract the suppliers to take part of the KrAft-program.

Three of the suppliers in the Norrgavel KrAft-group are carpentry shops, one is a producer of lamps, one imports carpets made to design and the last supplier is a flax producer (see table 1 below). All actors have in common that they deliver high quality and designer products that contribute to the ambience of the Norrgavel stores and are important contributors to the Norrgavel brand. We thus had a group of suppliers who were all challenged by a customer and the vision expressed by that customer.

Table 1: Companies participating in the Norrgavel KrAft group

Company	No of employees	Annual turnover 00
Norrgavel, furniture manufacturer, acts as locomotive in the network	21	32,7 million SEK
Ateljén i Anderslöv, lamp manufacturer (Zlamp)	5	4,3 million SEK
Kathea, carpet importer	1	1,5 million SEK
Lammhults Snickeri, furniture manufacturer	11	6,8 million SEK
Stol och Fätölj i Ruda, furniture manufacturer	2	2,0 million SEK
Torsten Nilsson Snickeri, furniture manufacturer	12	7,6 million SEK
Växbo Lin, flax manufacturer (table clothes etc.)	10	4,8 million SEK

Altogether there was a group of 15 people as all firms had at least two participants, with Kateha, run by a solo entrepreneur, as the only exception. They had all agreed to the idea of strategic development. The academic background among the participants was generally low, except for 3-5 people who had studied at university level or equivalent. Two of those came from Norrgavel, who has a different role than all the others. The Program Manager was a professor of Business Administration from Jönköping International Business School (JIBS) with extensive experience, also from contract teaching and consultancy³. The Field Coach

³ We refer to professor Björn Axelsson who is also one of the authors of this paper.

was an experienced previous CEO and policy maker who was also well acquainted with the kind of firms and people involved. He happened furthermore to be a minority owner of Norrgavel. There was also a PhD candidate involved. He acted mainly as a researcher but supported the process with administrative services and some presentations of theoretic topics⁴. He was present at all meetings and he also made contact with every single one of the participants between each meeting to listen to their points of view and to try and check the learning process as such. He could get signals that some participants would like to change subjects and he could ask for their learning experience. The method even allowed him to challenge the participants, e.g. in cases when they said that they had not learnt anything or had not gotten any new ideas. As he was an active participant he could confront them with phrases such as “*but, when Mr X said that he had some experience pointing in a different direction than yours – what was your reaction?*”

The program consisted of 15 days of joint meetings divided into 7 times 2 days plus one day of introduction. No schedules and no content were produced far in advance. The time between each meeting was planned to be around 4-6 weeks. Between each meeting with the whole group, they all had exercises to prepare, both practical tasks and reading assignments. The duration of the entire process thereby equalled slightly more than one year. One basic ingredient was also that every member of the network should act as hosts for at least one meeting. Thereby all companies were visited by all participants during the process. Each such meeting should start with a company visit so that knowledge and understanding of the different actors' businesses could be fostered. One basic idea in the total concept is that of learning *from* each other as well as learning *with* one another (Simonin, 1999).

The process of the Norrgavel case

We will now describe some of the activities that took place and structure the story along the two main themes, logistics and marketing, in the project. We cannot describe all details of what happened but, instead, focus on some activities, events and micro stories (cf. Wigren, 2003) that we find of particular relevance. In appendix 1 there is a short list describing the contents of the meetings held with the KrAft Norrgavel group.

The challenge

The natural joint point of departure was to gather the group at the first of the, by that time, four Norrgavel stores. This store is situated in Lammhult in Småland, a small community with an impressive number of furniture producers. The village and its surroundings are sometimes referred to as “The Kingdom of Furniture”. Two of the suppliers, one of which was involved in the KrAft-project, are located in this area too. The others come from much more remote places. After an introduction and presentation of the companies and the people involved, it was a natural start for this very first day to look at mission statements and foremost the one by Norrgavel, the customer/locomotive. The CEO of Norrgavel, Maria Månsson, told the story of the firm's history, and reminded the participants about the basic values that form the vision and what impact it has on the products, the range, the ambience strived for in the stores, etc. Of course, much of the overview was directed at the future challenges of the company and the promise as well as the barriers one could foresee. The vision also included the suppliers. The CEO wanted to make them come closer to the market of Norrgavel. “*When a customer buys a chair in one of our stores it should ring a bell in the*

⁴ We refer to PhD candidate Johan Larsson who is also one of the authors of this paper.

production site of the actual supplier”, she said. The message was that the entire group of suppliers, the supply net, should organise like a team with the customer to increase market share and to make Swedish design, especially as it is exposed by Norrgavel, known and appreciated also abroad. A second major message was the internationalisation - and first of all the Copenhagen - challenge.

