

Learning Across Firm Boundaries

The Role of Organisational Routines

by

Lena E. Bygballe

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the degree of Dr.Oecon

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Lena E. Bygballe:
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ABSTRACT

The main purpose of the study is to contribute to the understanding of learning across firm boundaries. Such learning has often been associated with so-called knowledge-intensive firms engaged in formal learning collaborations in order to develop new products and technology. In this study, on the other hand, I look at learning in ongoing relationships between customers and suppliers in industrial settings. I argue that these relationships entail just as much learning as relationships set up with more explicit learning objectives. However, this type of learning is as yet unspecified in the literature.

Building upon an adaptive perspective of organisational learning and an industrial network approach to business relationships, I address the topic by linking learning and relationships through the means of routines. Routines embed interaction between two relationship parties, co-ordinating the use and combination of resources involved in the relationship. When the parties interact through engaging in various routines, new experiences are gained, providing possibilities for learning and changes in routines and resource interfaces. As such a main role of routines in relationships is that they not only store existing knowledge but provide further possibilities for learning as well. An important dimension of routines is that they intersect, not only within a relationship but also between relationships. This implies that learning resulting in changes in one routine may propagate, leaving imprints beyond the original learning location.

The organisational learning literature, here represented by the adaptive perspective, informs us about the learning process itself. However, the main focus within this perspective is on learning related to individual routines. The industrial network approach on the other hand, informs us about the relationship context in which the learning takes place, and directs our attention to the connectedness of routines and relationships, and subsequently the implications of learning.

A single, qualitative case study with three sub-cases is used to investigate learning in business relationships in this thesis. The empirical study concerns one focal customer company and three of its supplier relationships. Combining the insights from the two theoretical perspectives referred to above forms the basis for analysing learning in these relationships. Learning is here related to changes in the inter-organisational routines embedded in the relationships.

The findings from the study illustrate how and why routines may be used as a tool in order to investigate and understand important aspects of learning in ongoing business relationships in industrial settings. They illustrate how learning is reflected in such relationships when routines are in focus. From the study we see that learning is a key process in all types of relationships, even in those that apparently contain low involvement and standardised interfaces. Such relationships are often considered to contain less learning than high involvement relationships. However, this study shows that the label “low involvement” is not very evident, since there is always a need for high involvement in order to learn about and adapt to a business partner. Compared to the more traditional inter-organisational learning literature, which focuses on learning between companies as a means to create change, learning in the types of relationships studied in this thesis is primarily directed towards maintaining and re-establishing stable and efficient exchange processes, i.e. utilising existing routines and resource interfaces.

The findings also illustrate the importance of considering and taking into account implications of learning beyond its obvious scope, since learning often propagates. One important implication of this feature of learning is that it is not always deliberate or planned. Sometimes changes or learning by some actors and in some relationships trigger learning or a need to learn by other actors and in other relationships.

Together these findings contribute to fill the gap in the theory, offering an extended understanding of learning in ongoing business relationships.

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This thesis is based on a case study of one focal company, WWD and three of its supplier relationships. I would like to thank all the people in these companies that have enabled the data collection. Particularly my key contact at WWD has been an invaluable source of information. I really appreciate the time that you have spent and your openness and trust.

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Chapter 1. Setting the scene

1.1 Introduction

In May 2004, WWD, a world-wide distributor of products and services to the marine industry, signed an exchange contract with a new supplier, a Chinese producer of equipment to the international welding industry. Prior to the signing, intense discussions and negotiations had taken place. One of the most difficult issues to agree upon had been the terms of payment. According to WWD's responsible procurement manager, more time had been spent on discussing how to pay rather than what to pay. WWD's existing routine for handling invoices and payments were used for all its suppliers. According to this routine, suppliers would send their invoices to WWD's international distribution centre (IDC) in Rotterdam, where the invoices would be registered in the Enterprise Resource Planning (ERP) system. As soon as the respective shipments were booked in, the corporate financial department at the Head Office in Oslo would automatically authorise payment.

The new supplier were, however, unwilling to accept WWD's terms of payment, instead insisting on prepayment according to their own routine. None of the parties was initially willing to change their existing routines. For WWD, prepayment did not fit into its existing system and routine. In addition, WWD did not automatically trust the new supplier, as the parties had never done business before. Prepayment was, therefore, considered as being too risky. However, after lengthy discussions the parties finally agreed upon the following: for the first shipment, WWD would pay 50% as soon as WWD staff members had manually approved the goods for being shipped from China. The remaining 50% would be paid when the goods had arrived and been booked in at the IDC in Rotterdam. For the shipments to follow, WWD would pay within 14 days after date of shipment according to the Bill of Lading (BOL), proving ownership of the goods. A copy of the BOL would be sent to Rotterdam within 5 days after shipment.

According to the new agreement, WWD had to pay the supplier in advance for the shipments to follow. This new routine was not in accordance with WWD's existing routine and system of automatic payment being dependant upon the book-in of goods. Several problems were to follow. WWD warehouse staff in Rotterdam would receive copies of the BOL together with the invoice. The documents would then be given manually to the responsible

procurement manager. He would in turn check if the invoice was in accordance with the original purchasing order, and if so, sign the invoice and forward it to the financial department in Rotterdam. The financial department would then ask the corporate financial department at the Head Office to authorise the payment. Problems would occur, however, when the procurement manager was out of the office and the invoice remain on his desk until his return. Hence, sometimes payment would exceed the agreed upon 14 days. This way of handling the invoices sometimes also resulted in the supplier not being paid at all, while at other times it would be paid double. Furthermore, complications arose when deliveries were incomplete. Given the above problems, it was recognised that the new routine did not work very well and had to be improved upon. WWD saw two possibilities. Either they had to make yet another effort to try to convince the supplier to adjust to their existing, automatic payment routine, or they would have to find a way to adjust their own system to include the new routine. Given the situation, the latter alternative seemed to WWD as being the most likely to succeed.

In a meeting in November 2003, WWD and their Swedish supplier of gas welding products were once again discussing the supplier's delivery performance as they often had done in the past. "The graphics still look like a roller coaster!" WWD complained.¹ Deliveries from all of WWD's most important suppliers were registered when booked-in at the IDC in Rotterdam and checked according to the agreed upon delivery times. WWD started in 2001 to evaluate their suppliers' performance more carefully. It then became evident that the Swedish supplier did not score according to expected levels. On several occasions products had been out of stock, and both WWD's internal network and external customers had been complaining. It was obvious that the delivery routine did not work properly, and improvements were necessary. The delivery problems were a recurring topic of discussion in meetings between the two parties during the following two years. The problems and the various parts of the delivery routine were thoroughly discussed in an attempt to reach an understanding of the problems and find a workable solution. WWD originally felt that the problems were solely those of the supplier's. However, it was eventually recognised that the problems were caused by the sub-routines of both parties. Hence, each had to check with their respective operational units to ascertain if the deliveries were in effect handled according to the agreed upon overall routine.

¹ Supplier meeting no. 5 in Appendix 2

In the following years several problems relating to the delivery routine were identified and improved upon. It turned out to be a continuous problem solving process. One reason for the delivery problems was attributed to the poor communication between the supplier and its sister company, producing the goods for WWD. The production had been moved to an East European country towards the end of the 1990s. Following this move, the two sister companies, i.e. WWD's Swedish supplier and the production company had not managed to establish sufficient routines for information sharing and for the physical flow of goods. For example, the production company was responsible for replenishing the stock at its sister company's warehouse, but was unable to do this properly. WWD urged the supplier to improve these routines, as the problems affected WWD's deliveries to its customers. The supplier took these requests very seriously and worked hard to improve its routines. An important means was to assign a specific person at the warehouse to handle WWD goods, ensuring that WWD stock would be replenished in time. These improvement efforts continued for some time, and as time went by, other problems were identified.

Another problem area turned out to be a personnel problem. The person originally assigned by the supplier to handle the WWD orders, went on leave in 2003, requiring a new and inexperienced person to take over her duties. Due to this new staff member's inexperience, communication with WWD's operational staff at the IDC in Rotterdam did not work very well. Misunderstandings occurred, which resulted in late deliveries. In addition to new personnel, the supplier also implemented a new ERP system in the middle of 2003. It took a few months to get the system working properly. During this period the supplier had problems with handling the orders and consequently the deliveries were negatively influenced. Both these problems were nevertheless temporary problems. The contact person originally assigned to WWD orders eventually came back and the system worked properly after a while.

Yet another reason for the delivery problems turned out to be a misunderstanding about delivery dates. Discussing the overall routine, WWD and the supplier found that they were actually operating with different dates. While WWD used the date of arrival of the goods in Rotterdam as the basis for the evaluations, the supplier used the date of the goods being shipped from its central warehouse in Malmoe on the order confirmations. This resulted in the supplier always being late. It was finally agreed that both companies would use the date of arrival of the goods as to ensure comparability. A final reason for the delivery problems was inconsistency in the reception routine at the IDC in Rotterdam. Goods would at times be left in the reception area for several days after arrival, without being booked into

the system. WWD went through the reception routine thoroughly as it was urgent that the operational warehouse staff understood the importance of being consistent in booking in the goods immediately. However, the reception staff members complained that the shipments from the supplier were too large and difficult to handle. As a consequence, WWD and the supplier agreed that instead of shipping goods once every week, the goods would be shipped twice a week. The shipments were now easier to handle for WWD's reception staff. After two years of continuous problem searching and solving with regards to the delivery routine, the supplier's delivery performance finally reached the expected level on a continuous basis in 2004. However, by the end of the year some low scores appeared again, calling for further problem solving and adjustments.

1.2 What is learning across firm boundaries?

What do the above two empirical examples illustrate? In this thesis it is argued that each of these examples illustrates learning across firm boundaries. The first example shows how WWD must learn a new payment routine to adjust to the new supplier. The supplier has an existing routine for pre-payment, while WWD is used to paying when the goods are booked in at the IDC. Since the supplier will not give in on this issue, WWD must adapt to the supplier's requirements, learning a new routine. The second example shows how WWD and the supplier together learn how to improve the delivery routine. The problems are discussed, and potential ways to solve them exchanged. This process continues for years. When various sub-routines are improved upon, the overall inter-organisational delivery routine seems to work better. However, it is a continuous problem solving process, as the performance of the routine is dependent on several sub-routines working properly.

Learning across firm boundaries relates to learning that takes place between companies. This phenomenon has been approached in different ways. In this thesis the focus is put on learning in ongoing relationships between customers and suppliers in industrial settings. Linking the two concepts of *learning* and *business relationships* will hence be a main task in the following investigation. These concepts may be related in various ways. Here the link between them will be described and investigated through the means of *routines*. As the above empirical examples show, routines seem to play an important role in this type of learning. Hence, though learning and relationships are the two main concepts used here in order to study and

understand this type of learning across firm boundaries, i.e. learning in ongoing relationships, the concept of routines will be used to connect them. The further investigation in this thesis will as such be centred on linking learning and business relationships through the means of routines, as illustrated by the below figure.

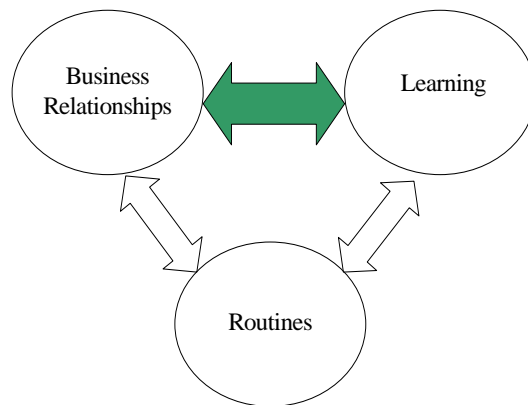


Figure 1.1 Approach to learning across firm boundaries

In the following sections, each of these three concepts is further examined. Firstly, the concept of routines is elaborated upon, looking at how routines are defined and what function they play. Furthermore, the two concepts of business relationships and learning are addressed.² Then, prior research on learning across firm boundaries is considered, before the aim of the thesis and research questions guiding the study are presented. Finally, the structure of the thesis is outlined.

1.3 Organisational routines

Routines have been at the centre of organisational research for decades. One of the first conceptions of organisational routines can be found in March and Simon (1958), who use the term *performance programs* to describe an organisation's routinised responses to certain stimuli. Cyert and March (1963) use the term *standard operating procedures* to describe the same phenomenon. Through routinisation, organisational choice is simplified and

² It is important to notice that when learning and routines are further used in the thesis, they refer to (inter)organisational and not individual processes.

hence stability achieved. Both these two notions consider routines in relation to organisational decision-making. Nelson and Winter (1982) offer a further refinement of the concept of routines. Their main interest is in building a theory of the evolution of populations of firms, but in order to do so they use the concept of routines to describe firm behaviour. Nelson and Winter argue that organisational routines are important as they depict much of firms' behaviour. All regular and predictable behavioural patterns of firms are defined as routines and a firm can be looked upon as a set of interlocking routines. Organisational routines are here compared to the genes of a firm, characterising the firm and determining its potential behaviour. Routines are in this sense equated with the skills of the individual (Nelson and Winter 1982). An important aspect of these first views of routines is that routines are mainly used as a means to describe other key organisational processes. Routines have been seldom at the centre of the research themselves.

Following Nelson and Winter (1982), routines have been used in several ways, such as to describe organisational learning (Levitt and March 1988), to explain resistance to organisational change (Cohen and Bacdayan 1994) and the persistence of formalised work processes (Miner 1991). Recent studies have examined more closely the concept of routines itself (e.g. Feldman 2000). Despite its popularity, however, no comprehensive perspective has been gained of the organisational routines concept. Some have argued that it has become a victim of its own success (Cohen et al. 1996). Consequently, the literature has evolved in a number of directions. Several definitions of organisational routines have been offered, including "multi-actor, interlocking, reciprocally-triggered sequences of skilled actions" (Cohen and Bacdayan 1996:554), "an executable *capability* that has been *learned*.." (Cohen et al. 1996) and as "a collection of procedures which, taken together, result in a predictable and specifiable outcome" (Nelson and Sampat 2001), to mention a few. Taken together the literature reveals three main dimensions of routines: the co-ordinating, the cognitive and the motivational dimension (Cohendet and Llerena 2003).

Routines are co-ordinating mechanisms that structure much organisational functioning (Nelson and Winter 1982). Co-ordination is essential for firms being productive, as it allows for human and physical resources to be combined. Routines enable co-ordination of different organisational performances, providing a smooth flow of actions. Feldman and Rafaeli (2002) notice that routines provide connections among individuals. Through these connections organisational individuals develop shared understandings, which help the firm to maintain a stable pattern of behaviour that co-ordinates the actions of individuals while also adapting to variations in the internal and external environment. In a similar vein, Gittel (2002) finds that

the performance effects of routines are mediated by relational co-ordination. This means that routines provide interactions between participants, which enhance performance. It is recognised that the connections routines provide, are not merely intra-organisational, but may very well exceed firm boundaries (e.g. Feldman and Rafaeli 2002). Narduzzo, et al. (2000) remark that in addition to each routine being a co-ordination of individual behaviour, the co-ordinating dimension also relates to how single routines are linked to each other. Hence the interdependence between routines is important. This idea is also recognised by Nelson and Winter (1982), arguing that the performance of a routine means integration and co-ordination of different sub-routines constituting the overall routine.

The co-ordinating dimension of organisational routines is closely related to the cognitive dimension. This dimension relates first of all to the idea that routines contribute to economising on limited cognitive resources (Nelson and Winter 1982). Firms are bounded in their rationality and limited in their cognitive capacities. This means that they can never take into consideration and process all available information. Hence, the implications of their choices can never be fully known, only anticipated. Because of routines, firms can concentrate their efforts on novel situations, whereas recurring events can be handled more semi-consciously. Routines economise as such on the scarce cognitive capacities of firms.

The cognitive dimension also refers to the idea of organisational routines as the repository of organisational knowledge (Nelson and Winter 1982). Routines encompass an organisation's knowledge base, and constitute an organisational memory for collective behaviour based on past experiential knowledge. One important feature of routines is their ability to store tacit knowledge.³ Similar to individuals, organisations preserve their skills by repeating them - they remember by doing. In this way routines constitute the memory of organisational knowledge for what to do and when to do it. When members in an organisation learn from experience, these lessons are made collective, maintained and accumulated within routines. Routines are as such a result of past learning and vehicles for further learning (e.g. Cyert and March 1963; Nelson and Winter 1982; Levitt and March 1988; Cohen and Bacdayan 1996; Cohen et al. 1996; Feldman 2000; Edmondson et al.

³ It is recognised that human know-how can be both articulated and tacit (Polanyi 1958). While the first points to knowledge that can easily be communicated by means of language and symbolic systems, the latter points to knowledge that is not easily explained, but rather relates to the practice aspect of human know-how (Nelson 2003).

2001). One important implication of this notion is that possibilities for change are always present in routines as people perform them.⁴

The final dimension of routines is the motivational dimension. This dimension refers to the role routines have as truces among organisational members seeking their own interests (Nelson and Winter 1982; Cohendet and Llerena 2003). Routines contribute to controlling political tensions in an organisation, as they work as devices for who is to do what, when and how. Accordingly routines provide knowledge and expectations to each member about other members' behaviour. One important implication of this feature of routines is that changes may disturb the existing truce the routines embed.

In summary, we may say that these three dimensions together describe the main functions of routines. Organisational routines refer as such to an organisation's recurrent cognitive and behavioural patterns, which provide it with some kind of stability, predictability and efficiency (Becker 2004), though some kind of change is inherent in every routine (Feldman 2000; Pentland and Reuter 1994). An important debate in the literature is the differences that have been made between cognitive and behavioural routines. While some have considered routines as cognitive regularities and rules, others have considered them in terms of behavioural patterns. Becker (2004) states that the term "routine" is increasingly associated with behaviour patterns. For example Reynaud (2000), argues that a routine is the "pragmatic tool" of decision making, while rules form the background of routines, providing a theoretical, abstract and general answer to a problem. However, recent studies have recognised that routines include both behavioural/performative and cognitive/ostensive aspects (Feldman 2000; Feldman and Pentland 2003).⁵

Organisational routines have been primarily studied in research on processes within the single firm. There are few studies of inter-organisational routines (for an exception see Holmqvist 1999; 2004; Zollo et al. 2002; Harrison and Bygballe 2006). Most often when such routines are considered they refer to deliberately established *learning* and *knowledge-sharing routines*, aimed at

⁴ Traditional views of routines often emphasise their static and non-reflective dimensions. However, recent studies have recognised their dynamic nature due to human agency and reflection (See Feldman 2000 and Feldman and Pentland 2003 for an extended discussion)

⁵ Feldman (2000) and Feldman and Pentland 2003 apply Latour's (1986) terms "ostensive" and "performative" to the notion of routines. In his analysis of power, Latour argues that power exist in both principle (the ostensive element) and in practice (the performative element).

distributing and sharing of knowledge among companies in a formalised and planned way (Dyer and Singh 1998; Dyer and Nobeoka 2000). However, according to Håkansson and Snehota (1995), routinisation is a feature of ongoing relationships between exchange partners in industrial settings as well. The role routines play in business relationships is similar to the one in organisations in general, that is to say, as co-ordination mechanisms and devices for what to do and when (Harrison and Bygballe 2006). Accordingly, routines are developed to co-ordinate both within a business relationship as well as across relationships (Håkansson and Johanson 2001).

As stated earlier, this thesis attempts to use routines as a link between learning and relationships, in order to investigate learning in ongoing business relationships. In the following sections, we shall look more closely on how to understand business relationships and learning.

1.4 Business relationships and industrial networks

All companies relate to other companies in one way or the other. However, there exist different views of the way companies relate to each other and the implications of this relatedness. During the past decades, the relationship and network aspect of organisational behaviour has received much attention from both researchers and practitioners (Håkansson and Ford 2002). In the marketing literature, exchange relationships have been put on the agenda by researchers from a variety of different perspectives.⁶ In strategy, attention is given to strategic alliances and joint ventures. In purchasing, supply chains and networks represent the new mantra.

In this thesis we are interested in learning in ongoing relationships between buying and selling firms in industrial settings. One stance of research that has contributed to the understanding of such relationships and interaction processes within them is the IMP (Industrial Marketing and Purchasing) tradition (see Håkansson 1982; Ford 1990; Axelsson and Easton 1992; Håkansson and Snehota 1995). Researchers within this tradition advocate an industrial network approach to business markets, viewing industrial markets as networks of connected inter-firm relationships. The IMP group was established in 1976, as a result of a growing dissatisfaction with the traditional micro-economic view of industrial exchange.

⁶ The notion of relationships between firms has been considered and studied in transaction cost analysis, resource-dependence theory, relational contracting, agency theory and the industrial network approach, to mention a few.

Axelsson and Easton (1992) use a physical analogy to explain the difference between the two perspectives. In physics, gases are assumed to consist of atoms and molecules continuously moving and colliding with each other. Based on assumptions about such random collisions, gas laws are deduced by simply aggregating the effects of each such event. Micro-economic theory views exchange episodes in a similar way, that is, as random collisions between buying and selling companies. Models of markets are derived based on this and similar assumptions.

