*Competitive paper for the IMP Conference 2015, Kolding*

# MANAGING IN SUPPLY NETWORKS – CONNECTING TO SUPPLIERS' OTHER CUSTOMERS

**Anna Dubois*, Elsebeth Holmen** and Ann-Charlott Pedersen****

*****Department of Industrial Marketing,
Chalmers University of Technology,
412 96 Gothenburg, Sweden
Phone: + 46 31 772 11 96
E-mail: anna.dubois@chalmers.se

******Department of Industrial Economics and Technology Management,
Norwegian University of Science and Technology,
Alfred Getz vei 1, 7491 Trondheim, Norway
Phone: +47 73 59 04 64, + 47 73 59 35 03
E-mail: holmen@iot.ntnu.no, pedersen@iot.ntnu.no

## ABSTRACT

How to manage supply networks has been a theme in purchasing and supply management for a long time (see e.g. Harland et al. 2001, Johnsen et al. 2000). However, whether or not, and how, inter-organisational networks can be managed has also been an issue subject to some debate among scholars (Håkansson and Ford 2002). While a common notion is that networks cannot be managed, it has been suggested that relationships can be managed in interaction with specific counterparts (Ford et al. 2003). Consequently, a focus has been set on how buying companies can interact with suppliers in supply networks (Håkansson and Ford 2002, Gadde et al. 2003) and thus; how they through this interaction can manage *in* supply networks.

This paper deals with how buying companies can manage in supply networks with particular focus on how they can connect to specific suppliers' specific other customers. The aim is twofold; first we identify two dimensions of such relational connections; direct/indirect and specific/general, and second we focus on specific indirect connections i.e. situations wherein the buying firm sees benefits in relating to the supplier's specific relationships with other customers but without having (direct) relationships with these firms. The paper builds on a literature review and a set of empirical examples of how the relationship between buying firms and their suppliers are related to the suppliers' relationships with other specific customers. Based on Holmen et al. (2013) we illustrate how buying firms may have ideas of how to draw on specific suppliers' other customer relationships, and how such connections may have managerial relevance in view of the buying firm's supply network development intentions.

**Key words**: triads, buyer-supplier relationships, relationship connections, specificities

## INTRODUCTION

Every individual buyer-supplier relationship is, in one way or another, connected with the supplier's other customer relationships. These connections, however, are seldom explicitly addressed in the purchasing management literature as specifically interesting from a managerial point of view. In this paper we inquire into the nature of such relational connections and how these can be subject to managerial efforts from the buying company's perspective. Putting this inquiry into a purchasing management context we categorise the possible approaches that a buying company may have to its suppliers' other customer relationships based on two dimensions; (1) general or specific connections between relationships, and (2) direct and indirect connections between the relationships (see Figure 1). With 'general' we mean that the relationship between the focal customer and the supplier is connected to the supplier's relationship to a group of other customers where they use or develop a common feature of the supplier. With 'specific' we mean that the relationship between the focal customer and the supplier is connected to one particular relationship between the supplier and another customer. With 'direct' we mean that the relationship between the focal customer and the supplier and relationship between the supplier and another customer is connected through the direct contact between the two customers (i.e. we have a unitary triad). With 'indirect' we mean that the relationship between the focal customer and the supplier and relationship between the supplier and another customer is connected through the relating function of the supplier (i.e. we have a serial triad).

The four types of approaches illustrated in Figure 1 are associated with different challenges and are suitable in different situations depending on what the buying firm wants to achieve.

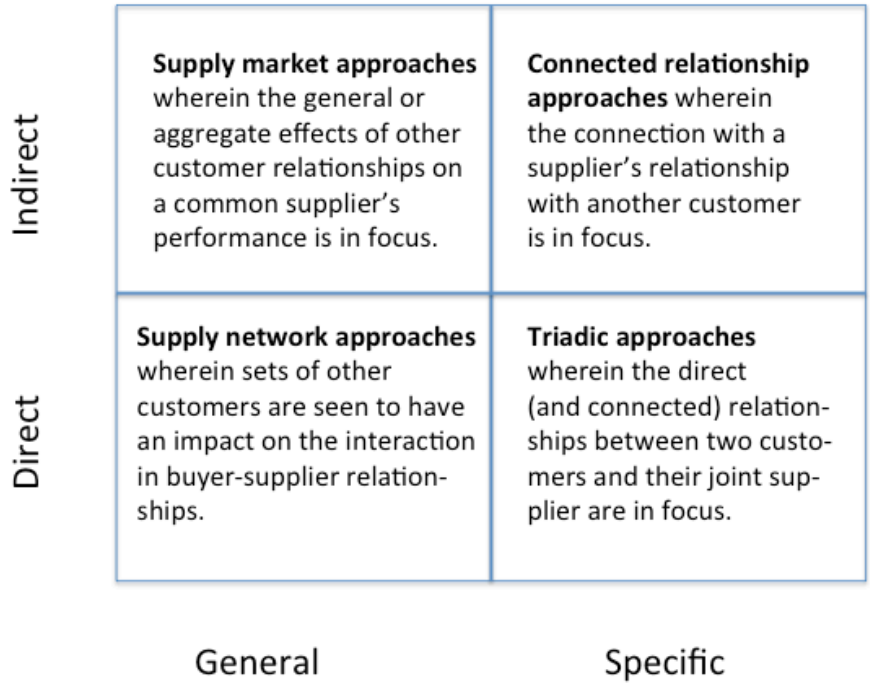


Figure 1. Four types of approaches to suppliers' other customer relationships.