A second step was to ask for reactions from the suppliers to this challenge from Norrgavel. Was it interesting? Could they identify any shortcomings on their part when facing the challenge from the customer? Were there any important areas of improvement that needed to be addressed? Were there specific pieces of knowledge missing in their operations/companies, for them to be prepared for this challenge? Other important enablers like production equipment, ICT infrastructure etc. were also asked for. All these possible shortcomings were listed on a white board. The Field Coach, who already had visited all the suppliers once and the Project Manager from the business school had also prepared a list from which some further additions of possible knowledge gaps could be made. The white board was full of important areas in which one or more of the companies needed to improve their capabilities.

Based on this long list, a first overview of possible and important themes for the joint development process was made. It was evident from the list and the frequent mentioning that various aspects of logistics was a key area, but a number of aspects of marketing weighed heavily too. Some of the other topics were contract law, accounting (calculating investments), production economy, fashion and design, as well as recruitment and training issues. In this paper however, we focus on the two main themes logistics and marketing.

The development process consisted of several equally important elements, it was an interplay between theory, practice, generalisations from practice and homework all carried out in several iterations. The Program Manager was responsible for the theoretical parts as well as for making generalisations from our practical examples. The Field Coach took an active part helping the participants with the homework as well as preparing practical examples. We now turn to the first theme of the project, namely logistics.

Theme 1 Logistics

In order to introduce logistics the Program Manager had invited an assistant professor in logistics. He described some of the core elements in logistics, a historical overview of the development in the field and current trends in that area. This was accompanied by a classification of levels of development. A general discussion about the relevance of the issues covered was also part of the exercise. The Program Manager and the Field Coach challenged the participants by asking them about their levels of operation. The ideas behind vendor managed inventories, VMI⁵, (e.g. Simchi-Levi et al, 2000) which was presented as the “state-of-the-art” received special interest. In order to make progress along such lines it was evident that a company need to trace its present behaviour and map the processes it already had. To move one step in such a direction and to deepen the reflection part, all participants agreed to go back home and make a flow chart describing their inward, internal as well as the outward logistics of their firm. This, along with some articles with supportive instructions and explanations was the agreed on preparations for the next meeting. To support the fulfilment of this assignment a set of material and instructions were sent out. This did not, however, suffice. Some of the participants made contact and explained their difficulties in fulfilling the

⁵ VMI means that a supplier takes responsibility for the levels of stock and refill activities etc at their customer. The only important thing is that the supplier has access to information about present status and requested items ready for sale at any time. It is one of the most advanced methods and it demands that the two or more parties are on line communication wise.

assignment. As a result the coach paid field visits to them all and supported them in the construction of the flow chart.

The host of the next meeting was a company with ten employees and with rather old machinery as well as limited use of ICT. Last time it had been evident that Internal logistics could be improved with the help of ICT and, of course, equipment suitable for increased flexibility. But the second-generation owners of Torsten Nilsson Snickeri had not been too impressed. *“We don't see any reason for acquiring any MPS-system⁶.”* A guest from a producer of MPS-systems targeting SMEs was invited to show how the system works and what possibilities such a system might bring to the actors in the Norrgavel network. During and after the presentation the participants were challenged with questions such as *“in what ways do you think that a function such and such could have an impact in your case?”* The degree of openness to possible influences varied considerably.

At this meeting the participants also presented the flow charts they had prepared as homework, covering activities and measures of the time each activity take, since the last meeting. That led, among other things, to a discussion led by the Program Manager on similarities and differences in terms of logistics problems in each of the participating companies. The intention was to give room for reflection and some generalized learning. It turned out that all companies, even though they were not in the same industry, had similar problems and all of them found the exercise very rewarding and relevant.