Contrary to the micro-economic theory's view, the industrial network approach's view compares more to the notion of liquids in physics. Even though atoms and molecules are continuously in motion and collide with each other, it is less so in liquids than in gases. Inter-atomic forces are much stronger, and the movement of each unit is also subjected to the forces emanating from other units close to them. These relationships are strong but not immutable. The industrial network approach views economic systems and exchange processes in a similar way: "Instead of free moving units within free moving markets we have companies tied together in a close structure with very little freedom to move" (Håkansson 1982:394). Hence, a basic assumption within the industrial network approach is that "no business is an island" (Håkansson and Snehota 1990, 1995).

Findings from nearly 30 years of IMP research suggest as such that industrial markets are characterised by long-lasting and inter-connected relationships between companies engaged in buying and selling activities rather than by discrete business transactions between independent companies. Because companies in industrial settings need access to external resources as well as they need to sell their own products and services, exchange relationships are established (Johanson and Mattson 1987; Håkansson and Snehota 1995). In that sense, relationships are both necessary and valuable.

The industrial network approach argues that companies operate in an interactive environment (Ford et al. 1986). This notion builds on Weick's (1979) recognition of the active role companies play in creating their own environments. This enacting process involves action bracketing and active intervention in the environment. However, in the industrial network's view, the enacting process is rather one of *interacting*, emphasising that companies

create their own environments by interacting with other companies.⁷ As such the traditional view of the organisation-environment relation is challenged.⁸

Companies are connected to each other through relationships and through a broader network of relationships. Business relationships are comprised by technical, economical and social dimensions, in which exchanges between the parties occur (Håkansson 1982). Within each of these dimensions, bonds may arise creating interdependencies between the parties that provide both possibilities and constraints to the involved actors. (Johanson and Mattson 1987). Another way of describing business relationships is by the way they connect the activities and resources of the involved actors, and how these connections affect each of the parties, the dyad and the network in which they are embedded (Håkansson and Snehota 1995). The strength and width of these connections vary among different relationships. The bonds and connections arise through learning and adaptation, and provide continuity and relative stability to the relationship. The stability dimension of relationships may be seen as the very reason why relationships exist. As such relationships are necessary for companies to deal with the complexities and ambiguities they are facing in their environments.

Certain connections and bonds in a business relationship are embodied as routines, endowing the relationship with further stability (Håkansson and Snehota 1995). Routines, both within each company and across the firm boundaries, aid the complex needs to co-ordinate activities in which particular resources are used and combined within the relationship (Harrison and Bygballe 2006). It is important to notice in this respect that despite the stability feature of business relationships enabled by among other things routinisation, stability should not be confused with stagnation (Håkansson 1987). A striking feature of business relationships is the interplay between

⁷ Ritter and Ford (2004) discuss the interaction concept and its use within different streams of research within marketing: the managerial approach, distribution, international marketing, the IMP and the network approach. They notice that what differentiates the IMP and industrial network approach's use of the concept from the other approaches is the emphasis on relationships rather than single companies as unit of analysis, co-operation rather than conflict, interconnectedness between firms, and the continuity and long-term dimensions of business relationships.

⁸ Astley (1984) argues that the traditional notion of the organisation-environment relation holds three main assumptions about the management of this relation: (1) companies need to respond to an exogenous environment, (2) companies need to negotiate resource dependence with outside stakeholders and (3) companies have to strategically manoeuvre vis-à-vis competitors in industrial arenas. In this sense companies and their managers are seen as being confronted by face-less environments.

stability and change. Sometimes stability is required or used to create change and vice versa. As long as the relationships entail interaction processes, learning and change will always exist. The changes are, however, more often evolutionary and incremental than radical. An important implication of the assumption about connectedness is that changes will not only be local to a dyadic relationship. Instead, changes will often propagate to other relationships in the network, and hence create dynamics on the network level. This has been referred to as connected change and network effects (Halinen et al. 1999).

1.5 Organisational learning

Organisational learning has traditionally been referred to as the process by which organisations adjust to their environments (see for example Cyert and March 1963; March and Olsen 1975; Argyris and Schon 1978; Fiol and Lyles 1985; Levitt and March 1988). Though learning has probably been acknowledged as an important aspect of organisational life for as long as organisations have been studied (Huysman 1996), the interest in organisational learning and knowledge exploded throughout the 1990s. As a result, the concept has been incorporated into disciplines not traditionally concerned with this issue. Organisational learning is now an established field of study (Easterby-Smith et al. 2000), including the extension of level of analysis to studies of learning in relationships and networks. However, as different disciplines have come to appreciate the learning concept, a diversification of the field has developed, emphasising different dimensions of learning.⁹

In this thesis, we are interested in learning that takes place in the type of business relationships described earlier within the IMP tradition. One perspective that seems useful in order to investigate such learning is the adaptive perspective (Huysman 1996), or what may also be called an experiential or routine-based perspective of learning.¹⁰ The adaptive perspective is based on the behavioural theory of the firm as advocated by March and Simon (1958) and Cyert and March (1963). These authors argue that organisations are adaptive institutions, which learn by experience.

⁹ For an extended review, see for example Hedberg (1981), Shrivastava (1983), Fiol and Lyles (1985), Dodgson (1993), Cohen and Sproull (1996), Huysman (1996), Easterby-Smith (1997), Crossan, et al. (1995), Easterby-Smith et al. (2000).

¹⁰ In the following, we will use the term adaptive perspective.

According to Cyert and March (1963), learning is a key feature of organisational processes, such as decision-making. Organisations adapt their goals, based on experience, and related to their aspiration level. They further learn some criteria, which are used when evaluating performance. Because of bounded rationality, organisations learn to attend to some parts of the environment and to ignore other parts. Finally, an organisation also adapts its search rules, based on experiences with previously tried solutions. One thing is that search is problem oriented, but the search rules themselves also change. The procedures that are perceived successful will be repeated, while those associated with failure will be changed.

Since these first notions of organisational learning, March and various colleagues have continued to elaborate on and refine the notion of such learning (see for example March and Olsen 1975; Levitt and March 1988; March 1991; Levinthal and March 1993). The adaptive perspective contrasts in various respects to other contemporary perspectives of learning. The increasing attention given to learning and knowledge in the past decades has resulted in a focus on learning as a means to enhance firms' competitiveness. In the resource-based perspective for example, knowledge is viewed as a firm's most important resource (see for example Prahalad and Hamel 1990; Barney 1991; Conner and Prahalad 1996). Companies' ability to survive is seen as depending on their ability to learn and create new knowledge and appropriate organisational capabilities (Grant 1996). This resource-based view of learning, equates learning with effectiveness and improvement, and knowledge is considered as a commodity, which can be used instrumentally as a competitive means (Patriotta 2003). It further follows that by applying appropriate means planned learning objectives can be reached. Hence, focus is put on the outcomes of learning and on how to reach these desired objectives. The adaptive perspective of learning on the other hand argues that learning takes place, whether or not it is planned or leading to efficiency and effectiveness. This perspective has as such directed the attention towards the complicated, problematic and less-efficient side of learning (Huysman 1996). Especially the notion of learning from experiences has been thoroughly discussed (March and Olsen 1975; Levitt and March 1988; Levinthal and March 1993).

In summary, the adaptive perspective of organisational learning views learning as the process where organisations adapt to changes in their environments (Huysman 1996). The environment includes among others

competitors, customers and suppliers.¹¹ Though the adaptive perspective has been criticised for emphasising too much external triggers to learning and neglecting internal triggers, this perspective has been very influential on contemporary organisational learning theories (Huysman 1996). One key issue in the adaptive perspective is the emphasis on organisational experiences captured in routines. As described earlier, the notion of routinisation based on past experiences and learning was recognised by March and Olsen (1958) in their concept of action programs and by Cyert and March (1963) in their concept of standard operating procedures. Furthermore, Levitt and March (1988) argue that learning is encoded in routines, meaning that knowledge and learning are maintained and further accumulated in routines. Routines are seen as a result of past experiences and learning, as well as a frame for future experiences and interpretations of them. This perspective of learning includes as such both an adaptive and experiential as well as an evolutionary perspective of learning.

1.6 Learning across firm boundaries: prior research

In the above sections, we have looked at the two concepts of business relationships and organisational learning, based on the IMP tradition and the adaptive perspective of organisational learning. However, the main interest in this thesis is the connection between these concepts. As was noticed earlier, learning across firm boundaries has been approached various ways. In the following, we will briefly look at how this has been approached in prior literature.

In the current organisational learning literature, two streams of research exist (Holmqvist 2003). The first and still the most dominant one concentrates on learning within organisations. This stream was looked at in a previous section. The other stream focuses on learning through formal collaborations between companies. Learning across firm boundaries has received increasing attention from both academics and practitioners during the past decade, following a general interest in inter-organisational collaborations. Studies of learning between firms has primarily emphasized relationships between

¹¹ This view of the relationship between organisation and environment is influenced by the contingency theorists, who treat organisations as open systems and where adaptation to the external environment is seen as a major function of firms (Lawrence and Lorsch 1967). However, contrary to the contingency theory, the behavioural theory of the firm focuses on how firm behaviour is constrained by their internal operation and bounded rationality.

alliance partners and customers and suppliers with deliberate and formalised learning objectives (e.g. Hamel 1991; Lane and Lubatkin 1998; Powell 1998; Larsson et al. 1998; Dyer and Singh 1998; Holmqvist 1999, 2004; Dyer and Nobeoka 2000; Lane et al. 2001). The learning process involved in these settings has often been described as a “learning race” (Hamel 1991; Larsson et al. 1998; Powell 1998), where each of the parties seeks to out-learn the other by learning as much as possible from each other.

Much attention has been given to the pre-conditions for such learning. For example, the firms’ ability to actually gain and use external knowledge, that is, their absorptive capacity has been emphasised as an important precondition of learning (Cohen and Levinthal 1990). Recent research has acknowledged that alliances and collaborations involve collective learning processes, where the alliance parties create new and shared knowledge, materialised in among others rules and routines (Larsson et al. 1998; Holmqvist 1999). Inter-organisational learning processes hence involve both learning *from* and *with* other actors. The latter means that partner-specific knowledge is created. Hence, in order to learn, companies must be transparent in addition to receptive (Hamel 1991; Larsson et al. 1998).

Inter-organisational interactions have been considered as a unique learning entity in its own right, which is different from learning within organisations (Holmqvist 2003). Hence, the two streams of research have grown quite separately. However, recent studies show that the two processes of intra-organisational learning and inter-organisational learning are closely interwoven (Holmqvist 2003). Firstly, inter-organisational learning is based on the confrontation and combination of single companies’ experiences. Hence, learning of single companies is what drives inter-organisational learning. Secondly, inter-organisational learning may affect the learning of single organisations. The experiences created through inter-organisational interaction may be internalised by the involved parties. As such the distinction between intra-organisational and inter-organisational learning is blurred.

What is common for the more general organisational learning literature and the inter-organisational learning literature is what Huysman (1996) refers to as biases in the literature. These biases involve among others a focus on learning as planned and equating learning with improvement. In the inter-organisational learning literature this is reflected in the emphasis on formalised alliances and collaborations set up with the explicit purpose of learning. Inter-organisational learning is considered as highly innovative and explorative, leading to new knowledge from which the involved parties can

benefit and gain competitive advantages. Hence, this learning is considered to result in positive outcomes and can and should be planned for.

Although the above notion of inter-organisational learning is typical in the literature, some authors have argued that on-going relationships between buying and selling companies may contribute just as much to knowledge development as more formal co-operations (Håkansson et al. 1999; Håkansson and Johanson 2001; Selnes and Sallis 2003). All organisational work draws on knowledge, and knowing and learning are normal processes in organisational life (Tsoukas and Vladimirou 2001). Since interaction between companies is a key feature of organisational life, learning in business relationships is accordingly a natural process (Knight 2002). Business relationships are established through learning processes, and learning is further accumulated through repeated interaction. This learning results in routines that co-ordinate the transaction and production activities between parties in relationships (Håkansson and Johanson 2001). Hence, as Araujo (1998) remarks, rather than being a special practise associated with large changes or discontinuous innovation processes, learning is involved in the day-to-day interaction practises between firms. Similarly, Lundvall (1992) notices that learning and innovation are interactive processes, which take place in connection to routine activities in production, distribution, and consumption. Despite this recognition, however, Håkansson et al. (1999) argue that such learning is as yet rather unspecified in the literature.

1.7 Overall aim of the study and research questions

The aim of this thesis is to fill the gap identified by Håkansson et al. (1999) referred to at the end in the above section. As noted, this view of learning is in line with the empirical examples presented in the introduction of this thesis where it was argued that the examples illustrate learning across firm boundaries. When comparing these examples with more traditional notions of inter-organisational learning, we see that they offer a different approach. The two examples illustrate learning in two ways. In the first example, learning is related to WWD's need to adjust to the supplier by learning a new inter-organisational routine. Learning in relationships, therefore, involve companies learning and adapting to counterparts, resulting in new routines or adjustments in existing ones. The next example illustrates the mutual learning between WWD and the supplier as they seek to improve the overall delivery routine and their subsequent parts of it as to fit to each other. This shows that learning in relationships also involves companies learning together, resulting in mutual adjustments of inter-organisational routines.

Together the two examples demonstrate that learning across firm boundaries may be related to how parties in ongoing exchange relationships in industrial settings seek to create stable and efficient exchange flows through the establishment of new routines and in the modification of existing ones.

Accordingly, looking at the role of organisational routines seems to be one possible way to describe and investigate the day-to-day interaction and learning processes between companies, and hence to provide a further understanding of this type of learning across firm boundaries. We saw earlier that routines have been connected to both business relationships and organisational learning. Routines and rules have also been used to investigate inter-organisational learning in formal collaborations in previous literature (Holmqvist 1999, 2003, 2004). In this thesis, however, we are interested in using routines to investigate learning in ongoing relationships between customers and suppliers in industrial settings.

The views of business relationships and learning are in this thesis based on the IMP research tradition and the adaptive perspective of organisational learning. If we follow Nelson and Winter's (1982) argument that a firm can be seen as a set of inter-locking routines, it seems reasonable to argue that the same is true for relationships. This view is acknowledged in the IMP literature. Routines are here considered as important mechanisms for coordinating the resource collections of the parties in a relationship, providing stability and efficiency to the relationship. When applying an adaptive perspective of learning, learning is here related to the establishment and change of such routines. Routines have been referred to as both cognitive and behavioural rules and routines. Here a behavioural perspective is emphasised. This does not exclude a cognitive dimension, however, as changes in mindset or interpretations often precede behavioural change.¹² This thesis will relate learning to changes in routinised behavioural patterns, or attempts to do so. It is as such in line with Huber (1991:99), who states that "*an entity learns if, through its processing of information, the range of its potential behaviours is changed*" (Italics in original). In addition, Huber further argues that when this entity is an organisation, learning is interpersonal and social.

¹² Some authors distinguish between adaptation and learning, referring to changes in behaviour as adaptation and changes in cognition as learning (e.g. Fiol and Lyles 1985). Others argue that we may rather talk about different levels of learning (e.g. Hedberg 1981). In this thesis we relate learning first of all to changes and adaptation in behaviour, such as routines, but recognise that this entails cognitive dimensions as well.

In an adaptive perspective of learning, triggers to learning are often attributed to the external environment. A main implication of taking an IMP approach to business markets as a starting point is that this environment is not a face-less one, which the company can choose to adapt to or not. Instead it is comprised of a network of inter-related companies and relationships. Accordingly a company's learning is directed towards specific business partners such as suppliers and customers, and stems out of interaction processes in relationships. It further follows that this learning affects and is affected by the network in which the company and its relationships are embedded. Hence, based on the two theoretical perspectives, this thesis contributes to illustrate how learning is an interactive process directed towards relationship partners and how implications of learning reaches beyond the local setting in which it was first initiated. In this sense a situated perspective of learning is included, which acknowledges the social, and contextual dimensions of learning and that learning is embodied in practice (Patriotta 2003).

The following overall research question will guide the study in this thesis:

How may routines be used as a link between learning and business relationships, in order to investigate and understand learning across firm boundaries?

This basic question has some important implications for how to approach the following study, and may be further specified in the following overall empirical question and sub-questions:

How is learning reflected in business relationships, when routines are in focus?

- How do companies use routines in business relationships?
- How is the use of such routines affecting and affected by learning?

While the first of these research questions is an overall, theoretical question, the three last ones are more empirical in the sense that they address what companies can actually do in relation to routines and learning in business relationships. These questions will be further elaborated upon in the following chapters of this thesis and guide the study.

1.8 Structure of the thesis

The structure of the thesis is as follows: in Chapter 2, the methodology applied in the thesis is presented and discussed. Firstly, the background of the thesis and the research setting in which the study has been carried out will be briefly described. Furthermore, the methodology applied is outlined, starting with discussions on the philosophical foundation of the study. How the study has been carried out, including data collection and how the cases have been chosen, written up, structured, and analysed is also presented and discussed, including an evaluation of the study. Finally, the empirical context of data collection is described, in terms of a presentation of the companies involved in the study.

Chapter 3 introduces the reader to the empirical field by presenting an empirical discussion of a customer-supplier relationship, and the role routines play in such relationships. The example illustrates the connection between business relationships and routines, by identifying various inter-organisational routines that exist in a business relationship. This contributes to introducing the reader to the empirical context and provides a basis for the further case studies. Finally, a discussion about the consequences of choosing routines as an empirical tool to approach learning across firm boundaries will follow, resulting in some refined empirical questions.

Chapter 4 presents a literature review and the theoretical frame of reference of the thesis. The two main concepts in this thesis, business relationships and learning, are further elaborated based on the IMP tradition, in particular the industrial network approach and the adaptive perspective of organisational learning. The chapter aims at illuminating how the concepts of learning, relationships and routines are used within these two perspectives. This further gives a basis for discussing the possibilities of combining insights from these two traditions, in particular related to the question of using routines as a link between learning and business relationships. Based on the literature review, important dimensions of learning in business relationships are identified, which form a basis for the research issues proposed at the end of the chapter. These issues will further guide the following case studies.

Three sub-cases are presented and analysed in Chapter 5-10. A summary of the analyses is provided in Chapter 11. The final chapter, Chapter 12, offers some concluding discussions, including a discussion of the theoretical and practical implications of the findings, followed by suggestions for future research. Finally, a summary of the thesis is given.

Chapter 2. Methodological considerations

2.1 Introduction

In empirical research there are always certain methodological issues to be considered. Methodology has different meanings, one being how to investigate and obtain knowledge about the world (Burrell and Morgan 1998). According to Easton (1995), researchers are often more concerned with *what* to study than *how*, *when* and *where* to study. The way research is conducted depends not only on the topic addressed, but also on the researcher's beliefs and values. Thus *how* the study is conducted and *why* it is conducted reflect these beliefs and values.

This chapter addresses the methodological issues concerning the study on which this thesis is based. It presents and discusses how the study has been conducted and the assumptions and arguments underpinning the various choices. In the first section, a brief description of the background and motivation of the work is given, relating to the research setting in which the study has taken place. The second section presents the methodological approach applied and its philosophical foundation. Furthermore, the research process is outlined, focusing on how the data has been collected and how cases have been constructed and analysed. An evaluation of the study is also included. In the final section, the empirical context, represented by the companies involved in the study, is presented.

2.2 Background and research context

The starting point of the study in this thesis was a general interest in learning and learning in organisational settings in particular. This interest evolved during my studies in educational science at the University of Oslo. My master thesis was written on learning in multinational organisations. Being involved in the NETLOG project at Norwegian School of Management, BI in 2001 further reinforced this interest in learning. The NETLOG project applied an industrial network approach to the study of logistics resources. The main focus was on how such resources are used and developed in business relationships and networks.¹³ The NETLOG project has been an

¹³ Findings from the project are reported in Jahre, et al. (2006).

important source of inspiration for the choice of topic and theoretical frame of reference in the study. My theoretical background in learning theory combined with the introduction to business relationships and industrial networks resulted in this thesis on learning in ongoing business relationships.

One of the outputs from the NETLOG project is a database of what is called NETLOG cases. Participation in data collection to construct these cases provided valuable experience with qualitative fieldwork. This experience compares to what Dawson (1997) describes as developing tacit knowledge about the research process and to engage in "hands-on" research. Constructing and analysing the cases also provided important insights into such work. The data collection and analyses of the NETLOG cases were based on a research tool developed to study resource interaction (Håkansson and Waluszewski 2002). The tool was also used in the first rounds of data collection and case study for this thesis. This will be further elaborated later in this chapter. Furthermore, the NETLOG project also provided access to the empirical context. The study in this thesis is based on data collected from one of the companies taking part in the project and some of its suppliers. The company is a world-wide distributor of products and services to the marine sector and is referred to here as WWD to maintain anonymity. The suppliers are labelled A to C for the same purpose. In addition, data has also been collected about WWD's relationship to a new supplier in China. This supplier is accordingly referred to as the Chinese supplier. These companies will be further described in the last section of this chapter. Finally, the NETLOG project group has provided invaluable help as the study has been discussed in meetings and seminars. In addition, other researchers in other projects connected to NETLOG have provided valuable ideas and feedback on the work with the study.