The paper draws on the industrial network approach in which relationships are (assumed to be) connected both directly and indirectly and with various effects for the parties involved in the connected relationships (see e.g. Håkansson and Snehota 1995). The aim of the paper is twofold. First, it aims to scrutinise buying companies' approaches to its suppliers' other customer relationships. This part relies on a review of the purchasing management literature. Second, it aims at discussing the situation in which such connections are specific and indirect. This part relies on a set of examples from previous studies.

In the next section we review literature addressing how the four approaches have been captured by the literature. The third section presents examples of one of the identified approaches; specific indirect connections between two buyer-supplier relationships with a common supplier. The ten examples have been picked out of a number of previous case studies. In the fourth section we analyse the examples by addressing the specificities in the specific indirect connections. In the last section we discuss managerial implications in terms of how buying firms can approach the connections with its suppliers' other customer relationships. We pay particular attention to situations in which it might be advantageous to relate specifically but indirectly to a supplier's other customer relationship.

## THEORETICAL BASIS

Whether or not inter-organisational networks can be managed has been an issue subject to debates among scholars focusing on industrial networks (see e.g. Ford et al. 1998, Möller and Halinen 1999 and Håkansson and Ford 2002). The discussion of 'management of' or 'managing in' relationships and networks is often also referred to as the management paradoxes in networks (Håkansson and Ford 2002). Möller and Halinen (1999) develop a network management framework from managing relationships to network visioning, e.g. analysing industries as networks. In a similar vein, Ritter, Wilkinson and Johnston (2004) discuss how managing in networks concerns different managing efforts related to the levels of individual firms, individual dyads, the relationship portfolio, connected relationships and the network. Furthermore, Ford et al. (2003) introduce a model of managing in networks consisting of the three elements; 'network pictures', 'networking' and 'network outcomes' to help managers who are trying to act and react in business networks.

In a purchasing and supply context the issue of how to manage (in) supply networks has been a theme for the last couple of decades (see e.g. Knight and Harland 2005, Harland et al. 2001, Johnsen et al. 2000). The contributions within the field of supply networks are somewhat different when it comes to starting point, level of analysis and focus. One stream of research has focused on the structure of supply networks and how they can be characterised. Mills et al. (2004) summarise a lot research on supply networks in a comprehensive review and claim that the view of the focal firm's whole supply network is important in order to compare performance in its multiple supply chains. Furthermore, they emphasise the buying firm's network position and how this position is related to the structure of the supply network. Another approach to analysing the structure of supply networks is represented by the use of models for classification of supply networks. For example, in Lamming et al. (2000) and Harland et al. (2001) a model for classifying supply networks based on two dimensions is presented; 1) the degree of supply network

dynamics and 2) the degree of the focal firm's supply network influence. Based on these two dimensions the authors develop a 2x2 matrix and discuss four supply network types. A similar framework has been presented in Pedersen et al. (2008) where a 2x2 matrix is developed based on 1) The buying firm's context and 2) The supplier's context. When analysing the supplier's context an important issue is to find out whenever the buying firm is the most important customer or is one of several important customers for the supplier in focus. Most of these contributions focus more generally on the structure of the supply network, where the organising and formation of the supply network in different tiers etc. is important. Thus, this literature only indirectly addresses the effects of other customers on the suppliers' offers and/or how they might have an impact on the interaction and/or exchange in the focal buyer-supplier relationships.

Another relevant stream of research is concerned with the concept of triads used within the context of supply chain or network research (Dubois and Fredriksson 2008, Choi and Wu 2009, Li and Choi 2009, Wynstra et al. 2015). In a debate both Choi and Wu (2009) and Dubois (2009) acknowledge the importance of studying triads when it comes to understanding the structure and development of supply networks, but they disagree regarding whether or not triads can be considered a sufficient point of departure for studying and analysing the supply network in view of (other) connected dyads in the extended network. Choi and Kim (2008) also discuss how a supplier is part of a larger context, and discuss the structural embeddedness of the supplier in which both the supplier's other customers, the supplier's suppliers and other suppliers of the buying firm is of importance. This is further developed by Van et al. (2015) introducing 'the nexus supplier' who's position and ties in the network can affect the buying firm's performance.