Our next meeting started at a firm similar to Torsten Nilsson, but in this case it was a technologically much more advanced firm. It had a CNC-machine since some years and it had a quite advanced MPS-system. Furthermore, the CEO was a trained mechanical engineer. The company made a nice contrast to the previous one and gave a lot of room for reflection. The two firms were very similar and very different. The Program Manager and the Field Coach were both very active focusing the discussions on all the similarities and the differences and also to try and trace the effects in various dimensions of all these differences.

During the time that passed between the two meetings it had turned out to be difficult for the participants to really be able to “put money on the flows”, even though they had some written material to support them. This had become evident from reports made by the participants since the last meeting. In order to make them all better prepared until next time and to be able to provide a hands on experience from the involved firms, a student had helped one of the firms, Stol och Fåtölj, to carry out a production analysis and CNC simulation (covering different alternative ways of carrying out specific processes) of one product. This was used as a demonstration and as a possible role model. The study was presented to the group and discussed intensively. Still, the homework needed to really carry out such an analysis was never really done.

To strengthen and make explicit the economic dimension of logistics as well as of other improvements an associate professor in finance was invited for two hours to teach on the subject. Return on investments from logistics demonstrated by a model, the DuPont-analysis⁷, was a way to further the discussion on possible ways to improve logistics. It is a robust way to illustrate what different courses of action will do to the return on investment. Here it was also possible to play around with other changes such as increased sales and the ROI consequences of that. To further help the participants a handout covering and explaining the DuPont model was distributed.

⁶ An MPS-system is a software that electronically provide information that enable firms to better coordinate and time their production activities.

⁷ DuPont analysis is a way to connect all financial data of the firm into one diagram. When one variable, such as costs for inventories is changed the effects on the change in the company's return on investment (profitability related to the money spent) can immediately be estimated.

The CEO of Norrgavel was also invited to show some of the other developments at the locomotive firm. She presented an idea to invest in software, “chain-brain”, that could connect all the suppliers to Norrgavel more tightly. They could get all the news from their customer, a tight follow up on sales and even by a web-based interface get that “bell” in their production site when one of their products had been sold. This was received very positively and was presented as part of the new agreement that Norrgavel had prepared.

We also discussed some of the internal logistics and organisational consequences of becoming more flexible and applying the VMI-concept. As a starting point for that discussion a video describing the idea behind and consequences of process organising production activities was shown to the group. It gave room for reflection. The Program Manager asked, *“could you all describe how you have organised your production?”* A discussion on this topic emerged. The two owners of Torsten Nilsson came into focus. Since the visit there they had already invested in a CNC-machine and had it delivered. A natural question in relation to internal logistics was the following: *“which considerations did you make when you put this new equipment into your production?”*. The answer came promptly: *“There was only one place possible!”* Interesting, the same question was promptly placed to Lammhults Snickeri: *“we analysed the flows of materials and decide on an optimal position for the machine. This meant that we had to move at least three other machines to a new position”*. Reflection: *“what do we know about optimising the materials flows in your firms?”* This reflection turned into a decision to take a closer look at the internal organisational aspects next time.

That closer look was made explicit through a flow organisation simulation game in which the participants tried different internal production organisations and evaluated them afterwards. In all we had covered a number of important aspects of logistics related to the participants. It was now time to start the second main theme, marketing.

Theme 2 Marketing

Marketing is an area that affects all the participating firms. They all need more customers and to improve their brands. Therefore it was natural to start this theme with a lecture about brands held by a PhD candidate specialising in this field. The lecture was followed by a discussion, led by the Program Manager, about brands and their importance for the different participating firms. The next marketing related activity was trade fairs since all participants use trade fairs in their marketing. Also this time it was a lecture, held by a PhD candidate, followed by a discussion.

As the next step the Program Manager mapped different activities to show the participants that if a measure is taken, i.e. to reduce stock, that will affect a number of activities in the company and might for example lead to a need for education of personnel. He also gave an introduction to marketing and what kind of marketing that is right for different situations depending on a) few or many customers and b) business to consumer or business to business. A PhD candidate followed up with a presentation on segmentation and positioning followed by a discussion on how this could be applied to the participating firms.

There was now a theoretical base and some practical illustrations about marketing and it was time for a new homework. The Program Manager gave the participants the assignment to prepare a marketing activity plan for the coming six months and with an outlook into the future. Some documents and readings to facilitate this exercise were distributed.