2.3 Philosophical foundation of the study

How methodological issues are dealt with is closely related to the philosophical foundation of the researcher and of the theoretical perspectives applied. This foundation is often more implicit than explicit. Though textbooks present more or less clearly defined ontological and epistemological approaches, these are seldom sharply polarised in practice. According to Patriotta (2003), pluralist epistemologies are often needed in order to capture knowledge-related phenomena in a holistic and systematic way. Although this may result in drifting and indeterminacy where "anything goes", Patriotta argues that variety and heterogeneity are valuable resources

in inquiry. Hence, instead of assuming one ideological stance, inquiry should aim at a conversation between different theories, where aspects of them are used to understand knowledge and learning processes. As to the study in this thesis, a similar viewpoint may be identified, especially when it concerns the theoretical perspectives applied. We shall elaborate more on this issue later in this section.

Following the above notions, it appears difficult to confine to specific ontological and epistemological approaches, at least in practice, and both pluralist and pragmatic views have been suggested in order to cope with these difficulties. Nevertheless, researchers should be conscious and open about their positions and preferences, because as Miles and Huberman (1994) notice, they provide our conversational partners with additional information. Based on this argument, we shall see what basic ideas underpin this study. As to the research process itself, this has been influenced by an interpretivist epistemology. This approach to knowledge is often related to a socio-constructivist view, and the two are often used inter-changeably (Easton 1995). Within this approach a main assumption is that human beings actively construct models of the “real world”. The basic idea is that “reality” and “knowledge” are social constructions, created in the interaction processes between individuals, but that these may have come to be regarded as real (Berger and Luckman 1967). According to Weick (1979), approaches holding this view stress reality as being selectively perceived, cognitively rearranged, and interpersonally negotiated. As such, emphasis is often put on how people create meaning of their experiences, and on the role of language, discourse and culture play in this construction. The research process is accordingly a construction of meaning, whereby the researcher and the object of study interact. The fact that the researcher is an actor actively engaged in the construction of the reality she is studying results in the distinction between the subject and the object being blurred.

This approach is further often based on an ideographic approach, aimed at understanding the subject in its everyday life. The researcher is heavily involved in the situation, as the idea is that a full understanding of the social world can only be obtained by getting close to the subject (Burrell and Morgan 1998). One important implication of this view is that it is impossible to capture an objective truth in a study. This further means that an object can only be understood in a certain context and at a certain point in time. According to this approach, the research process is neither theory-free nor value-free. The researcher introduces existing theories and constructs into the process, making it difficult to separate observation and theory. Both the human mind and the human values are important in the organisation and interpretation of observational experiences. Although both quantitative and

qualitative methods are used in studies based on an interpretivist approach, it is often associated with descriptive and explorative research designs and qualitative methods.

The theoretical perspectives applied in this study are the IMP research tradition and the adaptive perspective of organisational learning. It seems reasonable to argue that neither of these perspectives confine clearly to one specific approach. Rather different researchers seem to hold different views of the world. Easton (1995) argues that many of the researchers using the IMP research tradition embrace a critical realism view. Others argue their research being based on socio constructivism (Håkansson and Snehota 1995). Socio constructivism and critical realism are not contradictory, however. While realist believes that there is a real world out there, they argue that the representation and understanding of it is a social construction. When it comes to the adaptive perspective of learning, researchers seem less open about their philosophical foundation. While the traditional organisational learning research, such as the cognitive perspective, has been built on a positivist approach, recent perspectives have embraced an interpretivist view of the world (Easterby-Smith et al. 2000). The latter includes among others the situated perspective of learning, where learning is considered as embodied in practice and social settings (see for example Brown and Duguid 1991; Lave and Wenger 1991).

A similar trend may be identified in current studies within the adaptive perspective of learning, focusing on learning as encoded in routines. Routines are considered in both cognitive and situated perspectives of organisational learning, where different dimensions of routines are emphasised. Recent studies of routines seem to embrace an interpretivist approach. For example Feldman (2000) and Feldman and Rafaeli (2002) emphasise the social and interactive perspective of learning, where joint reflection on experience and the development of shared meanings are emphasised as important aspects of the learning process. If we relate this to Patriotta's (2003) notion of pluralistic views, we see that within perspectives there may also be different views, and each of these may contribute to illuminate important aspects in the perspective.

2.4 Conducting a qualitative single case study

This study applies a qualitative case study design. Qualitative inquiry facilitates study of issues in depth and detail (Patton 2002). According to Easton (1995), it often follows a descriptive design, aimed at

comprehension, understanding and illumination of a phenomenon. A qualitative approach is interpretive in that it seeks meaning rather than causal explanations. Hence, it is especially powerful as a source of generating and developing theory. As this study aims at describing and understanding the phenomenon of learning across firm boundaries, it may provide a basis for further development and refinement of theories of this phenomenon.

A case study approach to qualitative inquiries constitutes a specific way of collecting, organising, and analysing data, resulting in a case study (Patton 2002). The use of case studies have been thoroughly discussed (e.g. Eisenhardt 1989; Yin 1994; Dubois and Gadde 2002; Dubois and Araujo 2004). Yin (1994) argues for example that the need to use case studies arises when “an empirical inquiry must examine a contemporary phenomenon in its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 1994). According to Dubois and Gadde (2002), case studies provide a unique opportunity for developing theory as they allow for in-depth investigations of empirical phenomena and their context.

The choice of case studies as a method in this study is also related to the fact that case studies are frequently used within the research traditions to which this study aims to contribute. Case studies are extensively applied in the IMP research tradition (Easton 1995; Dubois and Araujo 2004) and also increasingly within the organisational learning field (Easterby-Smith et al. 2000). Case studies are considered appropriate in order to study phenomena such as interaction processes, change and learning in organisational settings. Such processes require in-dept studies, which case studies allow for. Similarly, Patton (2002:159) remarks, “qualitative inquiry is highly appropriate for studying process because (1) depicting process requires detailed descriptions of how people engage with each other, (2) the experience of process typically varies for different people so their experiences need to be captured in their own words, (3) process is fluid and dynamic so it can’t be fairly summarized on a single rating scale at one point in time, and (4) participants’ perceptions are a key process consideration”.

This study of learning across firm boundaries includes investigations of the outcome and implications of such learning. However, just as important is to describe and understand the processes involved in this learning. A focus on process involves understanding how something happens and/or examining outputs and outcomes (Patton 2002). Process research involves some aspects, which pose possibilities and constraints to the research process (Dawson 1997; Pettigrew 1997). This is first of all related to the time dimension of such research. Processes can be studied both simultaneously as

well as retrospectively. The study in this thesis considers processes in both these dimensions. An important consideration to make when studying interaction processes is their complexity, meaning that we can only partially understand fragments of them (Håkansson and Waluszewski 2002).

Furthermore, the study is a single case study divided into three sub-cases. The use of a single case has traditionally been viewed as inferior to multiple cases, suggesting a degree of uniqueness for legitimising the application of a single-case design. However, Dubois and Gadde (2002) argue that the number of cases depends on the research problem. Certain problems are better studied and understood in single case settings, allowing for more in-depth investigations. WWD, a buying company in the marine industry, constitutes the single case in this study. WWD was selected as we already had access to the company through the NETLOG project. Since the aim of the study was to investigate learning across firm boundaries in an industrial setting, using WWD seemed relevant.

The sub-cases concern three of WWD's supplier relationships. These were chosen based on suggestions from contact persons within WWD. The reason for choosing three sub-cases was to gain some variation in the single case study and to get a broader view of WWD's supplier relationships. During meetings and interviews related to the NETLOG project in the autumn of 2002, contact with the corporate procurement manager at WWD was established. WWD was at that time about to conduct their annual supplier meetings. I was invited to participate in some of the meetings with what the manager conceived as two very different suppliers, Supplier A and Supplier B. The procurement manager also suggested that the relationship with WWD's global logistics supplier, referred to as Supplier C, would be an interesting relationship to study. This relationship was different from the other two in that the supplier provided services and not products. In addition, the relationship was extensive and close. In addition to these three sub-cases, there is also an empirical example of a relationship described in Chapter 3 of this thesis. This relationship was established during the time of data collection of the three sub-cases. This relationship affected WWD's relationship with Supplier A substantially, and was as such interesting to follow. In addition, it also provided the opportunity to follow the establishment of a new relationship.

Data collection methods

The study is based on qualitative data collection methods, following the earlier statement that the study has been influenced by an interpretivist

approach. Data collection methods in case studies include archives, interviews, questionnaires and observation (Eisenhardt 1989). Since the study employs a qualitative approach, questionnaires have not been used. As Patton (2002) remarks, findings from qualitative inquiries are based on in depth interviews, observation and document analyses. Many have emphasised the use of multiple sources as being advantageous in order to increase the quality and credibility of a study (e.g. Patton 2002), because it ensures verification of the results (Yin 1994). Another argument is that multiple sources allow the researcher to gain more insight into the research problem, increasing the probability of revealing aspects that would otherwise not have been illuminated (Dubois and Gadde 2002).

Interviews and observations were the main data collection methods used in this study. The interviews were conducted with employees both from WWD and the suppliers. Non-participant observations were made in meetings between the parties. In addition, written documents, including e-mails, minutes of meetings, specifications, written procedures, price lists etc were made available by some of the contacts. Because of the access to WWD and resources available, most information was gathered from WWD. The data was collected during a 2 ½ year period, some periods being more intensive than others. In total 41 interviews were conducted with managers, procurement and purchasing, product-technical and operational staff at WWD and their counterparts in the supplier companies.¹⁴ In addition, 8 supplier meetings between WWD and the suppliers were attended.¹⁵ The data collection often followed a “snow ball” effect, where the interviewees suggested other persons who would have additional information. With some of the interviewees several interviews were conducted. This was in particular the situation with the procurement manager of welding products, which was the main contact at WWD during the study. Informal interviews were also conducted with this manager.

The main objective with the first rounds of data collection was to obtain an overall picture of WWD, the supplier companies and the relationships. Later, more specific data was gathered in order to investigate learning in the relationships. The interviews were first based on the research tool from the NETLOG project, providing information about the resources involved in the relationships and how these were used and combined.¹⁶ Thereafter the study came to centre on the routines embedded in these resources, and how they had evolved throughout the years. This was based on both extended

¹⁴ A list of the formal interviews follows in Appendix 1 at the end of the thesis

¹⁵ A list of the supplier meetings follows in Appendix 2 at the end of the thesis

¹⁶ The NETLOG case structure follows in Appendix 3 at the end of the thesis

theoretical insight as well as understanding developed during the empirical study. The following interviews contained semi-structured questions, aimed at investigating the routines. No strict interview guide was developed. However, a list of common questions guided the interviews. These included questions about the interviewees and their positions, in addition to questions about the resources and routines involved in the respective relationships, including how they were used and performed and the various changes having taken place.

Constructing and analysing the cases

The interviews were transcribed and organised in a case structure for each relationship. The cases were written down several times and in several ways. Firstly, they were structured according to the previously mentioned NETLOG case structure of business relationship cases. However, at the end each of the sub-cases was structured according to five different inter-organisational routines. Routines appeared as a useful tool to investigate the way resources were used and combined, and hence a way to approach learning in the relationships. This was based on increased insight gained during the theoretical and the empirical studies. As was noticed in the introductory chapter learning in this thesis is related to changes in routines and to the resources deployed within them. Hence, the description of the various routines aimed at describing and analysing how worked and how they had changed over time, and the implications of these processes. Accordingly both structural and processual dimensions of routines were included.

In order to make this description more comprehensible a major change incident was identified in each of the three relationships studied, including a break in a relationship (case 1), a change within a relationship (case 2) and finally, changes between relationships (case 3). These changes worked as a tool for investigating changes in the various routines in certain periods as all the three changes affected the current states of the involved relationships. While we may say that the routines constitute the standardisation in the cases, the different relationships and change incidents constitute the variation in the cases. The change situations provided as such two ways to approach learning. Firstly, they provided possibilities of studying changes in the routines before and after the incidents, hence depicting various learning episodes. Secondly, they provided possibilities of identifying implications for learning following the changes themselves.

Relationship represented by inter-organisational routines, is a unit of analysis in this study. Looking at routines is a way to approach change and consequently learning processes, as routines themselves are processual in character. Since routines involve the interplay between structure and process, they provide a “window” to the drivers underlying change, enabling a clear observation of change (Becker 2004). However, using routines as a unit of analysis is not without problems. As Feldman (2000) and Feldman and Pentland (2003) remark, it is important to clarify which aspects of the routine are studied. For example, some studies look at the ostensive aspect of routines depicting the idea of the routine. Others are studying the performative aspect of routines, investigating how routines are actually performed. It is reasonable to assume that while the intention of this study has been to investigate performative aspects, some interference with ostensive aspects may have taken place. This is partly due to the focus of the study. However, it may also be attributed to the various interviewees’ responses to the questions about the routines. Feldman and Pentland (2003) notice that people standing outside of the routines, such as managers, often tend to describe the ostensive aspect of routines, while the people engaged in the routines are more likely to report what they actually do and hence on the performative aspect. In this study both managers and operational staff have been interviewed. My key contact was a procurement manager. Since he was asked about routines both directly involving himself as well as other routines, it is likely that a mix of aspects were provided. However, the routines in which he was not directly involved, such as the operational routines, were also studied based on interviews with operational staff members actually performing them.

Another important point of discussion is the appropriateness of using routines as representing the relationships as a unit of analysis in order to investigate learning. Though many have recognised the connection between learning and routines, this notion has also been criticised. The connection between learning and routines has traditionally been studied within the cognitive perspective of organisational learning. This perspective has often focused on outcomes of learning, such as routines, and been criticised for not acknowledging the dynamic and social dimensions of learning (Araujo 1998). However, in recent studies of routines their dynamic and social dimensions are identified, illuminating the processual feature of routines (Feldman 2000; Feldman and Rafaeli 2002; Feldman and Pentland 2003). Hence, a situated perspective of learning is included.

There is also a question of which changes in routines are actually a result of learning. This is very important for this study. Not all learning results in changes in routines. Similarly, not all changes in routines are a result of

learning. In this study, learning is related to changes or attempts of changes in inter-organisational routines that are identifiable for both parties and which have been communicated and discussed between the parties. Hence, consciousness about the change is a pre-requisite for stating that changes in routines are a result of some kind of learning process in this thesis. In addition, there may be changes that are not necessarily a result of learning themselves, but may require or trigger learning. It is further important to note that routines are in this thesis considered in terms of recurring behavioural patterns. This does not exclude that cognitive processes are also involved. However, a decision has been made to not include cognitive rules per se in this thesis.

The analysis of the sub-cases and the research process in this study can be described as a systematic combining. This concept was introduced by Dubois and Gadde (2002) and defined a “process where theoretical framework, empirical fieldwork, and case analysis evolve simultaneously, and it is particularly useful for development of new theories” (Dubois and Gadde 2002, p 554). This research approach hence stresses the continuous movement between an empirical world and a model world, implying that the research issues and the analytical framework are reoriented as the empirical work allows for confronting them with the empirical world. If we interpret systematic combining as a way of being in either a theoretical model world or an empirical world, it seems incompatible with an interpretivist view. However, the point with systematic combining is that in a practical research situation the researcher will periodically focus more on the empirical world, while at other times put emphasis on theories and analysis, in this way combining the views.

The cases in this study were written up, based on certain preliminary theoretical ideas and empirical studies. Simultaneously with the data collection, however, an extensive literature study took place, further guiding the empirical work. Preliminary analyses of the cases based on the theoretical work, were conducted during the collection. Hence, there were several rounds of analyses. The final focus on routines and resource interfaces was established throughout the analyses. This is reflected in how the cases are presented in the thesis. Each case is simultaneously described and analysed in two chapters. The first case for example, is dealt with in Chapters 5 and 6. Chapter 5 aims at providing an overall presentation of the relationship by focusing on the routines involved in it, and the consequences of the change incident for these routines. Chapter 5 is more descriptive than Chapter 6. This chapter looks more carefully at the consequences of the changes in the routines for resources and learning in the relationship. This is

the very essence of systematic combining, where no pure descriptions may be conducted. Instead every description is also an analysis.

2.5 Evaluation of the study

In qualitative research based on an interpretivist approach, other criteria for judging the quality of a study are applied compared to those in traditional social science. Credibility and transferability are used as analogues to the validity concept in traditional research. According to Patton (2002), the credibility of qualitative inquiry depends on three main elements: rigorous methods, the credibility of the researcher, and a philosophical belief in the value of qualitative inquiry. The quality and credibility of this study have been secured in various ways.

Firstly, what has been of particular importance is to set a standard for what qualifies as a learning situation and what is merely a change. Learning has here been related to changes in behavioural routines, resulting from a reflection about actions and outcomes. This approach to learning and routines excludes changes in cognition and cognitive rules. However, assuming that cognition is an inherent aspect of behaviour, a decision was made to focus on recurring behavioural routines. In addition, despite that this study of routines attempts to include a situated perspective of learning, the meaning and identity creating processes and the role of language in these processes, which are often emphasised in this perspective (for example Lave and Wenger's 1991 notion of how participants become members of *communities of practice*) have not been included. This relates to the focus of the study, where the role of routines in business relationships and the implications of changes within them have been prioritised, but also to the fact that the data collection was primarily based on interviews, although other sources were applied.

If the meaning-creating processes had been the main focus in this study of learning, observation of the participants in their everyday life would have been needed. One related issue to this recognition is that this latter perspective would presumably be more in line with an interpretivist and ideographic approach. Nevertheless, as stated earlier this study has been based on an interpretivist approach in the way that it is acknowledged that the research situation itself is a social construction process, where values and theories of the researcher influence upon the study and the findings. Finally, linking learning to routines of course excludes other important learning situations, which do not concern any recurring patterns. However this

decision has been based on theoretical considerations, in addition to a need to focus the study.

If we look further at the data collection methods, various methods have been applied both to ensure a broader view of the phenomenon and to check the consistency of the data and findings. Interviews were the main method to obtain data, but non-participant observation and document analysis were also important. As such a triangulation of methods was used. Discrepancies and gaps in the data were checked and in most cases the interviewees provided feedback on the interview notes and offered additional information. It is important to notice that the way data was collected, primarily based on interviews, means that the findings rely on the interviewees' perceptions and exposed theories. In a few occasions the interviewees were followed while conducting the routines, such as the operational staff in Rotterdam and in the meetings between the parties in the respective relationships studied. However, the findings in the study are primarily based on information from people engaged in the relationships and the various routines, not by directly observation by the researcher. Hence, the possibilities for discrepancies between what the interviewees said and meant about the issues and what was actually done, may differ.

Another potential weakness of the study relates to the fact that because of the access to the companies and resources available, most data was supplied by WWD, hence, focusing only one side of the various relationships. In addition, the key contact at WWD was also a main source of information. The data may, therefore, have been coloured by his point of view. However, this contact also provided access to valuable data, which without his help would have been difficult to gain. Besides, other employees in the company were also interviewed, including other procurement managers and product managers, as well as technical and operational staff. Thus various points of views were illuminated. As to the suppliers, more interviews were conducted with Supplier A than with the rest of the suppliers. This was due to the contact person in Supplier A being interested in the study and also because this the supplier was located near by. As a result, the relationship between WWD and Supplier A has been more thoroughly studied than the relationships with Supplier B and Supplier C.

As to the credibility of the researcher, Patton (2002) argues that the capabilities of researchers differ both in collecting data and in the analysing. In this thesis it is clear that the whole research process has been one of learning. It is hard not to be overwhelmed by the extensive data collected, and sometimes it is difficult to stay focused. The processes were not only looked at retrospectively, but also simultaneously, revealing a vast amount

of interesting aspects and elements of these processes. Not all could be followed up, and this may have resulted in important information having been overlooked. The systematic combining approach contributed at times to the feeling of losing focus, as new ways and opportunities were revealed. However, it also provided the possibility of sharpening the focus as conducting the literature study simultaneously with the data collection and analysis revealed that some paths were apparently more useful than others.

According to Patton (2002), the philosophical and epistemological issues are embedded in concerns about generalising. The pragmatic criterion of utility leads to the question of what one can do with qualitative findings. Conducting a qualitative study means that transferability rather than generalisation is sought. Being a sample of one, this case study, though involving three sub-cases, aims at describing and understanding the phenomenon of learning across firm boundaries. No statistical generalisations are drawn from this study. As Narduzzo, et al. (2002) notice, inferences that can be drawn from case studies are highly local and subjective. However, what such studies may provide is the possibility of “unbundling” concepts, offering further understandings of these concepts. The same is evident in this case study, offering an investigation of the three concepts of learning, relationships and routines and the connection between them. This may offer some further unbundling and hence understanding of these concepts and finally of learning across firm boundaries.