A few contributions have focused specifically on different customers of a focal supplier and how the supplier can create positive connections across its customer relationships (Nobeoka et al. 2002, Mota and de Castro 2005). Nobeoka et al. (2002) found that a supplier has a better chance of improving its products if it has multiple customers, i.e. a customer may assist the supplier in developing different knowledge and capabilities which can meet the needs of several of the supplier's other customers. However, the authors also emphasise that to be able to benefit from having multiple customers, the customers must be somewhat related; e.g. have similar needs or requirements based on their operations within the same industry. Furthermore, while Holmen et al. (2013) illustrate how a buying firm have ideas of how to draw on specific suppliers' other customer relationships, they also show how their perceptions of such connections may be based on obsolete, incorrect, incomplete or generalised views of their suppliers' other customers. Hence, the buying firm's network picture of the supplier's network can be difficult to use for managing in a supply network.

In general terms every firm can be seen to economise on how it relates its set of relationships either through scale and scope, integration and/or innovation (ref). Najafi (2015) describes and analyses how a buying firm economises in these dimensions in developing its supply network. The economising relies on both general and specific connections among relationships.

The next section focuses on empirical examples of indirect connections between two specific customer relationships of a joint supplier. Thereafter follows analysis of the

characteristics of such connections followed by a discussion on how buying firms may strategize through connections with its suppliers' other customer relationships.

## EMPIRICAL EXAMPLES OF SPECIFIC INDIRECT CONNECTIONS

In this section we present ten brief examples of specific indirect connections between two customers to a joint supplier. The examples have been picked out of a ten case studies, all with a broader and different scope than the specific indirect connectedness between buyer-supplier relationships that we aim at illustrating in this paper. Moreover, in some of the cases the specificity with regard to one particular (other) customer relationship was not made explicit in the referenced paper or book because of the focus and scope of the case in those publications.

*Example A – Choosing a supplier of testing services*
*(Gressetvold, Holmen and Pedersen, 2009)*

TI is located in Kongsberg, Norway, and provides testing services involving vibration, shock, and temperature cycles. SC is a project-based subsea company buying testing services for TI. Until now SC has used TI for several types of tests. However, TI cannot do one particular test, so for such tests SC has used NE. Through the collaboration with NE, SC has become aware that NE now also performs vibration, shock, and temperature fluctuation tests. For logistical reasons, it is beneficial to gather all the tests at one supplier. Therefore, a challenge in the relationship is whether SC shall keep on using the services of TI, or eventually move much of the activity to NE. Another factor is that TI is located in the same cluster as BE (Kongsberg), which performs nitrogen filling and oil filled rammers. If SC continues to use BE, it may be less advantageous to move all testing activity to NE. An additional consideration is that some of the activities of BE perhaps will be moved to Trondheim, Norway, at the request and wish of another customer, RO, also located in Trondheim. Then it would be possible to perform vibration and temperature fluctuation testing in Trondheim. Generally, it is perceived as tiresome to travel to Kongsberg to perform the tests.

*Example B – Coordinating the supplier's production*
*(Gressetvold, Holmen and Pedersen, 2009)*

Both SC and RO use SI as a supplier of electronics. Once, SC has a critical rush order, since there is a very short time window each year during which their systems can be installed in the Arctics. However, when SC called SI they were told that they were placed later in the production queue, behind RO. SI did not want to switch the two orders in the queue. However, they said that if RO approved of it, they would do so. SC called RO, and it so happened that the order was not critical in terms of time, and therefore they allowed SC to jump over them in the queue. Furthermore, SC believes that the same logic would apply to other local customers of SI.

*Example C– Developing the supplier's capabilities for handling component supply*
*(Holmen, Gressetvold and Pedersen, 2002)*

VingCard is the world-leading manufacturer of card operated locking systems. At some point, VingCard started to consider using ASICs instead of ICs for the locking systems. They established contact with the company Nordic VLSI and Nordic VLSI offered to handle all

design issues related to an ASIC for VingCard. Thereby, VingCard needed only to supply Nordic VLSI with functional specifications and information on interfaces between the ASIC and other parts of the locking system. Furthermore, Nordic VLSI suggested that it also handle the component supplies of VingCard's ASIC. At this point in time, Nordic VLSI did not actually have the capabilities for handling component supplies. However, Nordic VLSI had just made a policy decision to start on offering such services. Furthermore, Nordic VLSI had some contact with a manufacturer of ASICs, Alcatel Microelectronics, and believed that it would be possible to handle the component supplies for VingCard given that Alcatel Microelectronics was interested in developing a relationship to Nordic VLSI, including teaching Nordic VLSI how it should handle component supplies. In parallel with these processes, Nordic VLSI was involved with another customer: Nobø. Nobø is a manufacturer of heaters and adjacent equipment for households and professional markets. In the early 1990ies, Nobø decided that it would try to make use of ASICs in its products. Since Nobø had never used ASIC technology before, it had limited capabilities concerning ASICs. Furthermore, Nobø did not wish to develop, own capabilities for ASIC design and 'handling of component supplies'. Therefore, Nobø contacted Nordic VLSI with the intention that Nordic VLSI should handle all issues related to the design and the handling of supplies of physical ASICs. Nordic VLSI's efforts to developing the capabilities were intensified, and received more priority, since two customers were requesting them.