The presentation of and discussion about the homework wrapped up the marketing theme and the project was also coming to an end. It was time for the last meeting and an evaluation of the project.

The end and evaluation of the project

At the last meeting, the Program Manager made a thorough evaluation of the program. As an introduction the Program Manager demonstrated, in a similar way as during the Växbo Lin meeting, how the various aspects that had been dealt with were connected and contributed to strategic development. This model is reproduced in Figure 2.

The group had from the start been confronted with a challenge and had to consider their needs for development to face this challenge. In this process the group basically started by digging into logistics as a way to begin their improvement. The focus had later on changed into other related areas as indicated in the figure. It should be emphasised that this figure was arrived at in a dialogue with the participants. It became a way to evaluate their abilities to generalise and see connections between different aspects of business activities.

In the evaluation we wanted to catch several aspects. How the program had influenced the participants' thinking about business and possible changes in their mental maps. What had they learnt? But it was also important to get their picture of what had happened inside their firms as well as within the relationship to Norrgavel and the supply net. Of course, the connection between the development process and the changes and developments of their firms needed to be addressed. We will return to these issues shortly. We also asked the participants to rank their capabilities, within the themes covered, according to a scale from 0 to 3 where 1 was basic orientation (I have acquired an orientation about important questions), 2 was capability/competence (I have acquired skills so that I can carry out tasks such as writing a business plan, and 3 dynamic capability (I have acquired an in-depth knowledge and the ability to adapt my analysis to different contexts). 0 meant no knowledge about the topic in question.

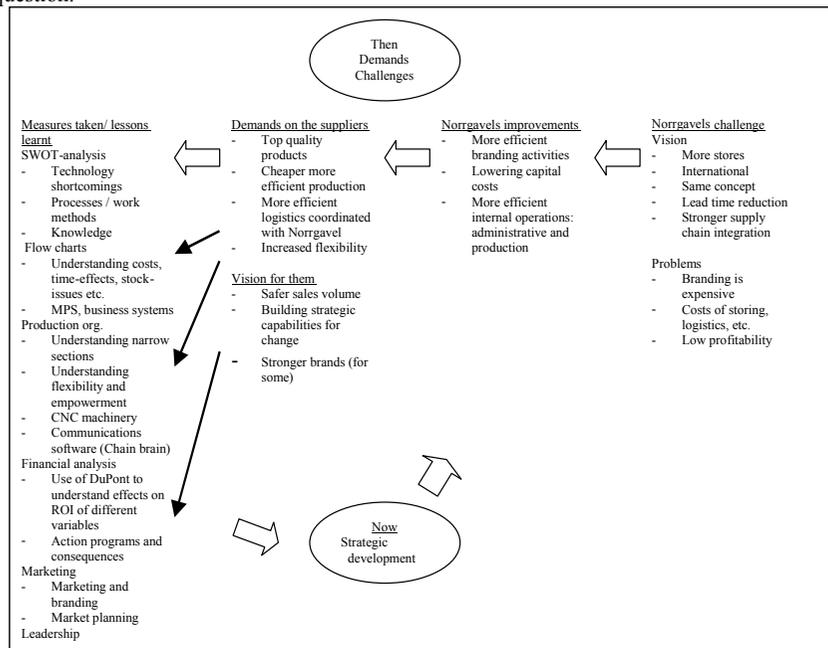


Figure 2 A systems view of the venture – how every issue is connected and contribute to strategic development of the entire supply net

As a grand finale, all participants visited the newly opened Norrgavel store in Copenhagen! It was actually there and the suppliers were still around, just like the vision at the start of the project!

Back to the starting point – what have we learnt about developing dynamic capabilities in supply nets including SMEs?

In the introduction we positioned this case as one of supply net development. We also defined the context as several SMEs with limited resources, limited time on their hands, as well as personnel with limited experiences from studies and with a low level of academic training. Still, they were embedded in a context where there was a request for strategic development that called for a certain amount of such understanding. This request was materialised by a challenge from their joint customer, Norrgavel, which acted as a locomotive in this case. From the description of the development process it seems evident that this has been a process rich in content and with strong involvement by the participating firms and individuals. But what could be said about more specific results in terms of:

1. supply net integration?
2. of learning, capability, and dynamic capabilities development?