It is likely that the findings from this study of learning in business relationships based on an empirical investigation of WWD and the three supplier relationships may be compared to other similar situations of learning and relationships. The main focus in this study is to look at how learning takes place between companies, based on an investigation of routines in business relationships. WWD’s relationships with the three suppliers are in this sense general and relatively similar to other business relationships. If we had looked for whether or not learning actually takes place, several factors such as the studied companies’ motivation and ability to learn would have needed to be included. However, when looking at the processes and what learning actually is about, the case in this study represents the kind of situations and relationships that is relevant for understanding the phenomenon of interest.

2.6 Summary

This chapter has addressed the methodological issues underlying this thesis. The study is inspired by an interpretivist epistemology, implying that the study and the findings have presumably been coloured by the researcher's theoretical tools and values. It has been conducted as a qualitative single case study, with three sub-cases. The data collection has been based on interviews, non-participant observations and document analysis. The research process has been characterised by what Dubois and Gadde (2002) call systematic combining, describing the process as a back and forth process between the empirical and theoretical world. Several steps have been taken to ensure the quality and credibility of the study.

In the final section of this chapter, the companies studied are presented. Since the case is based on one focal company, WWD, and three of its supplier relationships, most attention is given to the customer company.

2.7 Description of the involved companies

WWD: The world-wide distributor to the marine sector

WWD is a Norwegian distributor of products and services to the international marine sector. The origins of WWD can be traced back to the early 20th century. The company mainly buys the products from external suppliers. However, WWD has a production unit in Norway producing industrial chemicals. In addition, the company acquired a producer of shipboard incinerators, stripping ejectors and fire windows at the end of 2004. WWD has 65 offices and 130 agents in 85 countries world-wide, employing 1439 people. In 2004, WWD achieved operating revenues of 2,230 MNOK. In 2004, 5000 ship owners, operators and management companies were served. WWD delivered to 15000 vessels in 1200 ports and 145 shipyards world-wide.

WWD is organised into five business units: Chemicals; Refrigeration; Safety; Maintenance & Repair (M&R) and Marine Systems, and further divided into a ship service division and a ship equipment division. The ship service division supplies ships in ports, while the ship equipment division supplies yards and the building of new ships. Earlier the operations of both these divisions were handled by WWD's international distribution centre

(IDC) in Rotterdam. However, in 2003/2004 the ship equipment division was moved to Poland and Shanghai where the large shipyards are located.

Until 2003, WWD was organised in a matrix structure with corporate functions for Sales & Marketing and Operations, Logistics & IT. The latter department handled the different business units' procurement. A separate unit at the IDC in Rotterdam handled the operational purchasing. As part of a reorganisation process during spring of 2003, the corporate function was taken away. A full reorganising of the IDC in Rotterdam also followed, resulting in substantial reduction in operational staff. Furthermore, the operational purchasing unit was integrated into the rest of the IDC operations. All units were now consolidated into one group.

Following the reorganisation, the business units were made responsible for all business, including procurement, sales and technical issues. A business director was in charge of each business unit and procurement and product managers were responsible for specific product groups within the units, including procurement, marketing/sales, and technical functions. The product and procurement managers were supported by technical staff and the operational purchasing staff in Rotterdam. Three of the relationships presented later in this thesis describe supplier relationships handled by the procurement and product manager of welding products within the M&R unit, supported by another product manager and a technical engineer. Together these constituted the "welding team". The responsible manager was located in Rotterdam, while the others at the Head Office in Oslo. The business director of the unit was also involved. The welding team handled 11 suppliers in total. As was the case with WWD in general, the supplier relationships within this product group had traditionally been long term and stable, and the suppliers were primarily based in Europe.

Supplier relationships

Interaction between WWD and the suppliers usually took place on the commercial, technical, and operational levels. At the commercial level there were contacts with sales personnel in the supplier company. At the operational level there was regular contact between the operational purchasing staff in Rotterdam who placed the orders, and the order handling staff in the supplier company. On the technical level, there was interaction between the product-technical staff in WWD and their counterparts in the supplier company. Business management had also started interacting with the suppliers in recent years. There was, however, little interaction at the top-

management level. All in all there were few points of contact with the suppliers.

Formally, interaction used to take place through annual negotiation meetings. Before Christmas 2002, WWD arranged negotiation meetings with suppliers. The cost-price system was based on the purchase price, and this formed the basis for the negotiation meetings. WWD usually met with approximately 100 suppliers, while negotiations with the rest of the suppliers were conducted via e-mail. The meetings had fixed agendas. Procurement management or business unit management was responsible for these meetings. However, in 2003 WWD decided to discontinue these meetings, which were considered as being time-consuming and unproductive.

A project of great impact on WWD's relationships with its suppliers was the SWOP (suppliers world opportunity project), carried out in 1999/2000. A new procurement manager initiated the project, arguing that WWD did not benefit to a sufficient degree from its supplier relationships. The idea was for WWD to break down the relationships, challenging the suppliers. Many of the relationships had existed for a long time, but the suppliers had never been challenged. A common saying within the company was that if you first became a supplier to WWD, you were in for life.

The project was highly appreciated and supported by top management, as WWD was experiencing a decrease in profit. The SWOP concerned the core suppliers, 50 in total. Though the corporate procurement unit was in charge of the project, it soon became a cross-functional teamwork, including procurement, product-technical, and sales staff. The aim with this cross-functionality was to gain as much knowledge about the products as possible. Teams were established for each specific product group, aiming at developing need specification lists for each product, including quality specifications and price. Based on these lists, the procurement staff went out looking for alternative producers. The suppliers were warned one year ahead of the "real" SWOP. The first year it was used as a threat in the price negotiations, and the next year it was put into action. The existing suppliers were then asked to quote all over again on the same basis as other producers. Though price was a major factor in the benchmarking, other factors such as overall service, product range, quality, and delivery routines were important as well.

The existing suppliers had never experienced a similar situation. Many of the suppliers thought that they would never be replaced because of their long-term relationships with WWD. To their surprise some were replaced because of price, and some because they did not react to WWD's requests at all.

According to one procurement manager, the value of the existing relationships was underestimated, and so were the SWOP costs. The relationships had been built up over years, and the different products were well known. Building new relationships was time consuming and costly. As the manager noticed: “It takes time to built up a new relationship, and in long-term relationships you share a common language and the parties know what each other is talking about. If there are problems, these are easier to solve when you know each other. There is also a high degree of trust involved, and a shared understanding. Business is about personal relations, and it means a lot who the contact persons are”.¹⁷ These problems also caused some internal disputes within WWD. The sales and product-technical staff claimed that the procurement people went too fast, being more concerned with price and not understanding the extent and consequences of all the changes. However, the disputes were eventually solved, though the sales and product-technical staff required that similar situations had to be avoided in the future.

Based on the experiences gained from the SWOP, a new benchmarking/evaluation routine was developed at WWD. SWOP somehow changed the way WWD handled the supplier relationships, and benchmarking became an important means to benefit to a larger extent from the supplier relationships. Comparisons between existing suppliers and other producers were carried out on a more regular basis, using the knowledge developed during the SWOP. The SWOP became a way of doing procurement at WWD. In 2003, WWD implemented a new sourcing strategy, implying sourcing from the Asian market. This strategy further reinforced the established benchmarking routine, and had accordingly implications for WWD’s supplier relationships.

Chinese supplier: The welding equipment producer

The Chinese supplier was established in 1980 and serves the international welding industry. The company owns seven subsidiary companies and has 35 branch offices. In 2004 its registered capital was 10 MUSD and it employed approximately 1000 people. The main site of the group, including the Head Office and three of its main production facilities, is located on the South East coast of China. Its sales and service network is located all over China. The group produces products within the following categories: electric welder, gauge/regulator, welding/cutting appliances, welding accessories, welding material, welding and cutting equipment and CNC series. The group

¹⁷ Interview no 7 in Appendix 1

supplies customers in over 30 different countries, including the US, Europe, Middle East, and South East Asia.

Supplier A: The gas welding equipment producer

Supplier A is the Scandinavian subsidiary of a European based group of companies specialised in flow and pressure regulation of gases. Supplier A was established in 1984, when the gas equipment division of Sweden's largest industrial gas company was made a separate company. In 1987, the company was further merged with the gas equipment operation of another large industrial gas company, forming a joint company. Through further acquisitions and mergers, the new company now comprises a group of 13 different subsidiaries all over Europe, with a total turnover of 1000 MSEK and 1000 employees. During the last 10 years, production has largely been moved to Eastern Europe. A production unit in the Czech Republic is now the largest one with 500 employees. Supplier A produces for the whole corporation and the respective markets.

Supplier A accounts for approximately 20% of the group's total turnover, i.e. 200 MSEK, and employs 45 people. Together with the group's Head Office, Supplier A is located in the South of Sweden. Supplier A is active in all of the group's business areas: industrial equipment, health care equipment, special gases, and high-pressure valves. They are responsible for customers in Baltic, the Nordic countries and South-America. There is no production in Sweden, and Supplier A buys 60% from external producers, including producers in China, and the rest from its sister companies. Supplier A consists merely of marketing, sales and logistics staff and an assembly line. In addition they run the group's central warehouse in Malmoe, Sweden.

Supplier B: The welding electrode producer

Supplier B is the world's largest producer of welding consumables and equipment, used in various welding and cutting processes and applications. The company was founded in 1904, based on the invention of the covered welding electrode. In 1994 Supplier B was bought by a British company, which consist of a group of manufacturing businesses. In 2002, Supplier B had a total turnover of 581.9 M£ and employed 6,700 people world-wide. The company is organised to operate in four business areas: welding and cutting equipment; welding consumables; welding automation and cutting systems. Supplier B is located in five regions: Europe, North America, South America, Asia/Pacific and India. Each of these regions consists of several

local sales and manufacturing units. The company's Head Office is in the UK. The largest production unit in Europe is located in Hungary. In addition there is a large production unit in Jakarta. The customers are found in the transport and off-road vehicle industry, in offshore, shipbuilding, and in power, process and construction industries. In each region, the goods are distributed via central warehouses. It is interesting to note that Supplier B used to have a 50% share of Supplier A. Supplier A was, however, sold in January 2004.

Supplier C: The global logistics provider

Supplier C is the Norwegian subsidiary of a global company in the international express and logistics industry. In its existing form the company was established in 2003, as two of the world's leading logistics providers merged. The company is providing total solutions from a single source, that is to say, a "one-stop-shopping" solution. The company is organised to operate in the following business areas: express, air and ocean freight, overland transport and logistics solutions. The international network links more than 220 countries and territories worldwide. Over 160,000 employees work in the company. The Companies Head Office is in the UK. Supplier C is active within all of the different business areas of the company, except for the overland transport. The unit handles Norwegian customers through 35 different offices, terminals and stations all over Norway. Supplier C employs 870 people.

Chapter 3. An empirical discussion of the role of routines in business relationships

3.1 Introduction

In the opening section of this thesis, an empirical example of the relationship between WWD and its new Chinese supplier was used to introduce the phenomenon of learning across firm boundaries. It was suggested that one way of approaching learning in business relationships was by looking at the role of routines. In this chapter the relationship between WWD and the Chinese supplier is further described. The following empirical illustration has two main purposes. Firstly, it aims at depicting the types of routines that are likely to exist in a business relationship. Secondly, the illustration forms a basis for a discussion on the connections between the concepts of learning, relationships and routines. The chapter ends with proposing some refined empirical research questions, which will further guide the case study in later chapters.

3.2 Establishing an exchange relationship

Background

On the 10th of May 2004, WWD and the Chinese producer signed a three-year contract for the supplies of industrial gas welding products. The contract was WWD's first major agreement with an Asian supplier of such products. WWD had previously bought a few other products from the Asian market. However, WWD's supplier base had hitherto been primarily located in Europe. One of the main drivers of this new supplier relationship was a new sourcing strategy at WWD, implemented in 2003. The strategy implied buying from low cost and USD based countries, i.e. the Asian market. WWD had a few years earlier without success, tried to implement a similar sourcing strategy. To stay competitive WWD's management was now forced to make a new attempt. After the SWOP project a few years earlier, benchmarking of suppliers was being exercised more frequently within WWD. The new sourcing strategy reinforced this practice. There were many discussions internally about the new strategy, which especially the product-technical and sales staffs were reluctant to adopt. They were concerned that the quality of

the products produced in Asia would adversely affect WWD's reputation as a high-quality distributor. As noted by one of WWD's product managers, it would, however, be a question of changing the mind-set from focusing on "the best possible quality" to focusing on "quality that fits the purpose".¹⁸

WWD and the Chinese producer met for the first time at a welding exhibition in China in October 2003. Encouraged by the new sourcing strategy, the procurement manager responsible for welding products and his colleagues in the welding team at the Maintenance and Repair (M&R) UNIT were regularly travelling to China, attending exhibitions and visiting welding equipment producers. WWD found the Chinese producer interesting, and after the two companies had met once again at another exhibition some weeks later, initial negotiations began. WWD sent an enquiry regarding a few products to China, and the response was very positive. In February 2004, the responsible procurement manager visited the Chinese producer's production site for the first time. He was very impressed by the highly computerised production facility. As he noticed, "walking through the Chinese factory was just like walking through the factories of any European supplier".¹⁹

During WWD's visit, a possible conflict of interest was discovered. The Chinese were already doing business with another customer in the same segment and were for that reason reluctant to also enter into a business relationship with WWD. However, after lengthy discussions with the president and owner of the Chinese company, a tentative agreement was reached. This was, according to WWD, due to WWD being willing to buy a larger variety of products, as well as complete product lines, than the other customer. WWD wanted the Chinese to be the sole provider of gas welding products, including gas welding and cutting equipment, regulators, and gas distribution systems.

Interaction pattern

Tough price and technical discussions followed the initial agreement to do business. The responsible procurement manager at WWD together with the rest of the welding team and the president and the key account manager of the Chinese company were involved in these discussions. The supplier kept increasing the prices when faced with changing WWD requirements. For example, when they received the first data sheets and samples of products

¹⁸ Interview no. 25 in Appendix 1

¹⁹ Interview no. 18 in Appendix 1

not currently in their product line, the prices for these new products were immediately increased. Similarly, when WWD wanted modifications to the products already being produced, or to the samples provided, the prices were again increased. The Chinese supplier argued that the final products were more complex and of a higher quality than they had anticipated. WWD found the situation unacceptable, and urged the Chinese to reconsider their position. In return, WWD would provide the Chinese with purchase prognoses for the whole following year. The Chinese finally agreed to the original prices. In addition to price negotiations, the terms of payment were also an object of lengthy negotiations. Finally, however, all disagreements were resolved and a three- year contract signed with price negotiations to be conducted yearly.

Following the signing of the contract, WWD began to develop an implementation plan, including actions to be taken, responsibilities for the respective actions, and time schedules. The plan was discussed in meetings between the welding team members and other staff members, such as the operational staff. WWD used the same routine with some adjustments for implementing new supplier relationships as had been developed during the SWOP project. The plan was presented and was discussed with the supplier in a meeting in China in June 2004. During the summer and autumn of 2004, staff from WWD, primarily the responsible procurement manager, but also product-technical staff, the director of the M&R business unit, staff from WWD's international distribution centre (IDC) in Rotterdam, and quality assurance staff from WWD's Head Office visited China on an average every month. A new sourcing unit in Shanghai also played an important supporting role. From September 2004, a staff member from this unit would be at the Chinese supplier's production site three times a week in order to control the progress towards the first shipment at the end of October 2004. It was important for WWD to have a person physically close to the supplier, since the responsible procurement manager was located in Rotterdam. This was also part of WWD's strategy for the subsequent transfer of more of the responsibility to WWD's supplier relationships in this area to Shanghai.

After a few months it appeared that the two companies had different views on how to conduct business. While WWD followed standard procedures for establishing new relationships, the supplier found WWD increasingly demanding. It also became evident that the initial contact persons did not communicate well. The key account manager at the Chinese supplier was replaced by a person who had more direct communication with the president of the company. There were also some problems with WWD staff members. In a meeting attended by all Chinese product managers, the WWD's Shanghai representative got into a heavy discussion with the president of the

Chinese company. This resulted in the president “losing face” in front of his managers. The president, therefore, requested WWD to replace the representative from Shanghai, as the president would no longer do any business with him. This was a major problem for WWD, as this person was important for the implementation of the relationship. However, WWD could not afford to jeopardize the relationship with the supplier, and a staff member at WWD Singapore replaced the original representative from the Shanghai unit.

Technical and operational issues

Along with solving the contact person problems, the two business partners had to work out operational issues, including technical solutions, quality of the products, labelling, documentation requirements, production processes, ordering, and distribution schedules. These issues were discussed in meetings between the parties. WWD initially wanted the Chinese producer to supply all the gas welding products. These products were not complex from a technological point of view, and the products had been basically the same for years. The Chinese were already producing many of the components WWD wanted to buy, thus the problems were mostly related to new products, such as the gas distribution systems. The Chinese company was an experienced supplier to other European customers and had a fully computerised production facility. Hence, WWD expected few problems. Nevertheless, agreement was only reached for the production of gas welding and cutting equipment and regulators. The Chinese claimed they could not produce the gas distribution systems, as these were new products. Consequently, WWD had either to continue with its old supplier of these products, or find another Chinese supplier. It turned out, however, that the real reason for the Chinese’ reluctance, was their unwillingness to invest in a new compressor necessary for testing the systems. After further discussions, an initial agreement was reached for these systems by the end of 2004.

During the first year of the relationship, product-technical staff at WWD and production staff at the Chinese supplier were occupied with testing, re-specifying and producing the products. Staff from WWD continued to visit the Chinese production site, in order to ensure that the re-specifications were followed up in production. Often the WWD staff had to explain carefully why there had to be changes, and how these might be accomplished, as the supplier had little knowledge about the products. WWD soon discovered that while the Chinese were good at copying, they had little knowledge about product development. In contrast to the situation with many of their other

supplier relationships, WWD was now the one with the most product knowledge, and they consequently had to teach the new supplier.

It was paramount for WWD to ensure a continuous quality level of the products. Quality was one of the main drawbacks in buying from China and the reason why people still considered Chinese-produced products inferior. Most of the operations in Europe were now automatic, while many of the operations in China were still manual. This made them vulnerable, as mistakes were easier to make. Though the Chinese producer had some modern machines, there was also still manual work necessary. The audit performed by quality assurance staff from WWD in August 2004 revealed that the supplier had no proper quality control systems. WWD, therefore, required the supplier to establish appropriate systems and procedures for such controls. An additional quality control routine was established. Samples of the regulators would be sent by courier to Rotterdam for testing. Only after approval, would the shipment be released. When arriving in Rotterdam, 10% of the sample would be sent to an external company for control.

Another important topic of discussion besides of the products per se, was the production, ordering and delivery routines. WWD was as yet a rather small customer to the Chinese, and constituted a low percentage of the Chinese producer's total production capacity. The total sales volume was worth approximately 500 000 Euros. It was hence a struggle to receive priority in their production schedule, as the Chinese's production facilities were running close to 100% capacity. It was crucial for WWD to get reliable deliveries before discontinuing the relationship with its existing supplier. The worst scenario for WWD was to run out of stock, which had happened in another switch of supplier following from the SWOP project.

The operational routines with the Chinese supplier differed substantially from those of WWD's existing supplier of these products. While the existing supplier received orders every week, had 1656 order lines per year, and approximately 26 shipments, the Chinese supplier would receive 4 purchase orders per year, 350 order lines and 4 shipments. This meant that the stock level in Rotterdam would increase. Due to the significantly lower purchase prices, WWD could afford to have the goods delivered to Rotterdam rather than having the Chinese ship directly to the customers. However, with this routine, some goods could be sent from China to Rotterdam and then back to China again. This was obviously a bad solution, and the problem was not solely related to this particular supplier. The whole IDC concept was increasingly being questioned. The challenge would be to empower the other WWD units to handle the business themselves. This would require a substantial re-organising of resources and routines.

The first shipment was scheduled to leave China at the end of October. WWD had arranged with their global logistics provider to handle the distribution as this provider could offer a better price than the Chinese supplier was able to arrange with its provider. With a transport time of six weeks, WWD expected the products to be in Rotterdam before Christmas 2004, and ready for shipment to the network by 1st of January 2005. In mid October everything seemed to be following the plan and all issues regarding packaging, labelling, quality, documents etc were expected to be solved by the shipment date, though there were some negative test results that had to be handled. However, on the 14th of October, on his way to a meeting with the old supplier, to inform about the new agreement, the responsible procurement manager received a phone call from China, informing him that the shipment would be delayed. This situation had to be resolved immediately.

WWD staff went to China to sort out what was happening. The two parties continued the discussions about shipment dates and finally reached an agreement that the first shipment of regulators would leave China by the mid of November, and hence be in Rotterdam by Christmas 2004. The rest of the order would be sent by the end of November and be in Rotterdam by mid January 2005. During the visit the former key account manager at the Chinese supplier informally told the WWD staff that the agreed upon lead times were not realistic due to capacity problems at the factories.

It was obvious that the lead times had to be extended. Hence, the parties agreed to increase the original lead times to 50 days. In addition to increasing lead times to ensure on-time deliveries from the supplier, the ordering routine was also adjusted. WWD and the supplier agreed initially that WWD's operational staff would place four orders a year. However, in the beginning of 2005 the parties agreed that WWD would send the next two purchase orders at the same time to facilitate more predictability. In this way the Chinese would have more time to plan the production. Though the order dates were now set, flexibility for changes in sales volumes was still included.