*Example D – Developing the supplier's capabilities for producing and testing ex-classified products (Aune, Holmen and Pedersen, 2013)*

Electra is an important supplier of Sensoil. Sensoil relies on one of Electra's other customers, Ramo, to develop some of Electra's capabilities. Ramo has been heavily involved in developing Electra's capabilities and facilities for producing and testing ex-classified products. These capabilities are important for Sensoil. However, Sensoil has been able to utilize Electra's capabilities in this area to its own benefit without being actively involved in developing them. Sensoil has stressed the need for Electra to develop such capabilities and, thereby, it has influenced the development, but it has left it to Electra to bring about the required development "on its own", or together with other counterparts. Sensoil is aware of Electra relying on Ramo when developing the required capabilities. However, this is mainly due to Sensoil and Ramo being part of the same cluster, and even so, there is no dialogue between Sensoil and Ramo, and no attempt at joint coordination, related to developing Electra's ex-capabilities and facilities for ex-classified products.

*Example E - Using specific resources*
*(Holmen, 2001)*

For circular concrete pipes, the requirements for the tolerances of a pallet are generally lower (than for non-circular pallets) and circular pallets are therefore mostly made by pressing. However, as the costs of making a pressing tool are large, the costs are often shared by a number of customers. If Pedershaab A/S expects to be able to re-use a particular pressing tool, Pedershaab A/S often bears part, or all of the costs of making the tool or the customer pays a certain percentage of the total costs of making it. If Pedershaab A/S does not expect to make a large number of pallets by using a particular pressing tool, the first customer who orders pallets made by a new one pays the costs of making it. If the pressing tool is subsequently used for making pallets for other customers, these customers pay a share of the costs of making the pressing tool; the customer who had originally paid the pressing tool costs then receives a refund. In this particular case, the pressing tool used for making the pallet

determining the socket profile was not developed, but the 800/1200 pressing tool originally developed in 1962 for a German customer was re-used in the same way as it had been for other German customers, to an Italian customer in 1978 and a Belgian customer in 1979.

*Example F – Drawing on the supplier's specific relational experiences (Holmen and Aune (2013).*

In their relationship to Metal, ProductivePower have learned to how customers can involve their suppliers in the early stages of innovation, implying higher levels of cooperation and open dialogue before the specifications are set. ProductivePower see the value of such arrangement and believe that their other customers should also make use of such arrangements towards them. While many of the customers have not wanted to pursue this, Paper&Pulp have tried out the early involvement in innovation arrangement suggested by ProductivePower, and make suggestions as to how the arrangement can be adapted to Paper&Pulp. However, generally, Paper&Pulp prefers to develop specifications internally and involve their suppliers later in the innovation process, since this allows them to create rivalry among suppliers in a competitive bidding setting. Thereby, how Paper&Pulp should involve ProductivePower in innovation remains a point of contention and discussion, since ProductivePower believes that Paper&Pulp should adopt the arrangements ProductivePower face in the relationship with Metal, and with some other customers.

*Example G - Drawing on another customer's specific requirements on productivity increases (Dubois, 1998)*

Heavy Machining Workshop (HMW) had six subcontracting customers that were all quite large firms compared to HMW. Four of them were vehicle manufacturers, two of which were producers of heavy trucks; the other two customers also produced heavy equipment. There were similarities among the activities carried out for all six customers although the range of components produced for the individual customers varied in between 5 and 100. HMWs production was almost completely order-based and the delivery frequency was about one or twice per week to each customer, the time from order to delivery ranging between four days and a week.
The subcontracting customers were considered very demanding not least concerning continuous cost reductions. As a consequence of one of the customers, Volvo, requiring cost reductions of 15% over a two-year period, HMW had to find new materials, production techniques, methods and designs to be able to reach the targets. Drawing on these cost reduction efforts enabled SweFork to 'piggy-back' on HMW's specific adjustments to Volvo's demands although the use of new production methods and materials required adjustments of e.g. the physical dimensions of connected components etc.