The latter aspect needs to be elaborated to some extent. It was an important aim not only to support the people involved in solving specific hands-on problems, but – in addition – to support the generation of generalised knowledge. The reasons for this latter ambition was that it should increase their absorptive capacity and provide an ability to learn in such a way that future problems should be easier to solve (cf. dynamic capability). Being equipped with theories and a richer cognitive framework supports people's process of understanding as this provides them with algorithms, patterns of thinking, that should be supportive in future challenges.

Specific results in supply net integration

We could not argue that everything that has happened in and among the involved firms during this process is a result of the KrAft-project, but we definitively think it has contributed, if nothing else to speed up the processes.

In the case description we could read that there is today a VMI-arrangement in place supported by software, Chain-Brain, that gives all suppliers immediate information about the sales development in Norrgavel stores. Furthermore, it provides them with a lot of other information to make them "come closer" to the customer market of Norrgavel, including insights into the branding activities performed by their joint customer. The potential improvements in logistics (more timely, shorter lead-times, smaller stocks, better priorities at each production site, etc.) and in production planning made possible by this arrangement, are supported by a written agreement between the parties. The understanding of the conceptual ideas behind this and the demonstrated – potential – economic effects of such a changed pattern of operations learnt within the KrAft-project is very supportive. There are already some realised improvements and there is awareness of future possible rationalisation effects.

In addition to this some of the suppliers have changed the relationships with their own suppliers. Stol och Fåtölj has outsourced the drying process, moved to new facilities to, via a strategic alliance, get access to a CNC-machine and also to get better flexibility by being able

to share some tasks and people with the partner. They have also analysed their situation and clarified the conditions for possible future choices of their business mission. Växbo Lin has improved their relationship with the Norrgavel stores by teaching the Norrgavel sales people the story of Växbo. They have also sharply addressed not only internal logistics problems in their production but also in sales channels. Kathea has created a system including a purchased of soft-ware to better trace where carpets sell the most. Hereby, it will be able to fine-tune its service level in combination with optimal costs of storing and transporting. Torsten Nilsson has bought a CNC-machine and started to utilise it much more professionally, not least because of the support they have got from the more technically skilled and experienced CEO of Lammhults Snickeri. Since the meeting at Växbo Lin where they were criticised for not having taken full advantage of the machine, they have improved a lot. They have also reconsidered the internal material flows and learned how to estimate future profits and losses and the possible effects of various measures to influence otherwise determined patterns (the DuPont-analysis). Lammhults Snickeri, technically the most advanced firm when it came to logistics, CNC-machines and MPS-systems, have fine tuned a lot of activities. They utilise the potential of the CNC and the MPS to an even greater extent than before in order to optimise production priorities which has now become possible thanks to the application of the VMI-concept. Furthermore, they have been able to replace their accountant by better utilising the software and by outsourcing some of the activities previously performed by the accountant. This has meant important savings. They have also developed a new product, a pellet for energy production made from waste products. The investment required for this had a payoff time of about one year. Zlamp has reconsidered several aspects in logistics and marketing conceptually, and so forth. It should also be emphasised that Norrgavel had made their share. An improved store has opened in Gothenburg and a totally new one in Copenhagen. Further more, a very expensive advertisement campaign has been carried out and all stores have been rebuilt. Still, they do have some profitability problems due to a generally negative business cycle.

We can thus point at quite a lot of changes that easily could be considered strategic for all companies involved. But again, all this is not due to the KrAft project alone. From our evaluation it is clear that the process gave good support to many of these developments. All of the participants graded the project as good or very good. The following quotations also illustrate some results of the project: *"It has been positive to work in a close relationship and solve different problems"* and *"We now have a greater understanding of each others' situations"*.