Status one year after signing the contract

Implementation of the relationship with the Chinese supplier was run like a project, in order to ensure the "implementation of the relationship". The most important thing for WWD was to get the supplier up and running. Based on previous experiences WWD expected some problems, but soon found out that they had underestimated the complexity of establishing this

new relationship. WWD used the same procedures for implementing relationships with European suppliers, but it turned out that establishing a relationship in China was quite different. However, by the mid 2005, one year after signature of the contract, the various exchange routines and the relationship itself seemed to be in place. There were still some small problems, but these were solved on a continuous basis. In addition, it also turned out that when it concerned the gas distribution systems WWD continued to buy these from the old supplier, due to new safety requirements. In summary, one year after the signing of the contract, the responsible procurement manager at WWD recognised that the relationship with the Chinese supplier still needed much attention and continuous surveillance. Even though the change over to the new Chinese supplier was tough, the manager stated that he would have done it all again. The benefits, in terms of the cost savings, made it worth the effort.

3.3 Routines in the relationship

The above example illustrates the establishment of an industrial exchange relationship between a customer (WWD) and a supplier (the Chinese producer). What does the example tell us about routines in business relationships? Firstly, it illustrates what types of routines are likely to be important for the functioning of a business relationship. Secondly, it also gives us an impression of the role such routines play, and how they are established and changed. In this section, we will concentrate on the former, while the latter will be more thoroughly discussed in the following section.

The establishment of the relationship between WWD and the supplier may be seen as the establishment of various inter-organisational routines. These routines aid the co-ordination of the exchange processes between the parties and hence create stability and efficiency in the relationship. As the example above shows, the inter-organisational routines consist of a set of sub-routines at each company. Examples of these are the quality control routines at each party. There are a number of different routines and sub-routines that may be seen as important to this relationship, both directly and indirectly. Examples of the latter are routines that WWD has with its customers. In order to limit the scope, only the inter-organisational routines and sub-routines involved in them that appear most important in the relationship will be emphasised.

The sub-routines can be considered as part of more overall inter-organisational routines, though they are actually intra-organisational in the sense that they take place at each of the respective companies. In addition,

there are routines that are merely intra-organisational, but still important to or influential on the relationship. An example from the relationship between WWD and the Chinese supplier is the production routine in China. This routine could have been considered as inter-organisational, if WWD had used the products as inputs in its own production. However, as WWD is only a distributor (except from the production of chemicals), the products from the suppliers are not used in any further production processes. In this thesis the focus is on the inter-organisational routines in a relationship. The production routine will hence be treated as a sub-routine in the overall delivery routine. In addition to the production routine, other intra-organisational routines also appear to be important in this relationship. For example, the benchmarking routine at WWD has proven important, as we may say that this routine was the main cause to the establishment of the relationship. In addition, the implementation of the relationship was supported by what we may call WWD's intra-organisational routine for establishing new supplier relationships. Though these routines are important in themselves, they will here only be considered in relation to the inter-organisational routines in the relationship and the impacts upon these.

Using the example, we may identify which overall inter-organisational routines are important in a business relationship. As stated in Chapter 1, routines in a business relationship are established to co-ordinate various exchange processes. Examples of such exchange processes are exchange of information, products, and money. There is also a social dimension in a relationship, and we may as such talk about social exchange. In the relationship between WWD and the Chinese supplier, one of the first routines that evolved, was the price negotiation routine. This routine developed as the parties engaged in several rounds of negotiations in the beginning of the relationship. In some ways this routine preceded all the other routines. There were several negotiations during the first year. This was due to additional products being included. The prices were set for one year at a time, and price negotiations were planned to be held once a year. Hence, a more regular routine would follow.

The price negotiation routine provided exchange of information in the relationship. Another important routine in this respect was the *meeting routine*. In the beginning most meetings were related to price negotiations. However, soon the parties established a meeting routine that did not only concern price negotiations. The meeting routine, in addition to being an arena for information exchange, also facilitates social exchange, from which trust and mutual understanding between the parties could emerge. WWD and the supplier met on a regular basis. In the beginning, approximately once a month staff members from WWD visited China, to ensure the

implementation of the relationship. This involved among other things that the technical specifications from WWD were being followed up in the production. Although the frequency of these regular meetings decreased as the implementation period progressed, the meetings continued on a regular basis. It was recognised that this relationship needed a close follow up and maintenance and hence it is likely that the meeting routine that developed continued, being subject to adaptations in form and content.

For the exchange of products, the example shows that this process involves several routines. Firstly, there is the ordering. Both WWD and the supplier had existing, standard routines for ordering and handling of orders. However, the routine in this particular relationship was to some extent adapted to match the needs of these two business partners, such as the ordering frequency. This routine consisted of several sub-routines or inter-related routines. The pre-requisite for any purchase order was an evaluation of the stock levels at WWD's IDC in Rotterdam, based on the report generated by the ERP system. This was a daily routine performed by the responsible stock planner. However, the handling of the orders in this relationship was conducted through the overall *ordering routine*.

The delivery routine is the next step following the ordering routine, in co-ordinating the exchange of products. Similar to the ordering routine, both WWD and the supplier had existing routines for handling deliveries. When establishing the routine in this particular relationship, the two business partners adapted their current practices to accommodate each other. For example, the reception of these products had to be handled in a different way at the IDC in Rotterdam. A new quality control routine was added to the overall delivery routine to ensure correct deliveries. For the supplier, the overall delivery routine starts with the production of the products. They had to establish new production routines for producing some of the products for WWD. In addition a quality control routine was developed. These various sub-routines were all part of the overall *delivery routine*, which was hence another important routine in this relationship.

When it comes to economic exchange, the example reveals one specific routine, the *invoicing/payment* routine. The payment routine was, as we saw in the beginning of Chapter 1, a topic of discussion between the two parties. The final agreement implied that WWD had to adjust its existing practices of automatic payment being dependant on the booking in of the goods. WWD instead had to pay within 14 days of shipment of the goods.

This chapter has presented an empirical illustration of routines and various sub-routines that are likely to exist in a business relationship. Though the

analysis is not all embracing, it is likely that these routines exist in business relationships in general. In summary, WWD and the new supplier established inter-organisational routines for the following activities:

- *Price negotiating*
- *Meeting*
- *Ordering*
- *Delivering*
- *Invoicing/payment*

It was argued in the introductory chapter that an understanding of the role of routines in business relationships would be a way to approach the phenomenon of learning across firm boundaries. The above identification represents a first step in the further study. It has provided us with an idea of which routines we should look for, and will as such guide the pending case studies. In the next section, a further discussion about how routines may be used to investigate learning across firm boundaries, by linking learning and business relationships will follow, based on the empirical example provided in this chapter.

3.4 Discussion on learning, business relationships and routines

In this section, we will further elaborate on the idea presented in Chapter 1 of connecting the two concepts of learning and business relationships through the means of routines, and relate it to the overall empirical question proposed at the end of Chapter 1: How is learning reflected in business relationships, when routines are in focus? If we look at the example presented in this chapter, how may we think of the three concepts, the connection between them and this question, and what further questions emerge from this empirical illustration with regards to this connection?

One important issue arising from the empirical example is the role routines actually play in business relationships. We have already identified what types of routines are likely to exist. However, of more interest is the question of their use. We have earlier seen that one important aspect of routines is their co-ordinating function. If we look at the example, the routines established in the relationship between WWD and the Chinese supplier, are used to co-ordinate the various exchange processes and to create stability and efficiency in the relationship. A preliminary answer to the above question is hence that business partners use routines to co-ordinate their

activities. However, this poses the following question: What is then being co-ordinated?

Furthermore, we may also wonder how routines are actually used in terms of standardisation and adaptation to different relationships. The routines in the relationship between WWD and the Chinese supplier are apparently general routines for both parties, in the sense that both WWD and the Chinese supplier have similar routines with other suppliers and customers, respectively. However, an interesting question is whether the routines are used in a standard way with many other counterparts, or if they are specifically adapted to specific partners. In other words, is WWD's delivery routine standard for all its suppliers, or are there specific adaptations to the Chinese supplier for example?

While the above questions relate to the connection between business relationships and routines, we may also ask which questions are generated when it concerns the connection between learning and routines. It was argued in Chapter 1 that learning is related to changes in routines. In the example given, WWD and the Chinese supplier established routines to provide efficient and stable exchange and changed these accordingly when they did not work properly. An important question in this respect is how routines evolve, or more precisely, what types of learning processes are involved in these efforts? Accordingly, it is also highly relevant to understand what triggers such changes and learning, and the implications of this learning.

The overall empirical question proposed in Chapter 1 was followed by two more specified questions. The first of these concerned how companies use routines to co-ordinate with business partners. Based on the above discussion, we may ask more specifically:

- What do inter-organisational routines co-ordinate in business relationships?
- How do such routines appear, in terms of standardisation or adaptation to specific relationship partners?

The second question concerned how the use of routines in business relationships is affecting and affected by learning. The above discussion leads to the following specified questions:

- How do inter-organisational routines evolve?
- Why do such routines change?
- What are the implications of such learning?

These questions will aid the development of the following case study presented in Chapters 5-10 later in the thesis.

3.5 Summary

In this chapter, an empirical example of the establishment of the relationship between WWD and the Chinese supplier has been described. This description served two main purposes. Firstly, it provided the possibility of identifying what types of inter-organisational routines are important for the functioning of a business relationship. Though it is acknowledged that a great number of routines and sub-routines are important in this respect, five overall routines were identified as being particularly important. These were the price negotiation routine, the meeting routine, the ordering routine, the delivery routine, and the invoicing/payment routine. Secondly, the example also provided a basis for further empirical discussions about the connection between learning, business relationships and routines, and how learning is reflected in business relationships when using routines as a starting point. This concerned how companies use routines to co-ordinate with business partners, or more precisely, the connection between business relationships and routines. Furthermore, the discussions concerned the connection between learning and routines, in terms of how companies' use of routines in business relationships affects learning with relationships partners and vice versa, how this learning affects the use of routines. Based on this empirical discussion, some refined empirical research questions were presented. Together the identification of the five inter-organisational routines and the more specific research questions connecting the three concepts of learning, business relationships and routines will serve as a guide to the pending case study later in the thesis.

Chapter 4. Theoretical frame of reference

4.1 Introduction

This chapter elaborates further on the issues discussed in Chapters 1 and 3 of this thesis. It presents a review of two theoretical perspectives where the concepts of learning and business relationships and the connection between them are further investigated. The review aims at discussing the possibilities of connecting these two concepts through the means of routines from a theoretical point of view, hence providing a preliminary answer to the overall theoretical question posed in Chapter 1: How may routines be used as a link between learning and business relationships in order to investigate and understand learning across firm boundaries? The review provides as such a theoretical basis for the following study. The review discusses principal types of issues and processes of relationships and learning, by using what are considered typical contributions within the chosen literature.

In the first part of the chapter, the role of routines in business relationships is being elaborated upon. The understanding of such relationships here is based on the IMP (Industrial marketing and purchasing) research tradition. As we saw in Chapter 1, this stance of research has been concerned with analysing and describing business relationships in industrial markets for over 30 years. The focus here is put on the way in which companies are embedded in a network of inter-related companies and relationships. In addition to looking at the role of routines, we shall also see how the concept of learning has been treated within this tradition.

In the second part of the chapter, the role of routines in organisational learning is further elaborated. An adaptive perspective of organisational learning, as derived from the behavioural theory of the firm and evolutionary perspectives is used as the main basis for understanding organisational learning. Learning is here seen as encoded in routines (Levitt and March 1988) Though primarily concerned with learning processes within firms, the adaptive perspective has also proved to be useful in investigating inter-organisational learning processes (Holmqvist 2004). However, while this research has been concerned with formal collaborations and cognitive rules, we are here interested in looking at behavioural routines in on-going relationships between customers and suppliers in industrial settings.

Based on the insights from the IMP research tradition and the adaptive perspective of organisational learning, possibilities and ways of relating the concepts of business relationships, learning, and routines are discussed. Finally, some refined research issues are suggested for analysing the sub-cases in the following chapters.

4.2 The role of routines in business relationships and industrial networks

What role do routines play in business relationships? In the following sections, we will look at the role of routines in business relationships, based on an investigation of research that is considered to be typical contributions within the IMP research tradition. Three main approaches and respective models will be looked at: the interaction approach and the interaction model, the industrial network approach and the activity-resource-actor (ARA) model and, finally the resource interaction framework. With a few exceptions (see for example Araujo and Mota 2004; Harrison and Huemer 2005; Harrison and Bygballe 2006), the IMP research has not been specifically concerned with routines. Nevertheless, we saw in the introductory chapter that routinisation of exchange processes is considered as one feature of business relationships (Håkansson and Snehota 1995; Håkansson and Johanson 2001).

4.2.1 The interaction approach

In order to understand the role of routines in business relationships, based on the IMP research tradition, we need to go back to the history of ideas within this tradition. The IMP tradition is often referred to as the interaction approach. The approach stems from a major empirical project carried out in the late 1970s. Based on an increasing recognition of the existence of long-lasting exchange relationships, researchers from various institutions and countries came together in what has been called the first IMP project. The aim was to understand exchange relationships, and the dyadic relationship was used as the unit of analysis.²⁰ The project accumulated in the following model for how to understand and analyse industrial exchange activities.

²⁰ For a more extended description of the study, see Håkansson (1982)

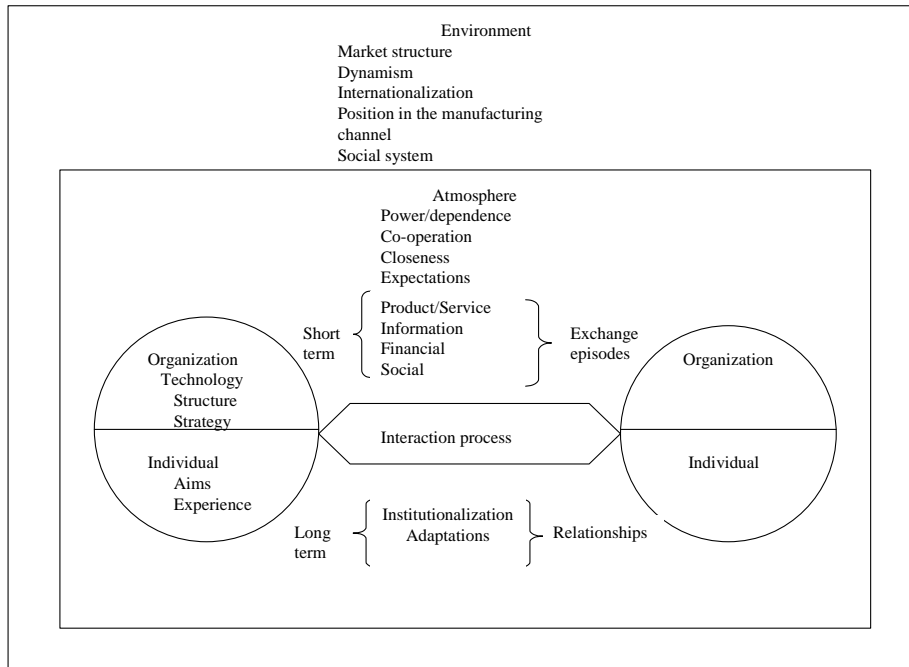


Figure 4.1 An illustration of the interaction model. Source: Håkansson 1982, p.24

The interaction model illuminates the very basic assumptions in the interaction approach. It describes the main variables and the short-term and long-term aspects of the interaction process between buying and selling companies. In order to analyse and describe this process, four groups of variables are suggested: (1) the interaction process itself, (2) the parties involved in the process, (3) the environment within which interaction takes place, and (4) the atmosphere affecting and affected by the interaction (Håkansson 1982). The interaction process is influenced by both the single episodes of exchange and the relationship itself. The single episodes describe the short-term exchanges of products, information, money and social symbols. These episodes are not seen as discrete transactions, but more as one of many transactions in a certain relationship.

Three dimensions constitute the long-term relationship variable. Firstly, the routinisation of the exchange episodes over time leads to an institutionalisation of the relationship. Furthermore, contact patterns are established through the exchange of information. Finally, adaptations are made in the elements exchanged or the process of exchange. The model shows that a relationship is both dynamic in terms of the individual exchange episodes that take place, but also stable in terms of the length of the relationship, its routinisation, and the expectations of the involved

parties. Both the characteristics of the involved parties and the nature of the interaction process itself influence the relationship. This in turn is a function of the technology and the environment, as well as the atmosphere in the relationship, describing degree of conflict and co-operation in it.

As we see, routinisation is given a central role in this first IMP model. Routinisation leads to institutionalisation, and constitutes the long-term aspect of business relationships. The institutionalisation of the relationship, provided by routinisation, is both a result of the interaction processes, as well as constituting a frame in which further interaction takes place. As such it is not the routinisation itself that is in focus, but more the way it influences the future interaction processes.

4.2.2 The industrial network approach

Based on the interaction approach, several studies within the IMP tradition have aimed at further refinement of the basic ideas from the first project. Similar to the original interaction model, these have recognised routinisation as a feature of business relationships. According to Håkansson and Snehota (1995), the IMP studies on interaction and relationships, as well as studies on these same topics within other theoretical perspectives, have recognised some common features, which Håkansson and Snehota (1995) term structural and process characteristics. The structural characteristics relate firstly to the continuity of business relationships. It is argued that relationships are often both long term and stable. Furthermore, business relationships are characterised by complexity, as they encompass complex contact patterns between different individuals in the respective firms, constituting the relationship. The degree of complexity also relates to the scope of the relationship and how it is used. In addition, relationships are often symmetric, meaning that the involved parties' resources and initiatives are relatively balanced, and that both parties may very well be active participants in initiating change for example. The last structural characteristic of business relationships is informality. There is often a low degree of formalisation in business relationships. Instead of relying on formal contracts, parties in a relationship establish certain norms for how to interact and handle problems. Trust is an important element in this respect.

In addition to the structural characteristics of business relationships, research on interaction processes has also revealed certain process characteristics (Håkansson and Snehota 1995). One such process characteristic is adaptation. Mutual adaptation in products, processes, knowledge and

routines are crucial in order to develop a relationship. Such adaptations are the very substance of relationships, as they generate and reflect mutual commitment and trust.²¹ Relationships are also characterised by both co-operation and conflict. In order to make a relationship work, co-operation is needed. However, there will always be a certain degree of conflict involved, at least over the division of the benefits from the relationship. A third characteristic is the existence of social interaction. This means that personal relationships between individuals involved in the relationship develop. Based on social interaction, trust may emerge. The last process characteristic of relationships is that of routinisation. Over time a relationship becomes institutionalised. Companies tend to establish routines in order to co-ordinate the individual activities and resources within a relationship. Through routinisation stability and cost-efficiency are achieved.

According to Håkansson and Snehota (1995), the structural and process characteristics of business relationships illustrate that stability and change co-exist in business relationships. Though there is a certain indication of stability in relationships provided by the structural characteristics, the process characteristics reveal that because of interaction business relationships continuously change. The changes are however often more evolutionary and incremental than radical. Given the degree of changes in business relationships, Håkansson and Snehota (1995) argue that continuity is probably a better word to describe such relationships than stability.

The first network model

In 1986, a second IMP project was initiated. The new project had a similar focus on exchange relationships as the first project. However, while the first project revealed that business markets consist of relationships between interacting parties, the second project showed that a key feature of such relationships is connectedness. As we shall see later, the notion of connectedness has important implications for how to understand routines in business relationships.

Connectedness relates to the notion that a relationship is a result of an interaction process, where connections have been developed between two

²¹ Hallèn et al. (1991) argue that adaptations are an important aspect of interfirm exchange. In their study, these authors found support for the argument that adaptations are partly made unilaterally because of the imbalance in the power relation between the involved parties, and partly adaptations reflect reciprocal trust and commitment in a relationship.

parties that produce a mutual orientation, commitment, and interdependencies. As Håkansson and Snehota (1995) remark, the core in the “relationship” view of industrial markets is that over time the interaction process and the interdependencies created through this process produce something unique by interlocking activities and resources of the two involved parties. This uniqueness cannot be produced by either of the two parties alone or easily duplicated. The parties become embedded into each other.²² The notion of connectedness also relates to the recognition that relationships are connected.²³ One implication of this view is the understanding that stability and change are not merely a question of what happens in the dyadic relationship. These processes are both influenced by and influencing upon the total network of other relationships to which a relationship belongs.²⁴

Based on the second IMP project and the notion of connectedness, a network model was developed (Håkansson 1987; 1989; Håkansson and Johanson 1992). It includes the most important links between three elements, which are assumed to comprise the content of a business relationship: actors, activities, and resources. Actors are defined as those performing activities and using/controlling resources, including individuals, groups of individuals, parts of firms, firms, and groups of firms. Actors are described by the activities they perform, the resources they control, and the knowledge they possess about activities, resources and other actors in the network. Each actor is embedded in networks of relationships, which provide access to external resources. Actors are goal-oriented, in the sense that they seek to control the network by control of resources and activities directly or indirectly through relationships. By using their knowledge based on past experience, they seek to improve their position in the network.