*Example H - Not drawing on another customer's specific requirements on productivity increases (Dubois, 1998)*

A car producer was developing a technical system of great importance for the technical performance of its coming car model. One key component in this system was developed jointly with a supplier that was specialising on this kind of component and that was engaged in a relationship with one of the world's largest and most demanding car producers in the field – especially in this new area of electronic systems. While developing the technical system the customer perceived it as important not to give the supplier insights into any other connected components or other information regarding the technical context in which the

component should be used since confidentiality was considered of highest importance. This resulted in the supplier suggesting a large number of technical solutions that did not fit into the system. The customer could not specify the requirements in such a way that the supplier could develop the component on its own. The customer did not know the technology of the component, and the supplier was not allowed to participate in the testing of how the component worked together with the other components in the system. Moreover, the customer's engineers did not know anything about the production technology used by the supplier. The supplier produced around a million customised components a year for its main customer, and had been able to develop fully automated lines in which customisations could be made at the same time as very high production efficiency could be maintained. In the end the firms agreed on a technical solution that was not technically superior to the ones already produced by the supplier for its main customer. Furthermore, the design of this component made it impossible for the supplier to produce it in its fully automated lines. Instead it was manually assembled in a corner of the factory. The production volumes were about 20,000 a year, and to develop automated production solutions with considerably higher efficiency and lower failure rates approximately half a million items were required. Consequently, the price for the components turned out to be twice the price paid by the supplier's other customer.

*Example I – Relating to another customer's purchasing behaviour (Holmen and Pedersen, 2010)*

V-contractor has made a supply network initiative, and has invited a number of subcontractors to take part in the initiative. O-plumbing is one of many business units within a large international corporation manufacturing various types of plumbing products and offering different subcontractor services. O-plumbing offers both plumbing and ventilation services, and has no manufacturing of products. The firm has approximately 640 employees in Norway. When the supply network initiative was started up, one concern was of too little capacity at O-plumbing. O-plumbing considered V-contractor's supply network initiative in relation to their overall customer strategy. In general, O-plumbing wanted to have two main customers, who would have a collaborative posture towards O-plumbing with a high degree of repeat purchase, and who would pull O-plumbing in similar directions when it comes to how construction project are organized and carried out. In addition, O-plumbing wanted to have a number of minor customers who could occasionally use that part of O-plumbing's capacity which, at any point of time, was not dedicated to projects for the two main customers. O-plumbing knew that the present other large customer SK, had a way of organizing their work which differs widely from V-contractors that it is difficult to serve both. Thus, O-plumbing knew that when they joined the initiative, they would have to find a replacement customer for SK. Furthermore, another large customer of O-plumbing, R-contractor has a manner of interacting within a construction project which differs markedly from that of V-contractor. O-plumbing views it a strenuous to work according to two such different logics, and therefore intends to phase out and, in the future end, the relationship to R-contractor.

*Example J - Relating to another customer's specific needs with regard to location and assortment (Dubois 2003)*

As part of a supplier base reduction programme, a chemical firm buying a broad range of Maintenance, Repair and Operations (MRO) supplies decided to develop its relationship with a handful of key suppliers who, as distributors, could take on different parts of their needs of these product assortments. In order to decide on the content of the relationship with the key

suppliers the buying firm needed to scrutinise its demands on e.g. assortments, logistics solutions and administrative routines. However, starting to interact with the potential key suppliers they also realised that the costs for different set-ups varied substantially and that this was owing to the suppliers' other customers' demands on the suppliers. Some of these demands and, thus, solutions developed within other relationships of the suppliers' were highly specific. In one such case another customer, located close to the focal buying firm, had together with one of the potential MRO-suppliers (specialising on tools and equipment) developed a customised assortment and delivery routines that would also fit with the demands of the focal firm. By applying almost the same set-up the costs could be substantially reduced compared with other solutions since these were over-capacity in the trucks delivering twice per week and the local store was already adapted to the assortment.

## ANALYSIS

In this section we analyse the ten examples of indirect specific connections between two customer relationships of a common supplier from the buying firms' perspective. Figure 2 illustrates the situation. The focal customer Cf in Figure 1 is connected with another customer relationship of its supplier's (S) without having a direct relationship with the customer (Cx).

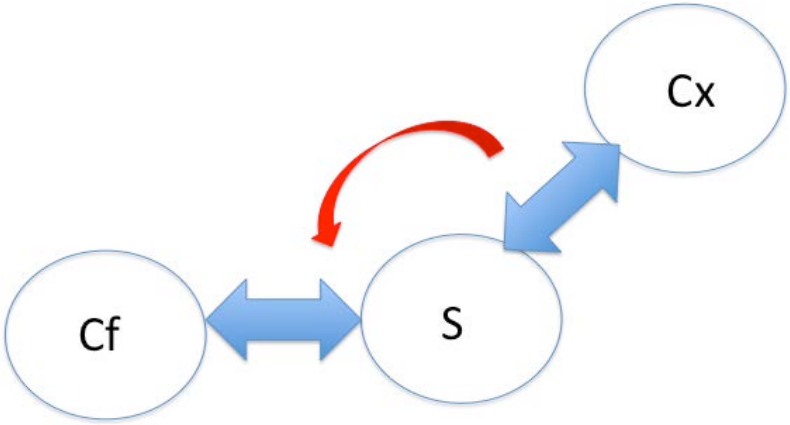


Figure 2. Specific indirect connection between two customer relationships with a common supplier.