Specific results in terms of learning and dynamic capability development

There are different levels of learning. We could distinguish between learning to the level of orientation "having heard of" but still being a novice, and deep insight like an expert "being able to perform and understanding all consequences of actions in every context" (Göranzon, 2001). In this development project our follow-up indicates that we have most of all achieved a level that is closer to the novice than to the expert. But thanks to the method of experiential learning starting from needs identified by the individuals in the firms and being applied to their contexts it became more than a general orientation. We are here thinking of aspects and activities such as the mapping of logistics flows, the application of the DuPont analysis to their situation, the internal materials flows demonstrated to each one at every company and discussed and questions, the creation of market planning, activity plans etc. This has created an understanding that goes beyond merely orientation. In the evaluation three of the participants ranked their knowledge about logistics and marketing as 3 (I have acquired an in-depth knowledge and the ability to adapt my analysis to different contexts), i.e. what we in

this paper consider dynamic capabilities. Many of the remaining participants ranked their knowledge about logistics and marketing as 2 (I have acquired skills so that I can carry out tasks such as writing a business plan) here defined as capability/competence with the rest of the participants claiming that they had received an orientation, 1. None of the respondents answered 0 for no knowledge of the topic in question. The main reason for these varying results is most likely due to the fact that the participants had different backgrounds, with some having university degrees and other only upper secondary school, but still it was interesting to note that actual learning took place for all the participants even though on different levels.

We think that one reason for this rather positive outcome in this case is the long duration of the program. It was possible to be quite sensitive to the upcoming demands and desires in the group and it gave the Program Manager time enough to forge a suitable activity including readings and speakers as well as pedagogical methods during gatherings.

However, we think, and the evaluations support this, that we never reached very far when it comes to generalised learning. The Program Manager and the Field Coach tried, ever more intensively during the joint gatherings the longer the process went on, and it made some progress. We are here referring to such occasions as when the two owners and managers of Torsten Nilsson were challenged by their thinking behind internal production flows in which they were confronted with a different approach from Lammhults Snickeri which then made the move to generalised learning about organising production natural. Further, their limited use of the CNC-machine and other possible adjustments to avoid this becoming only an extra cost, that gave all an eye-opener concerning the use of financial analysis and the use of the DuPont scheme. Also issues rose in relation to branding problems and the self-evident response from Norrgavel not to allow everyone to become highly visible in their stores. This revealed market channel problems of a general magnitude.

Still, we think that this development process and the people who experienced it, in general, have a long way to become "experts" and to be able to easily deal with future problems of a similar nature. It takes a lot more reading and learning of general knowledge in combination with training. This is verified in our evaluation where most aspects learnt were referred to on an "orientation level" or "knowing how" but rarely listed feeling almost like "an expert". Had the program Manager and the Field Coach been able to make all of them willing to read more and to follow up, discuss and relate the theoretical body of knowledge more intensively, they should have come further. But that is maybe to expect too much. The basic question, whether it is possible to forge supply net development among SMEs in cases when there is a need for conceptual and theoretical understanding, has received a positive answer. It seems also to be possible to support such processes in line with the KrAft-design and to provide some learning of generalised theories also among this kind of firms. But, it does not happen without efforts by all involved. In the Norrgavel case the success was due to several prerequisites such as the existence of a locomotive firm with dedicated management (a clear and challenging vision), the strong involvement by Norrgavel (two participants and the Field Coach as one of the owners), the long duration between each gathering the helped tailor make the sessions and exercises plus the regular on-going business activities in line with the desired development. Further, the composition of the group of firms and individuals was crucial. Very early on an excellent social atmosphere was achieved among the participants, maybe supported by the organisers. It also helped that the group was managed by a well-functioning group of three advisors. Not only the Program Manager and the Field Manager contributed. The contacts by phone after each gathering carried out by PhD candidate Johan Larsson made the team very well informed about the desires and questions by the group members. It also contributed to the learning as the participants had to reflect on what they had experienced and also to have their interpretations challenged. A particularly interesting observation was that these participants who had the most to learn, who had the weakest

theoretical background, frequently reported that they had learnt rather little and only got a few new ideas. Over time this changed and they began to see and experience more. A nice illustration of this is the spontaneous declaration by one participant who said to the Program Manager: *“The first times we came together your comments and lecturing parts were way out there and had no connections with our business. Later on you have managed much better”*. This could be a correct notion but probably not entirely so. Rather we think that the great difference lies in the participant. It is unclear whether this change was primarily due to their gradually increasing understanding, their broadened and deepened frames of references, or most of all due to the enduring efforts of reminding participants about this aim. Those participants who had the best theoretical background and who already should be aware of most of the aspects studied and discussed, surprisingly reported a lot of learning, many new insights and ideas already from the beginning!