Activities are processes performed by actors, whereby resources are used to transform or transfer other resources. The transformation of a resource implies that it is improved upon by the use of other resources. Transaction activities link transformation activities. Single activities are linked to form

²² The concept of *embeddedness* is widely used in the IMP research tradition. Granovetter’s (1985) discussion of the importance of social structures and Uzzi’s (1997) classification of different forms of embeddedness often serve as main sources to the understanding and use of the concept within the IMP group.

²³ Social exchange theory argues that “two exchange relations are connected to the degree that exchange in one relation is contingent upon exchange (or nonexchange) in the other relation” (Cook and Emerson 1978). This view of connectedness has been widely adopted in the industrial network approach.

²⁴ This notion has resulted in many studies of network changes (see for example Hertz 1996; Halinen et al. 1999)

activity chains, both within the single company and across organisational borders. Hence, activities in a network are coupled in various ways and to various degrees. The coupling implies that any change in one activity must be followed by some adjustment in the activities to which it is linked. Some activities and activity cycles are more regular than others - they are repeated. Experiential learning creates routines, and the activities become stabilised and institutionalised.

In order to perform, transform and transfer activities, resources are needed. These may be physical (e.g. products), financial or human (e.g. know-how). Resources are controlled by actors, either by one or jointly by many actors. A main issue for a company is to gain access to the resources required. Because resources are heterogeneous, their value depends on how and with which other resources they are combined.²⁵ A resource can simultaneously be used in different activity cycles and in different ways. However, the dimensions that are used and the value of the resource may differ. An important issue in this respect is to what extent this is possible or at what cost. New or improved combinations of resources may emerge as actors gain experiences and knowledge about the resources. This new knowledge can result in changes or break in existing activity cycles and thus provide development and change in a network.

According to Håkansson (1987) these three elements form within them a network structure as illustrated in the figure below. Actors are connected to other actors, and activities and resources are connected to other activities and resources. In addition, they are inter-connected in a total network.

²⁵ This view differs from the traditional notion of resources as homogeneous, where their value is seen as given. Resource heterogeneity is further described in section 4.2.3.

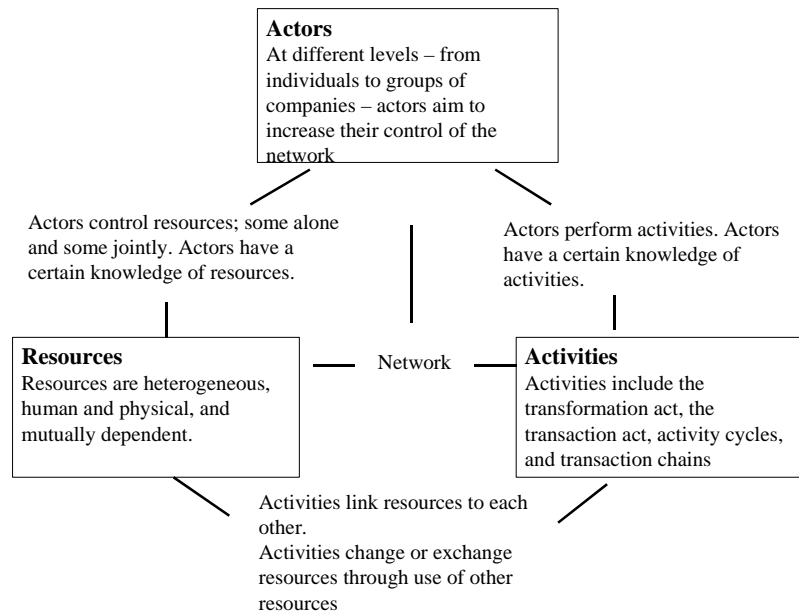


Figure 4.2 Network model. Source: Håkansson 1987, p.17

As we see, this network model has a similar view of routines as the original interaction model. Routines lead to institutionalisation, which provides a relationship with stability. As described above, routinised activity chains intersect both within and across firm borders. It follows that changes in these routines, for example in terms of how resources are used, will transcend to other related activities and resources. Before we go any further into this discussion, we will look at the most recent network model within the IMP tradition, developed by Håkansson and Snehota (1995). The model will be referred to as the “activity-resource-actor (ARA)” model and is a further development of the first network model.

The second network model: ARA

The ARA model goes further into the effects of business relationships than the first network model. For our purpose, it contributes to further illuminate the effects of routines in business relationships. According to Håkansson and Snehota (1995) the ARA model can be used in at least two ways. Firstly, it can work as a conceptual framework for analysing the effects of change in a relationship. Secondly, it may be used to identify the factors that affect the possibilities for developing a relationship and as a heuristic device in coping

with relationships in business markets. A basic assumption in the model is that the connections in a business relationship affect both the substance and the function of the relationship.

The substance dimension of the new model is described in terms of the original three layers: activities, resources, and actors. However, the new model seeks to describe how these are affected by business relationships. The various layers in the new model are described at three different levels: the company level, the relationship level, and the network level.

The actor layer is described in terms of organisational structures, actor bonds, and web of actors, respectively, at each of the three levels. Each company has an organisational structure, comprising the company's identity. Business relationships connect different actors, creating actor bonds. These bonds affect what the two parties in a relationship know about each other, and hence how they perceive and evaluate each other, in addition to how they behave towards each other. This allows mutual commitment to be established. Bonds between two parties in a relationship influence their identities, both in relation to each other as well as towards other companies. Identities are shaped as the parties in the relationship learn about each other and the interdependencies between them through direct interaction experience. In addition, it may also be learned by the perception of the counterpart's business relationships to other companies. Each company in a relationship may be part of several actor bonds with different companies, and the bonds in a relationship are hence a part of a wider web of actors. This web of actors is both affecting and being affected by changes in the actor bonds in a relationship.

The activity layer is described in terms of activity structures, activity links, and activity chains at the respective levels. Internal activities in a company, including technical, administrative and commercial activities, make up an activity structure. In business relationships, the internal activities of each party are connected. The internal structures both affect and are affected by the interacting activities in the relationship. The activity links influence how and when different activities are coordinated and carried out. This in turn impacts the costs and effectiveness of the activities and hence the outcome of the relationship. Because activity linking permits novel structuring of activities, it allows for increased productivity. Furthermore, each party in a business relationship relates to several other companies, making up various activity links. These links may connect to other links constituting an activity pattern of interconnected activity links among a variety of different companies. Because of this interconnectedness, changes in the activity

pattern will affect the activity links in a business relationship, as well as changes in a relationship's activity links will affect the overall pattern.

The resource layer is described in terms of resource collections at the company level, resource ties at the relationship level, and resource constellations at the network level. Companies need and control various resource elements, both tangible (e.g. products) and intangible (e.g. know-how). A business relationship is itself a resource to be exploited and used, because it makes available various resource elements for the parties involved in the relationship. A business relationship provides access to various resource elements of each party in the relationship. However it also provides the opportunity to combine the involved parties' resource elements, and hence creates unique resources. When resources are combined, they may over time become closely oriented towards each other, and resource ties will emerge. The extent and type of resource ties in a relationship affect productivity and innovation, and hence the outcome of the relationship. There might be various resource ties within a specific context, involving different companies. These interconnected resource ties then make up an overall resource constellation.

The three layers of substance in a business relationship are highly interrelated. Actors perform activities in which resources are used, and the activities evolve as actors develop their capabilities in utilising resources. As actor bonds emerge, activity links and resource ties may occur and interdependencies tend to increase. Though the three layers are closely related, Håkansson and Snehota (1995) stress that they do differ in the effects they make. Business relationships may be characterised predominantly by only one or two of the layers. The existing links, ties, and bonds in a relationship are often only a few of the possible connections, and usually these connections are not fully exploited. The interplay between the three layers underpins the dynamics and development of business relationships and networks. Each of the layers affects the value in a relationship and hence its outcome. The characteristics of the three layers and the interplay between them influence the function of a business relationship.

The second dimension of business relationships relates to their function, that is to say, whom they affect (Håkansson and Snehota 1995). A relationship has an effect on the dyad itself. The relationship becomes a "quasi-organisation", where the two involved parties can perform activities and use resources, which would not have been possible by one alone. This "team-effect", to use Alchian and Demsetz (1972) term, is an inherent potential in a relationship, and its exploitation will determine the quality of the

relationship. It further depends on how developed the three layers of substance are in the relationship. For example, the interplay between them illuminates whether a relationship is close and co-operative or more transactional. The connections between the layers in terms of adaptation are for example likely to reflect the closeness of the relationship, as adaptation reflects mutual orientation and commitment.

Relationships also affect the single company's performance by affecting its activity structure, resource collection, and organisational structure. A company's total set of relationships determines its competence, productivity, and innovativeness. Finally, relationship interaction influences and is influenced by other relationships to which the interacting partners are connected. Each business relationship is embedded in a set of connected relationships forming a network structure. As such, the effects of the connections between activities, resources, and actors, that is to say the function of the relationship, will not only affect the single dyad, but each of the companies involved, and also the network in which the relationship is embedded. This means that any change in the substance of one relationship will affect the wider network of interrelated companies.

Given the three functions of business relationships, the effect of a relationship is not only determined by the individual company's acts, but as much on how the counterpart acts and will react to third parties' acts. Furthermore, by connecting activities, resources and actors in specific ways, business relationships both benefit and put constraints on the dyad and the single parties in the relationship. In addition, they also affect the network in which the relationship is embedded. Hence, though relationships allow for potentially unique actions, they may also be extremely costly because of the specific bindings they make. Accordingly, the core in Håkansson and Snehota's (1995) argument is that though companies create relationships voluntarily, when they have first come into existence they also become a constraint for the parties involved.

Routines and industrial networks

What are the main implications of this view of connectedness, as described in the two network models, for the notion of routines? Similar to earlier works and models within the IMP tradition, Håkansson and Snehota (1995) argue that business relationships tend to become institutionalised over time. Routines are considered as important means in this respect. Routines are here defined as both explicit and implicit rules of behaviour and rituals of conduct (Håkansson and Snehota 1995). Routinisation of exchange episodes

over time provides both predictability and stability to a relationship. Firstly it results in clear expectations of roles and responsibilities of both actors. It provides as such a resolution of possible conflicts in a relationship. Furthermore, it contributes to stabilising the exchange processes between relationship partners, and so the possibility for increased cost efficiency. However, Ford, et al. (2003) remark, institutionalisation may result in existing routines not being questioned, and finally becoming inappropriate in fulfilling either party's needs or requirements. This is a potential problem of institutionalisation (Håkansson and Snehota 1995).

Relationship partners establish routines in order to co-ordinate their respective activities and resources (Håkansson and Snehota 1995; Holmen 2001; Håkansson and Johanson 2001; Araujo and Mota 2004; Harrison and Bygballe 2006). Routinisation is accomplished through codification of activities and the embodiment of procedures in human and physical resources (Araujo and Mota 2004). Harrison and Bygballe (2006) argue that three types of routines can be identified in a business relationship. Two types are the respective intra-organisational routines at each of the parties used for handling the counterpart. The third type is the inter-organisational routines, connecting the two parties more directly. As such, routinisation of activities, in which resources are combined and used, takes place both within and between companies. Similarly, Araujo and Mota (2004) note that routines intersect and interact across firm boundaries, and enable cross-relationship co-ordination (Håkansson and Johanson 2001).

It is important to notice that routines may be standard, meaning that they are used in a similar way for many counterparts, or they may be adapted for a specific counterpart. It is often emphasised that adaptation of routines is often necessary to achieve their assumed benefits (Johanson and Mattsson 1987). A potential problem is, however, that as adaptation of routines is important for the cost efficiency of the single relationship, it is not necessarily beneficial for a single party's activity structure as a whole. Major adaptations in one relationship may require the reallocation of activities, involving the breaking up of certain routines. This may have implications for the party's other relationships (Håkansson and Snehota 1995). It is hence a balance between what can be achieved by adaptations in one relationship, and what can be achieved by standardisation of processes in an overall perspective. In Harrison and Bygballe (2006), this dilemma is well illustrated by a case study of a selling company changing its customer-handling routine from having local offices experienced with the handling of specific customers to introducing a customer-service centre (CSC), aimed at standardising the service. While the standardisation provided benefits in terms of availability of the service, the former relationship-specific

knowledge enabling adapted service to the specific customers was lost, and the customers had to engage in what they considered costly adaptations processes to the new routine.

While Håkansson and Snehota's (1995) model represents the most recent network model within the IMP research tradition, parts of the model have been further elaborated upon. Recent IMP studies have in particular focused on the resource layer of the model. These studies have aimed at understanding resources and their role in industrial and technological development (e.g. Holmen 2001; Wedin 2001; Håkansson and Waluszewski 2002; Von Corswant 2003). As a result, a framework for how to understand interaction between resources has been developed. This resource framework and its basic assumptions have also implications for how routines are considered. As we shall see, this view complements the above discussion.

4.2.3 The resource interaction framework

The aim with the resource framework is to explain the role of resources in industrial and technological development. The framework describes the various resource elements involved in a network's total resource base and the relationships between them. It is the notion of resource heterogeneity that makes resources in particular interesting when it concerns development processes. Though the concept of resource heterogeneity is used in different ways within the industrial network approach,²⁶ Håkansson and Waluszewski (2002) note that it is mainly considered in terms of interactive effects. All resources are used in combinations, which extend beyond the boundaries of the single firm, and it is from these combinations that the resources get their features. As such, the notion of resources being heterogeneous, implies that their value is not given - it depends on how and with which other resources they are combined (Håkansson and Snehota 1995; Håkansson 1993; Håkansson and Waluszewski 2002). The main sources to the notion of resource heterogeneity within the industrial network approach are Penrose (1959) and Alchian and Demsetz (1972). Though these authors are primarily concerned with the single firm, their basic ideas about the heterogeneity of resources and "team effects" have been adopted in the industrial network approach and further extended with an interactive perspective.

²⁶ See Holmen (2001) for an extended discussion of different ways in which the concept of resource heterogeneity has been used within the industrial network approach.

In their study of technological development, Håkansson and Waluszewski (2002) identify four different resource elements: two physical resources - products and facilities - and two organisational resources - business units and business relationships. The organisational resources embed so-called soft elements, such as knowledge and learning. It is argued that by treating business units as a resource type, it is possible to investigate the role of such soft resources involved in interaction processes. The four resource elements are involved in and developed through interaction processes between industrial firms. Håkansson and Waluszewski (2002) stress that the four resource elements have at least two common features. Firstly, they are all highly interdependent, since the production of a product requires a production facility owned by a business unit, and in order to sell the product, a business relationship is needed. Secondly, all the four resource elements are preceded by individuals. Whether it is a physical or organisational resource, its features have to be interpreted, developed and preceded by individuals. This means that in order to get economic value, a resource has to be represented by an individual.

A business relationship consists of different resource interfaces between single resource elements. This can for example be an interface between a supplier's product and the customer's warehouse facility. The concept of resource interfaces is used to describe the connections between single resource elements, underpinned by an understanding of an interface as a place where different things meet and have an effect on each other (Wedin 2001). The notion of interfaces can be further related to that of embeddedness. According to Wedin (2001), two resources are embedded when there is some sort of dependence and adaptation between the two. The discussion about interfaces and embeddedness hence relates to whether the resources are used in a standard and generic way, or if they are adapted to a specific use in combination with other resource elements.

Håkansson and Waluszewski (2002) argue that technological development relates to the process where new resource interfaces are created through interaction. This process concerns either using or combining existing resources in new ways, or introducing new resource elements into the existing use and combination structure. Any resource element can be involved in several resource combinations across different firms simultaneously. The increased utilisation of resources in one specific combination in a relationship will thus affect their utilisation in combinations in other relationships (Håkansson and Waluszewski 2002). At the same time, different actors and business units can use a resource in either a standard or unique way. This depends on the dimensions of the resource being utilised (Håkansson and Johanson 1992).

Håkansson and Waluszewski (2002) acknowledge that it is important to include all of the four resource elements in order to understand a technological development process. In Figure 4.3, the interaction between a focal product and other resource elements is described in order to illustrate this process.

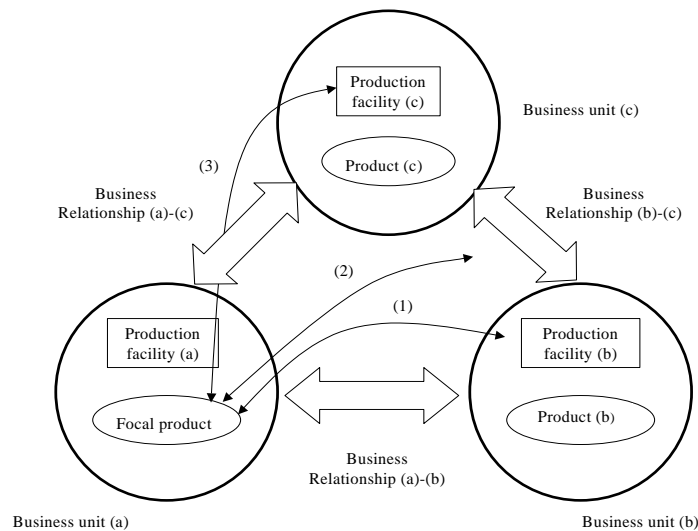


Figure 4.3 Resource interaction between a focal product and some business units, relationships, production facilities and products. Source: Håkansson and Waluszewski 2002, p.38

Routines and resource interaction

How are routines considered within the resource framework? Håkansson and Waluszewski (2002) argue that companies establish certain activity structures, where resources are used in a certain way. These structures of activated resources may become routinised. Routines represent as such methods in combining and activating resources. This is in line with the notions of routines in earlier works within the IMP research tradition. The basic assumptions of resource heterogeneity and embeddedness further reinforce the notion of routines from the discussions in earlier sections. Some resources are used in multiple activity chains. However, the use of a resource, in particular if it is specifically adapted to this use, affects its potential use in other activities and routines. Resource embeddedness has also implications for routines. Changes in routines and the way resources are

used and combined within them, will affect other resources and routines to which they are connected. As we shall see later, Håkansson and Waluszewski (2002) use the concept of friction to illustrate this point.

Holmen (2001) introduces the concept of *combination and use routines*, when investigating resource development. She differentiates this concept from the more generic term *activity*. While the concept of *activity* as used in other IMP research, (Dubois 1994) refers to a more general type of activity, the concept of combination and use routine refers to the more specific and qualitative way in which an activity is performed. Furthermore, this implies that one single activity can be composed of many combination- and use routines. Holmen (2001) uses this insight to investigate technical development, considered in terms of changes in combination and use of routines.

In a similar vein to Holmen, Harrison and Bygballe (2006) argue that resources are combined and used through routines. Routines connect organisational and physical resources both within and between companies. In their study of the introduction of new business unit resources, they show how changes in existing resource interfaces affect the routines that are embedded within them. They further relate this to implications for learning. Changes in routines between business partners, represented by changed business unit resource interfaces, will change the knowledge connection between the parties, and hence possibilities of learning.

In the above sections we have considered the role of routines in business relationships from an IMP perspective. With a few exceptions, the role of routines has not been studied extensively within this tradition. However, routines and routinisation are considered as one feature of business relationships, leading to institutionalisation. Routines are types of activities, in which resources are used and combined in specific ways. Routines become as such a method for using and activating resources. The way routines are developed is based on experience and learning. This notion will be further elaborated in the following section, which considers how learning has been treated within the IMP tradition.

4.3 Learning in business relationships and industrial networks

Learning and knowledge have been emphasised as central aspects of the interaction processes between firms in business relationships within the IMP research tradition and the industrial network approach. Ford et al (1986) note that interaction can be perceived as a learning process, and it is through

learning that business relationships arise (Håkansson and Johanson 2001). Each party in a relationship increases its knowledge and experience as the parties interact, not just from the interaction itself, but also from the characteristics and expectations of their counterparts. Through mutual learning the parties in a relationship are directed towards each other (Johanson and Mattson 1987), and the routines of the two parties are modified and become interdependent (Håkansson and Johanson 2001). One central aspect when considering learning in an interactive perspective is that this process also includes teaching (Håkansson et al. 2001; Håkansson and Waluszewski 2002). Companies are not free to decide what, from whom and when to learn. Rather, their ability to learn is influenced by other companies to which they relate. Hence, in the interface between companies, both learning and teaching take place.

In the following section, we shall look further at how learning has been treated within the IMP tradition. First various relationship characteristics that have been identified within this tradition are considered and related to learning. Next we shall see how learning has been related to the different relationship layers, focusing in particular on the resource layer, since learning and innovation have often been related to resource development.

Stages in relationship development and learning

Ford (1980) argues that a relationship goes through different stages. In a subsequent development of Ford's (1980) relationship development model, Ford, et al. (2003) identify four main stages: a pre-relationship stage, an exploration stage, a development stage, and finally, a mature stage. The various stages are described through four main relationship investment concepts: learning, adaptation, trust, commitment, and distance. Although not all relationships go through all these stages, Ford, et al. (2003) argue that there are many that go through some of the situations described in this model.