In Table 1 we summarise the set of examples of specific connections between buyer-supplier relationships joined by a common supplier presented in the previous section. Table 1 includes brief descriptions of the situation, specificities in the relational connection together with comments and references to the papers from which the examples have been borrowed.

| **Example** | **Description** | **Specificities in the relational connection** | **Comments** | **Reference** |
|---|---|---|---|---|
| A. Choosing a supplier of testing services | Cf utilises S for testing activities. The relocation of S's activities, desired by Cf, depends on Cx. | Location in addition to more general commonalities in the needed testing activities. | The example concerns a choice between two specific suppliers where one may gain an advantage over the other owing to a | Gressetvold, Holmen and Pedersen |

| | | | | |
|---|---|---|---|---|
| | | | specific relational connection. | |
| B. Coordinating the supplier's production | Cf and Cx utilise the same production facilities at S and may help one another by making different prioritisations of their respective orders. | Joint use of specific production facilities at the supplier's. Differences in lead-time requirements are handled (at the order level) by the two customers. | This example involves direct communication between Cf and Cx who are not involved in a business relationship. | Gressetvold, Holmen and Pedersen |
| C. Developing the supplier's capabilities I | Cf requires that its design supplier S develops capabilities for component supply handling. S intensifies its efforts as a result from Cx having similar specific demands. | Similar demands on capability development | The example illustrates how to individual customers influence a joint supplier in a specific direction. | Holmen, Gressetvold and Pedersen, 2002 |
| D. Developing the supplier's capabilities II | Cf relies on that S develops particular capabilities as a result from its interaction with Cx. | Similar demands on capability development. The buying company relies on another customer (to their joint supplier) to develop the required capabilities. | The example illustrates how one buying company relies on another to develop the joint supplier. | Aune, Holmen and Pedersen, 2013 |
| E. Using specific resources | Cf adapts its requirements for S to be able to utilise a specific production tool developed for its previous customer Cx many years back in time. | Use of a specific resource. | Specific resource use in a sequence that entails adjustments from the buying firm. (Also an example of pricing issues from the supplier's perspective.) | Holmen, 2001 |
| F. Drawing on the supplier's specific relational experiences (or not) | Cf is subjected to demands on early involvement in joint product development by its supplier S who has experienced the benefits of such arrangements in its relationship with Cx. | How to work together in product development. | In this example Cf is reluctant to draw on the supplier's suggested practices. | Holmen and Aune, 2013 |
| G. Drawing on another customer's specific requirements on productivity increases | Cf is a rather small customer to S whose main customer Cx demands productivity increases resulting in introduction of new production technology and materials. To be able to draw on these developments Cf needs to adapt its specifications and its other components. | Specific technical features in the production impacting on product features. | A more experienced and larger buying firm sets the direction for development of the shared production facility at the supplier's. | Dubois, 1998 |
| H. Not drawing on another customer's | Cf is a new and small customer of S whose main customer Cx | Specific technical features of the products cannot be | Negative aspects of dissimilarity among product features result | Dubois, 1998 |

| | | | | |
|---|---|---|---|---|
| specific product features (with an impact on productivity) | demands high volumes of electronic components produced in an integrated and highly efficient production facility. Cf's particular demands entail that their components are produced manually 'on the side' at a considerably higher unit cost. | dealt with in the same production process. | in higher costs for the Cf. | |
| I. Relating to another customer's purchasing behaviour | Cf takes a supply network initiative to increase the collaboration within its projects. S experiences that two of its other customers Cx1 and Cx2 differ too much in their approaches and therefore remains with Cx1 whose approach is similar with Cfs intentions. | The buying firm's purchasing approaches. | | Holmen and Pedersen, 2010 |
| J. Relating to another customer's specific needs with regards to location and assortment | Cf reconsiders its purchases of tools and equipment from a set of distributors and finds that S has a customer Cx whose assortment and location matches the needs of Cf. | Assortment and location. | Some similarities in the assortment needed was already present and could be further developed together with S based on the common needs with Cx. | Dubois, 2003 |

Table 1. Summary of the examples of specific connections between indirectly connected relationships

The examples illustrate a set of features that characterise the indirect connections between two (or more) specific customer relationships with a common supplier. We will address three related aspects of these features with potential managerial relevance. First, we deal with similarities and dissimilarities of different kinds in the connections. Second, we deal with aspects of influence, and third, with time and sequence.

## Similarities and dissimilarities

Similarities among customer needs are generally considered as being of importance in buying situations (Nobeoka et al 2002). The examples point at a range of features in which similarities in the specific connections between the two relationships can be of key importance; joint use of specific production facilities or tools (A, B, E,G), location (A, J), purchasing approaches (I), product development practises (F), assortments (M) as well as similarities in efforts to develop the capabilities of the joint supplier (C, D). These similarities may be connected with particular dissimilarities such as different needs with regards to rush orders (B). Other than that, specific dissimilarities may also influence on buying decisions in different, negative, ways (H, I). The costs involved in not realising dissimilarities of certain kinds are also highlighted (H).