Concluding remarks

The KrAft-concept has proved to be an innovative approach to strengthen competencies and ultimately develop dynamic capabilities among the participants. Some strengths with the concept is that it starts out from the needs of the participants. Further, the use of an academic Program Manager and a practitioner as Field coach enables the project to mix theory, practice, and to support the participants in their homework. To raise the participants to a level where they could be said to have acquired dynamic capabilities is no easy task and it is also dependent on the background of the individuals. In the Norrgavel case we have seen a development of competencies on three different levels; orientation (novice), capabilities (knowing how) and in three cases dynamic capabilities (expert).

The project has also resulted in an increased supply net integration and a number of strategic decisions has been taken by the participants, decisions that have strengthened their resource base considerably and prepared them for new challenges.

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Appendix 1: A summary of the KrAft Norrgavel meetings
Table 2: Meetings and themes for the KrAft Norrgavel group

Meetings with the KrAft Norrgavel group	
No 1 The Norrgavel meeting	No 5 The Ateljén i Anderslöv (Zlamp) meeting
<u>Friday 010404</u> Start-up for the KrAft Norrgavel group. Discussion about possible themes and a presentation from Norrgavel	<u>Friday 020412</u> 09.30-12.00 Visit at Ateljén i Anderslöv (Zlamp) 13.00-14.00 Lunch 14.00-18.00 Theme flow organisation - simulation game
No 2 The Kateha meeting	<u>Saturday 020413</u> 08.30-11.00 DuPont examples 11.00-12.30 Theme marketing (trade fairs)
<u>Friday 010615</u> 09.30-12.00 Visit at Kateha 12.00-13.00 Lunch 13.00-15.00 Visit at Källemo 15.00-17.00 Discussion about business ideas 17.00-19.00 Artistic exercise – oil painting 22.00- Vernissage – private view of the paintings	No 6 The Växbo Lin meeting
<u>Saturday 010616</u> 09.00-12.00 Theme logistics	<u>Friday 020524</u> 09.00-13.00 Tour of the Växbo Lin factory and Trollaldalen 13.00-14.00 Lunch 14.00-17.30 Discussion about impressions from the tour 17.30-19.00 Home-work discussion
No 3 The Torsten Nilsson Snickereri Meeting	<u>Saturday 020525</u> 08.00-13.00 Theme marketing (basics and segmentation/positioning)
<u>Friday 011019</u> 09.30-12.00 Visit at Torsten Nilsson Snickereri 12.00-13.00 Lunch 13.00-15.00 Demonstration of a MPS-system 15.00-17.00 Computer support in the production 17.00-18.30 Visit at an antique store in Brösarp	No 7 The Stol och Fätölj meeting in Ruda
<u>Saturday 011020</u> 08.30-12.00 Presentation of homework “flow analysis”	<u>Friday 020614</u> 09.30-12.00 Tour of the Stol och Fätölj factory 12.00-13.00 Lunch 13.00-15.00 Discussion 15.00-16.00 Visit at the new facilities for Stol och Fätölj 16.00-18.00 More discussions on how to grow 18.00-19.00 Theme marketing – product portfolio
No 4 The Lammhults Snickereri meeting	<u>Saturday 020615</u> 08.30-10.00 Quality and customer oriented development 10.00-11.30 Theme co-workers and leadership
<u>Friday 020215</u> 09.30-11.30 Company visit at Lammhults Snickereri factory 11.30-12.30 Lunch (at JIBS) 13.30-15.30 Theme finance (DuPont) 15.30-16.00 Presentation of chain brain 16.00-18.00 Theme operations management – case from Stol och Fätölj	No 8 The Norrgavel meeting in Malmö and Copenhagen
<u>Saturday 020216</u> 08.30-10.00 Video Flödesorganisaton (Flow organisation) 10.00-12.00 Theme marketing (branding)	<u>Friday 021011</u> 12.00-13.00 Lunch 13.00-14.00 Nirvan Richter, designer Norrgavel 14.00-15.00 Maria Månsson, CEO Norrgavel 15.00-17.00 Project evaluation
	<u>Saturday 021012</u> 09.00-10.00 The future 10.00-12.00 Visit at Norrgavels Copenhagen store 12.00-13.00 Lunch