Learning is particularly important in the early stages of a relationship. In the exploration and development stages, the parties engage in a detailed learning process in order to get to know each other. This learning contributes to establishing actor bonds, resource ties, and activity links, which are necessary to reach stability at the mature level. The latter level is characterised by routinisation and utilisation of the established connections. While this may still involve some learning, it is reasonable to assume that this is not as explorative as in the beginning of the relationship. Nevertheless, as Ford, et al. (2003) notice, the parties may for various

reasons again engage in a development stage, involving extensive learning processes. As a result, it seems reasonable to argue that the different stages entail different learning processes, and that the early stages are characterised by intensive ones, while the latter ones are characterised by learning processes aimed at making the relationship stable and efficient. However, it may also be argued that learning is facilitated by a certain kind of stability, and that innovations may occur because the parties in a mature relationship may often know each other well.

Type of relationship and learning

As we saw in an earlier section, business relationships may differ in terms of how closely connected the three layers of substance are. Gadde and Snehota (2000) argue that the differences between high-and low involvement relationships are reflected by the existence of strong activity links, resource ties and actor bonds, comprised by processes of co-ordination, adaptation, and interaction. While low-involvement relationships require little of these three processes, high-involvement relationships imply a high degree of these processes. We may assume that learning is a key feature of high-involvement relationships. Such relationships are developed through the three processes of co-ordination, adaptation and interaction, which all are tightly linked to learning. Thus, it is likely that in those relationships where such connections exist, learning has occurred. It is also likely that learning will continue to occur in such relationships, as such connections are likely facilitate further learning (Bångens 1998; Bångens and Araujo 2002).

Araujo, et al. (1999) also use the concept of involvement in order to define the closeness of a business relationship. Involvement here refers to how companies access resources from their suppliers. Four different ways are identified, comprising interfaces between the parties. These interfaces comprise a continuum of how close the parties interact in order to fulfil the exchange of resources, ranging from standardised interfaces, translation interfaces, specified interfaces, and finally interactive interfaces. Learning exists on all levels, but to a varying degree and in different ways. The various interfaces can be described in terms of the productivity and innovativeness they provide. Innovativeness is here related to both direct and indirect learning. Direct learning is joint learning that takes place between the relationship partners, while indirect learning means that the customer benefits from the supplier's learning in other relationships. According to Araujo, et al. (1999), both types of learning are likely in an interactive interface, while in the other interfaces direct learning is unlikely. However, both in the standardised interfaces and the translation interfaces, indirect

learning benefits may be achieved, as the supplier may use its knowledge for several customers. In the specified interface, however, the possibilities for both direct and indirect learning are limited.

Based on the above discussion, it follows that learning is likely to be affected by the type of relationship and by which stage the relationship is in. In a study by Håkansson, et al. (1999), an additional dimension is suggested. These authors investigate how the characteristics of each of the involved parties, the relationship itself, and the relationship context affect learning. Relationship type is here described in terms of what kind of product or service is being exchanged, and the age of the relationship. This relates well to the two relationship characteristics that we have described above.

Håkansson, et al. (1999), expected that there would be less learning where products were standardised, as there were less needs for adaptations. When it concerns the age of the relationship, the authors argued that this might affect learning in two different ways: New relationships will provide new and/or different knowledge, and hence increased learning possibilities. However, in long-term relationships, trust may have developed, which is also a prerequisite for co-operation and learning. The result of the study showed that neither the characteristics of each party, nor the features of relationships were the most important ones for learning. Instead, what affected learning the most was the relationship context. This is defined in the study as the number of other connected relationships. According to this study, learning is enhanced by the involvement of various companies. This is explained by the variety that is provided to the development process by including more companies/suppliers than the focal customer and supplier ((Håkansson et al. 1999).

In summary, the above-mentioned studies show that learning in business relationships may be influenced by specific relationship characteristics. The studies show, although to a varying degree, that different stages in a relationship, degree of involvement, and the relationship context may all have implications for learning. In the following sections we will look closer at how learning has been considered in the IMP tradition, relating learning in particular to the resource layer of business relationships.

Learning and the different layers in the ARA model

As we saw earlier, learning has been related to the three layers of substance, actors, activities, and resources. Håkansson and Snehota (1995) note that knowledge and skills underpin all activities and resources used in a

company. Through past experience actors have differential knowledge about activities, resources and other actors in the network. In business relationships this knowledge is combined. The co-ordination and adaptation of the activities and resources involved in a business relationship entail a learning process. Learning is also highly involved in the establishment of actor bonds and in shaping relationship identities. Learning underpins as such all three processes of linking activities, tying resources and establishing bonds between actors in business relationships and networks. Hence, the existing structure of connected activities, actors, and resources reflects the experiences of the parties' problem solving and experimentation in finding solutions, their learning and knowledge (Håkansson and Snehota 1995). While being a result of learning, actor bonds, resource ties and activity links are also a pre-requisite for learning (Bångens 1998).

Learning related to the resource layer

Learning is an important aspect of both connecting activities and actors. However, within the industrial network approach, learning has most of all been related to the resource layer of the network model (see for example Snehota 1990; Håkansson 1993; Håkansson and Snehota 1995; Wedin 2001; Holmen 2001; Harrison and Bygballe 2006). As we saw earlier, a central topic within the industrial network approach is technological development and the role of resources in this process. Håkansson and Waluszewski (2002) argue that learning is a critical issue when considering technological development from an interactive perspective. Håkansson (1987) argues in a similar vein, that the technical development process, constituted by investments in real capital, day-to-day rationalisations or product development, may be considered as a learning or evolutionary process. Hence, resource use and development are highly related to learning.

If we look closer at the two central features of resources - heterogeneity and embeddedness, we see that these have important implications for learning. Because resources are heterogeneous, they gain value through their combination with other resources. However, since the number of combinations in which a resource can be used is infinite, their potential use can never be fully known. There are always things to learn about a resource and new combinations to experiment with (Håkansson 1993). Results from a resource combination are impossible to know in advance and have to be learned. When heterogeneous resources are combined, the performance of this specific combination increases due to experiential learning and

adaptation.²⁷ The combination further enables new knowledge to develop, creating possibilities for new and improved resource combinations. Such new knowledge often implies that activity cycles are changed or replaced. Hence it provides the possibility for development and changes. According to Araujo, et al. (1999) the productivity of firms is determined by the efficiency in the utilisation of a given resource combination at any one time, whereas innovativeness is related to the development of new resource combinations over time.

Håkansson (1993) argues that learning with respect to the use and combination of resources, concerns learning about the specific resource elements involved and how to combine them. Such learning can be accomplished in three different ways: (1) through the direct experimentation of a single actor, (2) through the use of the other companies' knowledge and experiences, and (3) through joint learning based on several actors' knowledge and experimentation. Collective learning is facilitated as relationships and networks make more resources and knowledge available. Through combining the knowledge bases of the involved parties, the possibilities for creating new knowledge increase.

When heterogeneous resources are combined, the increased performance of this specific combination relies on the dependence and adaptation of the involved resources. This implies that the resources get embedded in each other (Wedin 2001) and that the specific combination becomes routinised (Holmen 2001; Harrison and Bygballe 2006). Because of embeddedness changes in a particular resource or resource combination both affect and are affected by other resources. Investments, i.e. adaptations developed through past learning, result in resources becoming *cemented* into each other creating a certain resource structure (or as we saw earlier what Holmen 2001 terms a combination and use routine). The greater the investments and the importance of one resource in relation to the other, the *heavier* the resource interface is. Such a structure may put constraints on attempts to make changes. Håkansson and Waluszewski (2002) relate this to the concept of *path dependence*, which implies that "solutions that are historically built into an industrial structure inhibit the development of new paths that break with the existing structure" (*ibid*:139). Companies are not free to learn and change whatever they like, because the results of this learning may not fit into the existing structure. While path dependence may hinder learning and development of resources, Håkansson and Waluszewski (2002) notice that it

²⁷ A similar point is made by Penrose (1959), who argues that the utilisation of a resource, that is to say, the services rendered from a resource, increases with learning and knowledge.

may also enhance the development of resources. This happens as different paths are crossed and combined in new ways.

Furthermore, Håkansson and Waluszewski (2002) note that some times resources seem easy to change, while at other times changing them is apparently impossible. This fact is central in order to understand development processes. To explain how the embedded nature of resources affects their possibilities for change, Håkansson and Waluszewski use the concept of *friction*. On one hand, friction is a stabilising force, which makes it difficult to change resources because of past learning and embeddedness. Friction will always lead a change towards compatibility with existing solutions. On the other hand, friction will also produce change. Through friction, any force directed towards an embedded resource, will be distributed to other resource elements to which the focal resource has interfaces. Friction, then, creates tensions in related resource interfaces and reveals possibilities for change. In this way friction has both a stabilising and a de-stabilising effect.

The fact that friction directs development processes towards the utilisation of existing structures and earlier investments means that the learning process will also be directed. This is in line with the assumption that new knowledge is often built on existing knowledge.²⁸ Additionally, the distributing force of friction implies that learning about resources in terms of creating new interfaces will be distributed to other resources in the resource structure. As such learning may have some effects that reach beyond the initial object of change and may force learning and changes in other resource interfaces as well. Hence learning may not always be planned and its effects accounted for. As Håkansson and Waluszewski (2002) remark, this means that it is highly important for firms to engage in joint learning and teaching processes, in order to illuminate the effects of an initial change for all parties.

The appearance of these processes is illuminated in Harrison and Bygballe's (2006) study of the impact of the introduction of a new business unit. The supplier company in this study introduced an industrial call centre to handle all customer orders and requests for advice, without preparing its customers. Thus a change in the inter-organisational routine disrupted the existing resource structure. The change involved a new resource being used in a new way, and the customers were not prepared for the change. While the supplier company's aim was to improve customer satisfaction and standardisation,

²⁸ New knowledge is created in the interface between existing bodies of knowledge. Hence, knowledge facilitates the generation of new knowledge (Powell 1998; Cohen and Levinthal 1990)

some customers felt that the change had brought about a loss, as important relationship knowledge embedded in the existing routine was removed. As a result, there were several situations where the customers refused to comply with the new routine. This study illustrates what Håkansson and Waluszewski (2002) mean by the distributed nature of changes in resources and the importance of illuminating possible effects of changes for all parties involved.

We have in these last sections seen how learning has been approached within the IMP tradition. Learning is here related to the processes in which actors interact, activities are co-ordinated, and resources are combined and adapted. The resource dimension of business relationships is particularly interesting when it concerns learning, as the combination of resources provide efficiency and innovativeness. As we saw, the notions of resource heterogeneity and embeddedness have some interesting implications for learning, in particular in terms of implications of learning.

4.4 Summary

So far in this chapter, we have looked at the role of routines and learning in business relationships, based on an investigation of what are considered as typical contributions within the IMP tradition. Routines are one feature of business relationships, resulting in institutionalisation of a relationship. The concept of connectedness is in particular interesting when it concerns the notion of routines. It implies that routines are inter-connected both within and across firm boundaries.

Learning is also considered a central feature of the interaction processes in business relationships. Learning can be related to various relationship characteristics, including stage of relationship development, type of relationship, and relationship context. In addition, learning has been related to the three layers in business relationship. Although learning is involved in the development of actor bonds and activity links, it has in particular been related to the resource layer of business relationships. Learning is considered important in order to develop resources, and the inherent characteristics of resources, in terms of heterogeneity and embeddedness, have important implications for how to think about learning in business relationships.

4.5 The role of routines in organisational learning

In the introductory chapter of this thesis, it was argued that in order to understand learning across firm boundaries, an adaptive perspective of organisational learning could be useful. Within this perspective, routines are considered to play an important role in the learning process, both as a result and as a further vehicle. In the following sections this perspective will be further elaborated. As we shall see this perspective has primarily focused on learning within organisations. However, in recent studies, it has also been applied to learning in inter-organisational settings.

4.5.1 An adaptive perspective of organisational learning

The connection between organisational learning and organisational routines was recognised already in March and Simon (1958). They describe how organisations learn and develop performance programs, constituted by routinised responses to certain stimuli. Cyert and March (1963) emphasise in a similar vein the connection between organisational learning and routinisation of organisational decision-making processes. These authors state that organisations learn as they seek to adapt to changes in the environment. Firms are hence adaptive institutions, and they learn by experience. According to Cyert and March (1963) the long-term adaptive processes in which organisations learn, result in standard operating procedures. Although these procedures create a certain degree of stability, similar to all learned behaviour, they change over time.

Cyert and March's (1963) early notion of organisational learning with its emphasis on adaptation and routinisation has been influential on organisational learning theory. The perspective that has developed based on the behavioural theory of the firm is often referred to as the adaptive perspective on organisational learning (Huysman 1996). Later contributions have been concerned with further refinement of the connection between organisational learning and standard operating procedures and organisational routines.

Levitt and March (1988) build on Cyert and March's (1963) ideas and are central contributors to our understanding of the role routines play in organisational learning. They argue that "organizations are seen as learning by encoding inferences from history into routines that guide behavior" (Levitt and March 1988:319). The term routine is used in a generic way to

include the forms, rules, procedures, convention, strategies, and technologies around which organisations are constructed and through which organisations operate. It also includes the structure of beliefs, frameworks, paradigms, codes, cultures, and knowledge that buttress, elaborate, and contradict the formal routines (Levitt and March 1988:320). Learning is related to both the establishment of and changes to routines. The process encompasses both direct and indirect experience. Learning through direct experience involves two processes: The first concerns trial-error procedures, where routines associated with success are more likely to endure than those that are not. The second involves organisational search, which means that an organisation draws from a pool of alternative routines, adopting better ones as these are discovered. The acknowledgement that routines also change through indirect experience means that organisations learn from other organisations through imitation. As Levitt and March (1988) note, organisations operate in an environment of other learning organisations.

Levitt and March (1988) argue that changes depend on interpretations of history, particularly on the evaluation of outcomes in terms of targets. By focusing on learning as history dependent, an evolutionary perspective is applied. Rather than viewing learning as adaptation to stimuli in the external environment only, learning is also seen as framed within existing routines and past learning. Routines are based on interpretations of the past more than on anticipations of the future, and companies adapt to experience incrementally in response to feedback on actions. The fact that existing routines and learning seem to be reinforced by further learning has an important implication. Learning takes place, but it may not be positive or appropriate. On the contrary, learning may contribute to reinforce inappropriate routines, leading to so-called competence traps (Levitt and March 1988; March and Levinthal 1991).

Levitt and March's (1988) definition of organisational routines has contributed to one of the most central debates within the organisational learning literature – what makes knowledge organisational, or more precisely, what differentiates organisational learning from individual learning?²⁹ A common way of describing organisational learning is that learning and knowledge become organisational to the extent that knowledge is developed and shared by members of the organisation. Several authors, including Levitt and March (1988) have identified organisational routines as central containers of knowledge. Though this notion has been criticised for not including the social and distributed dimensions of learning (see for

²⁹ See Kim (1993) for an extended discussion about the differences between individual and organisational learning.

example Araujo 1998), recent studies of routines apparently meet this criticism (e.g. Feldman 2000; Feldman and Pentland 2003).

4.5.2 Learning as changes in routines

Following from the above discussion, learning and knowledge are seen as being maintained and accumulated within routines (Levitt and March 1988). Much of what has been written about changes in routines, associates changes with the origins of routines, and states that after a while equilibrium is established (Feldman 2000). Some have attributed this to the procedural feature of organisational routines (Cohen and Bacdayan 1996), while others have emphasised that because routines are embedded in existing technologies, they are difficult to alter (Edmondson et al. 2001). Changes in routines are however, observed. In evolutionary theories, changes are seen as results from evolutionary processes, through variation, selection and retention (Cyert and March, 1963, Nelson and Winter, 1982), or mismatches between current routines and environmental conditions and aspiration levels (Levitt and March, 1988). Often exogenous sources to variation and change have been emphasised in this perspective (Huysman 1996).

Recent studies have recognised the dynamic dimension of routines, and that variety and change are intrinsic features of organisational routines (Pentland and Reuter 1994; Feldman 2000; Narduzzo et al. 2000; Feldman and Rafaeli 2002; Tsoukas and Chia 2002; Lillrank 2003; Feldman and Pentland 2003; Feldman 2003). As Feldman (2000) remarks, it is a question of how routines are viewed. If they are studied on a macro level, they seem rather stable and static. However, if micro studies are conducted, we will find that routines continuously alter through smaller or larger incremental changes.

In these studies it is emphasised that routines are not mindless behaviour, but involve complex patterns of interpretation and learning. For example, Pentland and Reuter (1994) describe routines as ongoing and effortful accomplishments. Routines are seen as grammar guiding organisational behaviour, and just as grammars allow for producing a variety of sentences, routines allow for producing a variety of performances. Routinised behaviour is on one hand constrained and enabled by the cognitive structures of individuals, and on the other hand the physical and social structures of the organisation. Hence, stability exists. However, at the same time individual effort and agency are important features of these routinised patterns. Narduzzo et al. (2000) found in their study of a newly formed cellular phone company that a pure behavioural view of routines was insufficient to explain what actually happened in the field

since it is a complex interplay between interpretive activity and the resulting behaviour.

A performative perspective of organisational routines

Feldman (2000) attributes the dynamic aspect of organisational routines to the role of agency in performing routines, and the way these learn by reflecting on previous iterations of a routine. She offers as such a performative model of routines, emphasising the interaction between plans, actions, outcomes, and ideals to explain how they change. The model seeks to explain the interplay between understanding and performance, and how people enact the routine whilst performing it. Organisational routines involve the performance of many people, reflecting upon their actions. Organisational routines, therefore, may result in new routines being adopted or existing routines being changed. Routines change for several reasons. Sometimes the actions do not produce the intended outcomes, or they produce outcomes that result in new problems having to be solved. Actions may also produce outcomes that result in new resources, and hence new opportunities. The produced outcomes may also be as expected, but the participants aim for further improvements. With this model, Feldman extends Pentland and Reuter's (1994) notion of routines as effortful accomplishments, by adding that routines are effortful and *emergent* accomplishments. Feldman (2000) argues that this emergent accomplishment is a learning process, involving double-loop learning.³⁰ She further relates this learning process to Nonaka and Takeuchi's (1995) model of knowledge creation.³¹ However, while Nonaka and Takeuchi assumes that the process of learning takes place across levels of hierarchy, Feldman sees it across organisational routines.

In a similar vein, and building on Feldman's (2000) performative model of organisational routines, Feldman and Pentland (2003) offer a new ontology to the study of organisational routines. In order to understand organisational routines and how these change, the interactions between structure and agency must be understood. Feldman and Pentland also apply Latour's (1986) terms *ostensive* and *performative* to capture the notion of the duality between structure and agency in organisational routines. The ostensive

³⁰ See Argyris & Schön (1996) for an extended discussion about single and double loop learning.

³¹ Nonaka and Takeuchi (1995) argue that knowledge creation takes place through four interrelated and continuous processes: socialisation, articulation, combination, and internalisation.

aspect of a routine refers to the abstract, generalised idea of the routine - the routine in principle. The performative aspect of a routine refers to the specific actions, by specific individuals, that constitute the routine - the routine in practice. Hence, the performative aspect refers to the enactment. Feldman and Pentland (2003) further relate the distinction between these two aspects to the distinction between “knowing that” and “knowing how”, using Ryle’s (1949) terms.

Acknowledging both the ostensive and the performative aspects of organisational routines provides an understanding of how routines change endogenously. Because of the performative aspect, variation will always occur as people enact the routine. However, at the same time the ostensive aspect of the routine will frame these variations. One main implication of the understanding of this duality is a need to reconsider the traditional evolutionary perspective of routines. According to Feldman and Pentland (2003), the supposed stability of routines is a main reason why routines play such an important role in this theory. In evolutionary theory, routines are treated as genealogical mechanisms, enabling organisations to be reproduced. As such their nature as fixed structures is emphasised, which results in inertia, inflexibility and mindlessness. However, if we acknowledge routines’ inherent capacity for change, it means that routines are not pure reproducing mechanisms, and that sources of variations are endogenous to the performance of the routine.

4.5.3 Routines as triggers of learning

As we have seen, Feldman and her colleagues have found that routines possess an inherent capability to generate change by being performed. Other researchers have also recognised that routines are important sources of flexibility and learning. These emphasise the routinised efforts of companies in deliberately evoking change and innovation. Routines that are directed towards changing other routines have been termed search and high-level routines (Nelson and Winter 1982), higher order routines (Nelson 1991), meta-routines (Adler et al. 1999), and dynamic capabilities (Eisenhardt and Martin 2000; Teece et al. 2000; Zollo and Winter 2002).