Moreover, in order to develop and exploit specific similarities in the connection between two customer relationships the supplier needs to interact with the two customers in parallel or in sequence.

### Influencing and being influenced

In order to benefit from similarities, adaptations are needed by the buying firm, or by the other customer, or both. Hence, the connection either influences the buying firm's relationship with the supplier, and/or this relationship influences the supplier's relationship with the other customer. How and when adaptations are made are related to the time and sequence aspects of the specificities in the connections and thus to action and reaction from the buying firm's perspective. In both cases, the buying firm's interaction with the supplier is key to achieve the potential benefits in the connected relationships. Several such examples of proactive interaction with the supplier based exploring and exploiting on specific connections are highlighted in Table 1 (e.g. D and J). There are also examples of suppliers trying to push one of the customers into the direction of the other (e.g. F).

### Time and sequence

Some of the connections illustrated in the examples are explored and exploited in parallel while others appear in sequence. The sequential events, in turn, can be either related (with a potential effect for both customers) or unrelated (i.e. with effects only for one of them).
In addition, the connections may concern features which were created in the past (old), presently exist (contemporary), or may be created in the future (imagined) – in either of the relationships. Considering the two relationships involved, the relationship between the buying firm and the relationships between supplier and the other customer and the supplier, two types of parallel connections are relevant to consider, that is present-present (B, C, H and J) or future-future (A), since past-past combinations are not relevant for creating connections but only for understanding past connections. Considering sequencial connections, these may be either present-past (E and F), present-future (I), or possibly future-present, or past-future. Furthermore, they may cover several periods in one or both relationship(s), for example present&future-present&future (D), present-past&present (G) or other combinations such as present-past&present&future, past-present&future, present&future-past&present, and so forth.

## CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The four identified types of approaches to suppliers' other customer relationships fit in different situations and are associated with different managerial challenges and opportunities. From a research point of view; supply market approaches, supply network approaches and triadic approaches have been subject to research attention while 'the connected relationship approach' concerned with specific indirect connections between two buyer-supplier relationships has not. In this paper we have paid particular attention to this type of connections between buyer-supplier relationships. Indirect specific connections have been found to be interesting for managerial purposes from a buying firm's perspective. Specificities in the relationship that a supplier maintains with one of

its other customers might be possible to explore and exploit in different ways and for different purposes.

An implication for the buying firm that wants to explore such connections is that it not only increases its alertness to the past, present and intended future of particular suppliers' other customer relationships, but also encourages explicit attention to and search for opportunities in the connections. This is so, because direct connections may arise from old, contemporary, as well as imagined elements of the other customer relationships. Furthermore, while the supplier may continually be on the look out for opportunities for making connections across its customer relationships, more opportunities for connections many be discovered or found if the customer actively encourages the supplier to search for, and possibly also engages in explicit and systematic discussions on, opportunities for connecting. To actively search for or discover specific connection opportunities, the buying firm may pose questions to the supplier such as:

- What have you previously done in other customer relationships?
- What are you presently doing in other customer relationships?
- What are you planning to do (or considering doing) in other customer relationships?

While indirect specific connections between two buyer-supplier relationships to a common supplier can sometimes be identified by the supplier, the potentials of the situation from a managerial point of view depend on one (or both) of the buying firm's awareness of the supplier's relationship with the other customer and of the specific features of interest in the other buyer-supplier relationship. Based on the finding that buying firms' knowledge about its suppliers' networks can be obsolete, incorrect, incomplete, or based on general views, Holmen et al (2013) suggest strategies for gaining network insight in order to find opportunities. Ranging from systematic search to chance discovery such strategies can play a key role in buying firms' efforts to increase their buying performance.

REFERENCES

Aune, T.B., Holmen, E. and Pedersen, A.-C. (2013) Beyond dyadic supplier development efforts: The multiple roles of the network in bringing about supplier development. *The IMP Journal*. vol. 7 (1), 91-105.

Choi, T.Y. and Wu, Z. (2009) Triads in supply networks: theorizing buyer-supplier-supplier relationships. *Journal of Supply Chain Management* 45 (1), 8-25.

Choi, T.Y. and Wu, Z. (2009) Taking the Leap from Dyads to Triads: Buyer-Supplier Relationships in Supply Networks. *Journal of Purchasing and Supply Management*, 15, 4, 263-266

Choi, T. Y. and Kim, Y. (2008) Structural Embeddedness and Supplier Management: A Network Perspective. *Journal of Supply Chain Management*, 44, 5-13.

Dubois, A. (1998) *Organising industrial activities across firm boundaries*. Routledge, London.

Dubois, A. (2003) Strategic cost management across boundaries of firms. *Industrial Marketing Management*, 32 (5), 365-374

Dubois, A. and Fredriksson, P. (2008) Cooperating and competing in supply networks: Making sense of a triadic sourcing strategy. *Journal of Purchasing and Supply Management* 14 (3), 170-179.

Dubois, A. (2009). Comments on "Taking the Leap from Dyads to Triads: Buyer-Supplier Relationships in Supply Networks" by Choi and Wu, To Leap or nor to leap: Triads as an Arbitrary Subset of Networks of Connected Dyads, *Journal of Purchasing and Supply Management*, 15, 4, 267-268.

Ford, D., Gadde, L.-E., Håkansson, H. and Snehota, I. (2003) *Managing Business Relationships*. Wiley, Chichester.

Gadde, L.-E., Huemer, L. and Håkansson, H. (2003) Strategizing in industrial networks. *Industrial Marketing Management* 32, 357-364.

Gressetvold, E., Holmen, E. and Pedersen, A.-C. (2009) *Klyngeutvikling og utvikling av bedriftsnettverkene til kjernebedriftene.* Rapport - NEC Instrumentering (Report in Norwegian)

Harland, C.M., Lamming, R.C., Zheng, J. and Johnsen, T.E. (2001) A taxonomy of supply networks. *The Journal of Supply Chain Management*, Fall.

Holmen, E. (2001) *Notes on a conceptualisation of resource-related embeddedness of interorganisational product development*, Unpublished doctoral thesis. Sønderborg: University of Southern Denmark .

Holmen, E., Gressetvold, E. and Pedersen, A.-C. (2002) *Capabilities in Context: The Usefulness of the Concept of Episodic Network Contexts of Relationships for Understanding how a Firm Develops a New Capability*. Proceeding from the IMP Conference.

Holmen, E. and Pedersen, A.-C. (2010) How do suppliers strategise in relation to a customer's supply network initiative?. *Journal of Purchasing and Supply Management,* 16 (4).

Holmen, E. and Aune, T.B. (2013) *The House of Supplier Capabilities: A Tool for Scrutinising the Ways in which Different Customers Deploy and Develop the Capabilities a Key Supplier* in Aune, T.B. *2013Managing Suppliers in Business Networks: Exploring Innovation, Capability Development and Network Pictures,* Doctoral theses at Norwegian University of Science and Technology.

Holmen, E., Aune, T.B. and Pedersen, A.-C. (2013) Network pictures for managing key supplier relationships. *Industrial Marketing Management* 42, 139-151.

Håkansson, H. and Snehota, I. (1995) *Developing Relationships in Business Networks*. London: Routledge

Håkansson, H. and Ford, D. (2002) How should companies interact in business networks? *Journal of Business Research* 55, 133-139.

Johnsen, T., Wynstra, F., Zheng, J., Harland, C. and Lamming, L. (2000) Networking activities in supply networks. *Journal of Strategic Marketing* 8, 161-181.

Knight, L. and Harland, C. (2005) Managing supply networks: Organizational roles in network management. *European Management Journal* 23 (3), 281-292.

Lamming, R.C., Johnsen, T.E., Zheng, J. and Harland, C.M. (2000) An initial classification of supply networks. *International Journal of Production and Operations Management*, 20, 6, 675-91.

Li, M. and Choi, T.Y. (2009) Triads in service outsourcing: Bridge, bridge decay and bridge transfer. *Journal of Supply Chain Management* 45 (3), 27-39.

Mills, J., Schmitz, J., & Frizelle, G. (2004) A strategic review of supply networks. *International Journal of Operations & Production Management.* 24 (10),1012-1036.

Mota, J and de Castro, L.M. (2005) Relationships portfolios and capability development: cases from the moulds industry. Journal of Purchasing & Supply ;Management, 11, 42-54

Möller, K. and Halinen, A. (1999) Business Relationships and Networks: Managerial Challenge of Network Era. *Industrial Marketing Management*, 28, 413-427.

Najafi, N. (2015) *Economizing on supply network development*. Doctoral theses at Chalmers University of Technology, Forthcoming.

Nobeoka, K., Dyer, J. H., & Madhok, A. (2002) The influence of customer scope on supplier learning and performance in the Japanese automotive industry. *Journal of International Business Studies.* 33(4), 717-736.

Pedersen, A.-C., Torvatn, T. and Holmen, E. (2008) Towards a Model for analysing Supplier Relationships when developing a Supply Network. *The IMP Journal,* 2 (2).

Ritter, T., Wilkinson, I.F. and Johnston, W.J. (2004) Managing in Complex Business Networks. *Industrial Marketing Management*, 33,175-183.

Van, T., Choi, T.Y., Kim, Y. And Yang, Y. (2015) A theory of the nexus supplier: A critical supplier form a network perspective, *Journal of supply chain management*, 51,1, 52-66.

Wynstra, F., Spring, M. and Schoenherr, T. (2015) Service triads: A research agenda for buyer-supplier-customer triads in business services. *Journal of Operations Management*, 35, 1-20.