A central concept in Nelson and Winter’s (1982) understanding of change is search. Through search, companies aim at modifying their existing routines or finding new ones, which is a valuable source of variety. These searches may become routinised themselves. Nelson and Winter (1982) talk about two different kinds of routines. Firstly, there are operational routines co-ordinating

what the firm does in handling regular operational and administrative tasks. Secondly, there are routines that aim at modifying these operational routines, labelled search or high-level routines. The search routines are important in order to understand innovation, as innovation means changes in routines (Nelson and Winter 1982). When problems arise in existing routines, routinised problem-solving activities are triggered. The result of these problem-solving processes may lead to major changes and innovation. Referring to Schumpeter's notion of innovation as the "carrying out of new combinations", Nelson and Winter (1982) emphasise that innovation often means the recombination of existing resources, both conceptual and physical. "An innovation may involve nothing more than the establishment of new patterns of information or material flows in existing sub-routines"(Nelson and Winter 1982: 130). In fact, Nelson and Winter argue that reliable routines of well-understood scope provide the best components for new combinations and innovation. Following from this understanding, routines can be viewed as both a result of innovation, and as a further contributor to innovation.

In a similar vein, Nelson (1991) argue that there are different levels of routines referred to as the hierarchy of routines. While lower order routines are necessary to accomplish certain tasks, higher order routines are necessary to invoke them in the particular combination needed to carry out the task. Together these routines define what the organisation is capable of doing, and hence comprise its core capabilities. Following the notion of capabilities, Zollo and Winter (2002) describe higher order routines as constituting a firm's dynamic capabilities. These are defined as "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operational routines in pursuit of improved effectiveness" (Zollo and Winter 2002:340).³² As such dynamic capabilities describe the relatively stable activity through which a firm modifies its operational routines, as well as the relatively predictable and stable way of handling specific projects, developed through past experience. Zollo and Winter (2002) argue that both operational routines and dynamic capabilities are a result of learning. Routines evolve and change in a cyclical learning process triggered by either external stimuli or internally due to problems faced in the performance of existing routines. We see that the latter compares to Nelson and Winter's (1982) idea of the connection between existing routines and innovation. These variations are further object to selection, replication, and retention mechanisms. This cyclical learning process proceeds

³² The concept of *dynamic capabilities* is derived from extended versions of the resource based view (Grant 1996; Eisenhardt and Martin 2000; Teece et al. 2000). Within these notions capabilities refer to an organisation's ability to develop, integrate and combine resources, in particular knowledge. Organisational routines are proposed as important means in this respect.

from an exploration phase aimed at generating and evaluating new ideas (variation and selection) to an exploitive phase, where the new ideas are replicated in diverse contexts and absorbed into existing routines (replication and retention), returning to a new exploration phase.

As we have seen, Levitt and March (1988) claim that learning is encoded in routines, that is to say, experiential learning by individuals on behalf of an organisation is maintained *and* accumulated within routines. Although emphasis is put on knowledge accumulation and learning by doing when considering changes in routines and innovation, other learning processes are also involved. Nelson (2003), for example, refers to “off-line” learning as being an important aspect. Contrary to “on-line” learning, which means learning that takes place through experimentation and tinkering during performance, this type of learning often refers to what is going on in R&D departments, or other places outside the immediate task performance setting. One type of off-line learning can, for example, be the appliance of high-level routines. Nelson states that while many of the problems and opportunities are recognised on-line, much of the solving is done off-line. Thus changes in routines and innovation may involve several types of learning processes, ranging from hands on experience when the routines are performed, to more deliberate aims of developing knowledge outside actual practice, through the means of among others high-level routines.

4.5.4 Different modes of learning and changes in routines

The connection between routines and organisational learning also relates to the recognition that learning may lead to both incremental and transformational changes (Easterby-Smith et al. 2000). While the former learning is related to the refinement of existing routines, the latter is related to the establishment of new ones. Various labels have been used to describe these different modes or types of learning. Fiol and Lyles (1985) use the terms lower-level and higher-level learning to describe the degree of cognitive development involved in the learning process. While the former type involves behavioural adaptation, the latter relates to what Fiol and Lyles term learning. Similarly, Argyris and Schon (1978) talk about single-loop learning and double-loop learning. The former refers to an organisation’s improvements of its performance in achieving existing goals and objectives over time. It is instrumental and takes place within existing routines. Based on error detection, strategies of action or assumptions underlying these are changed as to keep performance within the range set by existing values and norms. The values and norms themselves remain, however, the same, maintaining some stability.

The second type of learning as identified by Argyris and Schön (1978), is double-loop learning. This refers to situations where detection of error leads to changes in the underlying values and norms, as well as in existing policies and objectives. The strategies and assumptions change simultaneously with, or as a consequence of, these changes. Argyris and Schon (1978) also recognise a third type of learning, deuterio-learning. This learning refers to situations where an organisation enhances its capability for learning through the two former types. This is often referred to as “learning how to learn” and implies that the existing system of learning is changed. Given these typologies, it is recognised that organisational learning leads both to stability and change.

March (1991) uses the terms *exploitation* and *exploration* to refer to the distinction between incremental and radical learning. He argues that organisations have to divide their attention and resources between these two activities. Hence, exploitation and exploration compete for scarce resources. When it concerns exploitation, this involves learning that refines and extends existing competences, technologies, and paradigms, and hence creates reliability. It includes refinement, choice, production, efficiency, selection, implementation, and execution. Exploration on the other hand involves learning and experimentation with new alternatives, and is associated with search, variations, risk taking, experimentation, play, flexibility, discovery, and innovation. It creates as such a variety of experiences. March (1991) notices that organisations have to maintain a balance between these two processes in order to survive and prosper. An organisation that only engages in explorations will end up paying the costs without benefiting from the experimentation. If, however, the organisation engages in exploitation only, it will stagnate and run the risk of being left with sub-optimal solutions.

As noted, incremental and radical learning, or in the words of March (1991), exploitation or exploration are often associated with changes in existing routines or establishment of new routines. Routines have traditionally been described as being stable and static, resulting in organisational inertia. This is one reason to the emphasis on “learning how to learn” and double-loop and explorative learning within the current organisational learning literature. The dangers of being locked-in by inappropriate routines, or by so called competency traps, have been thoroughly discussed (see for example Levitt and March 1988; Levinthal and March 1993). While routinisation may enhance competitive advantage, as it allows for reliability, it may also inhibit competitiveness. Exploration is needed to establish pre-eminence. As Levinthal and March (1993) note, although a balance should be kept between exploitation and exploration, exploitative behaviour is more common than explorative behaviour. Organisations tend to employ exploitative behaviour as this

generates clear and immediate feedback. However, organisations need to allocate proper resources also to exploration. Levinthal and March (1993) suggest different solutions to the problem of sustaining exploration, relating to incentives, organisational structure, individual beliefs, and selection processes.

It has been argued that the distinction between these different modes or types of learning is blurred, and that in practice there is no real difference between single-loop and double-loop learning (Huber 1991). As Easterby-Smith, et al. (2000) remark, what appears as an incremental change at one level of analysis, for example the individual, may be considered as a transformational change at another level, for example at the organisational. It is also time dependent, that is to say, what is considered an incremental change at one point in time, may in the long run be considered as a transformational change. Contributing to this discussion, Huysman (1996) suggests that we should instead talk about a continuum, where learning should be considered as a many-sided phenomenon. The various modes of learning are here considered as continuous and as being positioned along a continuum, ranging from learning, which reinforces things already known, to learning new things.

In these last sections, we have looked at the role of routines in organisational learning. The focus has been on what happens within the single firm, and how a firm through various learning processes develops and changes its organisational routines. However, the role of routines has also been recognised in research on learning between organisations. In the next section, we shall look at how routines have been approached in this literature.

4.5.5 Inter-organisational learning and routines

As we saw in the introductory chapter of this thesis, learning in inter-organisational settings have primarily been studied in formalised learning collaborations between relatively autonomous partners. In this research, some attention has been given to routines that are purposefully established to facilitate learning between companies. This is in line with the inter-organisational learning literature, which focuses on conditions of learning. Such routines have been termed knowledge-sharing and learning routines (Dyer and Singh 1998; Dyer and Nobeoka 2000). However, in some recent studies of inter-organisational learning, routines have been related to the result of learning rather than as a learning facilitator. Inter-organisational learning is here considered as the process in which mutual knowledge represented by inter-organisational routines and rules are produced and changed (Zollo et al. 2002; Larsson et al. 1998; Holmqvist 1999, 2003,

2004) . The knowledge generated, is shared among the parties through these routines. In the following section, we shall take a closer look at this connection between learning and routines in inter-organisational settings.

Holmqvist (1999) notices that the process in which inter-organisational learning actually occurs, is unspecified in the literature. He, therefore, offers a way of understanding such learning. In one study Holmqvist (1999) uses and extends Nonaka and Takeuchi's (1995) knowledge creation model to explain inter-organisational learning processes. The model is based on the idea that creating inter-organisational knowledge, represented by joint routines and rules, involves converting both individual knowledge of the members in a relationship into inter-organisational knowledge, as well as converting organisational-specific knowledge of the involved parties into inter-organisational knowledge. Interaction between tacit and explicit knowledge, on both an individual and organisational level, underpins the inter-organisational knowledge-creating process, resulting in inter-organisational routines and rules (Holmqvist 1999).

Holmqvist (2004) has elaborated further on this idea, developing a conceptual framework for how to understand the interrelatedness between intra-organisational and inter-organisational learning (See Figure 4.4). According to Holmqvist (2004), learning both within and between organisations can be defined in terms of experiential learning processes, leading to the production and re-production of rules. Two main learning processes are identified. Firstly, dissatisfaction with exploitative behaviour triggers an *opening-up* process, which involves a more explorative process of experimenting and trials, creating variety in experience. If the exploration does not provide any returns, *focusing* will be needed, meaning that routinisation is generated from processes of experimenting and trials.

The connection between intra-organisational and inter-organisational learning is also described through two *translation* processes. The first one relates to how intra-organisational learning generates inter-organisational learning, which further involves two processes of *extension*. The first of these processes relates to how the experiences of one party in a business relationship, are extended to the other party, thus exploiting each other's experiences. As we remember from the introductory chapter, this is the process that has been most emphasised in the literature. However, the other process implies that the parties extend their experiences to engage in collective explorative learning. Thus it is not only a matter of exploiting the other party's knowledge, but also of producing new experiences. The other main translation process refers to how inter-organisational learning generates intra-organisational learning, called *internalisation*. This means that an

organisation has to internalise the experiences that has developed inter-organisationally. Based on these arguments, Holmqvist (2004) develops a model of how intra-and inter-organisational routines and rules are developed and changed, which includes four main processes: *Opening-up extension*, *focusing internalisation*, *opening-up internalisation*, and *focusing extension*. The model is illustrated in the following figure.

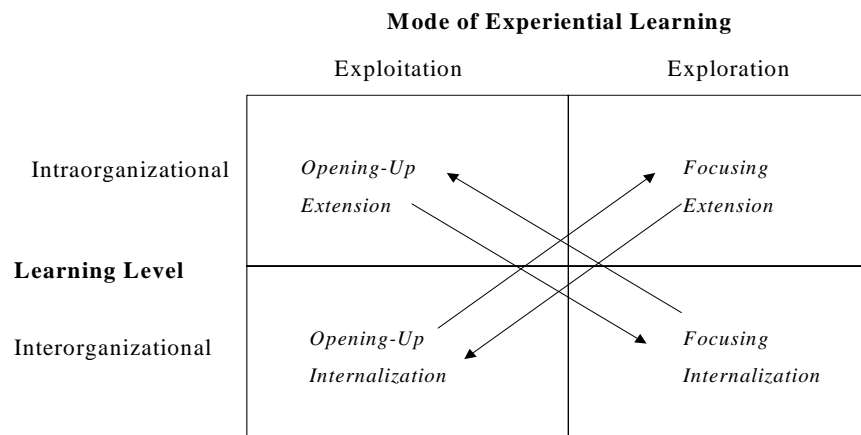


Figure 4.4 A Model of Organizational Learning. Source: Holmqvist 2004, p.73

In this section, we have seen how routines have been related to learning in the inter-organisational learning literature. The primary focus has been on deliberately established routines aimed at fostering learning in formal collaborations between autonomous partners. This follows from the traditional emphasis on conditions for inter-organisational learning. An exception is Holmqvist (1999, 2003, 2004). In line with the traditional literature, he focuses on formal co-operations. However, based on an adaptive and experiential perspective of learning, he has developed a framework for understanding inter-organisational learning processes, resulting in the development of intra- and inter-organisational rules and routines.

4.5.6 Summary

The behavioural theory of the firm and evolutionary perspectives have influenced the contemporary understanding of organisational learning, resulting in an adaptive perspective of learning. Levitt and March's (1988) argument that organisational learning is encoded into routines is derived

from these traditions. Their definition often serves as a key reference when talking about learning in organisational settings. Recent studies have focused on refining the concept of organisational routines, embracing its dynamic nature (e.g. Feldman 2000). Learning is here seen as intrinsic in the performance of routines, resulting in continuous modification and change. This extends the view of what triggers learning and embraces both external and internal sources to variety.

Some studies have focused on how certain routines work as triggers of change and learning. Distinctions have been made between high-level and low-level routines. This is also related to the recognition that learning takes place both “on-line”, that is to say in the execution of the routine itself, as well as “off-line”, i.e. outside the immediate performance of the routine. As concerns the learning process leading to the changes in routines, many have distinguished between the modes of change. March’s (1991) terms exploitation and exploration have been used to describe learning that involves improvement of existing routines and creation of new routines respectively.

The adaptive perspective of learning has primarily focused on intra-organisational processes. However, Holmqvist (1999, 2003, 2004) uses insights from this perspective to investigate learning between firms as well. He focuses on experiential learning, and argues that intra-organisational and inter-organisational learning are tightly coupled. According to Holmqvist (2004), learning in organisational settings involves translation between the two levels of learning. These learning processes involve both exploitative and explorative learning, where dissatisfaction with exploitive behaviour may trigger explorative learning and vice versa.

4.6 Relating the two theoretical traditions and the concepts

In the introductory chapter, it was suggested that learning in ongoing exchange relationships could be investigated by linking the three concepts of learning, business relationships, and routines. The following overall theoretical research question was presented: How may routines be used as a link between learning and business relationships in order to investigate and understand learning across firm boundaries? The question was as such how to go about in the triangle of concepts. In this chapter we have looked at two theoretical perspectives, the IMP research tradition and the adaptive perspective of organisational learning. The aim was to develop an understanding of the connection between the three concepts, and how

possibilities routines could be used as a link between business relationships and learning, based on this review.

As we have seen, the two perspectives include some notions of how learning and business relationships relate to each other, in addition to assumptions about routines. In the following section we shall recap how these concepts are approached within them and how these respective applications relate to each other. In other words: How are the three concepts of learning, business relationships, and routines used, and what are the similarities and differences? Furthermore, the possibilities of linking the notions from these two traditions are discussed, and a theoretical framework for how to investigate and understand learning in business relationships is proposed.

Business relationships

As to the concept of business relationships, we see that the two perspectives have quite different approaches to this concept. The IMP tradition focuses on exchange relationships between customers and suppliers in industrial settings. The main purpose of these relationships is technical, economic, and social exchange (Håkansson 1982). It is argued that no company is self-contained with the resources it needs, and hence companies establish relationships with other companies, which can provide the resources required. Relationships are as such resources in themselves as they facilitate access to a broader variety of resources. Such relationships have been characterised and described in various ways. For example, such relationships are often described in terms of the connections between the actor bonds, activity links, and resource ties in the relationship. Connections in these layers are necessary in order to co-ordinate the exchange flows and create interdependencies between the parties. But the connections of the layers are different in various relationships, illustrating whether there are high or low involvement relationships. A central feature of business relationships is, therefore, connectedness. This also relates to the assumption that relationships are connected to other relationships.

In the organisational learning literature, including the adaptive perspective, research on inter-organisational settings has traditionally looked at other types of relationships than the industrial exchange relationships considered in the IMP tradition. With a few exceptions, the focus is on formal collaborations, such as strategic alliances between firms. These relationships are often set up with an explicit learning objective, for example new product development. Though this literature is primarily based on the dyadic

relationships, some have studied so-called learning networks, where multiple firms are involved in the learning process (Powell 1998).

As we see, the two perspectives focus their attention on quite different types of relationships. It seems reasonable to say that on-going customer-supplier relationships have been neglected in the organisational learning literature. A key reason for this is that learning is viewed as something, which increases performance and competitiveness. As such, deliberate and planned learning is studied to provide knowledge about how such learning can be facilitated and how to overcome impediments to such learning.

Routines

In the IMP literature, routines are seen as co-ordinating the activities and resources in a business relationship. Routinised activity patterns are established around a certain resource structure to co-ordinate the resources and to provide stability and efficiency in the exchange process in the relationship. One important issue when it concerns resources is that they can be shared among various activities both within and across firm boundaries (Håkansson and Johanson 1992). Similarly, various routines make use of specific resources, and the same resource may be involved in various routines. Hence changes in a routine, leaving imprints in resources, may transmit themselves to other routines. As such, changes in one routine in terms of adaptations of the resource, may impact on the other routines that use the same resource. This may concern both different routines within a relationship and different routines in different relationships. As we shall see below, this has some important implications for learning. In the IMP literature, much emphasis has been put on what is specific in a relationship and adaptations made. This may be one explanation to why routines have not been given much attention per se but instead considered as an *infrastructural* aspect of business relationships.

In the adaptive perspective of organisational learning organisational knowledge and (Levitt and March 1988) co-ordinate individuals and their knowledge, and provide stability and efficiency in organisational performance. As such both the two theoretical perspectives view routines as a result of a learning process. However, while with an IMP approach the focus will be put on how routines are embedded in physical resources, the adaptive perspective of organisational learning focuses more on how routines co-ordinate soft resources, such as knowledge.

Learning

Based on the literature review, it seems reasonable to argue that the two perspectives have some common views of learning, but that there are some important differences as well. With some exceptions, (see for example Håkansson 1993; Araujo 1998; Bångens 1998; Håkansson et al. 1999; Håkansson and Johanson 2001; Knight 2002; Harrison and Bygballe 2006), researchers within the IMP tradition have not been explicitly occupied with the learning issue. Nevertheless, learning is seen as an important aspect of the interaction processes between firms. Similar to the adaptive perspective of organisational learning, the IMP tradition is also based on behavioural and evolutionary perspectives of organisations. Hence, learning is here considered as an experiential-based adaptive process. The IMP tradition focuses in particular on learning as adaptation in resources in relationships and networks. The IMP tradition recognises that learning and adaptations are also involved in creating actor bonds and activities links. However, learning has been in particular related to resource development. Learning is embodied in resources, which are deployed in routines. Although learning relates to the way relationship partners make the relationship and the resources involved more specific through adaptations, the industrial network approach focuses in particular on the effects of this learning on other relationships and the network. It is the transfer, i.e. how learning is affecting and being affected by others outside the focal relationship, that is particularly illuminated in an IMP tradition.

In the adaptive perspective of organisational learning, learning is related to adaptation of behaviour and knowledge based on experiences. Nelson and Winter (1982) recognise that physical resources are also co-ordinated and involved in the learning process. However, the main focus is on routines. The adaptive perspective is based on the behavioural theory of the firm and an evolutionary perspective. The latter means that adaptations in routines are seen as framed within past learning. In other words, past learning and experiences guide future learning, and hence influence what is learned. This implies that though learning takes place, it is not always appropriate. Both external and internal sources of variation are suggested to trigger the learning process. Organisations learn and adapt, based on feedback of their actions from the environment. Internal triggers are however also important. Organisations judge their performance based on perceived success and failure, and tend to change their behaviour if the performance is below aspiration levels. These judgement and change processes may themselves be routinised, in the form of high-level routines, recognising that learning may take place both on-line and off-line. The learning process has been described in terms of being an exploitative or explorative type of learning.

This notion of learning has also influenced recent studies on inter-organisational learning. For example Holmqvist (2004) proposes a framework for understanding inter-organisational learning, based on the assumption that inter-organisational and intra-organisational processes are tightly coupled. The same is evident for exploitative and explorative learning behaviour. Triggers to learning can be initiated by one of the parties in a relationship, as well as from joint efforts in the relationship itself. Changes in rules and routines often stem from dissatisfaction with the existing performance of the routines, and are thus experiential learning processes. Although Holmqvist (2004) differs from the traditional inter-organisational learning literature in the sense that he studies the processes involved, he still looks at formal collaborations between firms. This differs from the IMP approach to learning, where learning is seen as an inherent part of the interaction processes between parties in business relationships.

In summary we may say that the main differences between the two perspectives are as follows: First of all the use of the adaptive perspective of learning in inter-organisational settings still looks at formal collaborations between firms (e.g. Holmqvist 2004), while the IMP perspective looks at ongoing exchange relationships. Furthermore, in the adaptive perspective, learning is considered in terms of changes in individual routines, while in an IMP perspective and industrial network approach learning is related to the use of resources, and focus will be on how this affects other resources and routines within and across relationships. The two perspectives provide as such different starting points for approaching learning. If we choose an adaptive perspective of learning, the starting point will be on the learning dimension of the triangle. The link between business relationships and learning will hence be investigated by looking at the relationship between learning and routines. If we apply an IMP view on the other hand, the starting point will be in the business relationship dimension of the triangle. Accordingly, the link between business relationships and learning will be approached by relating business relationships and routines. Figure 4.5 illustrates the different starting points provided by the two perspectives.

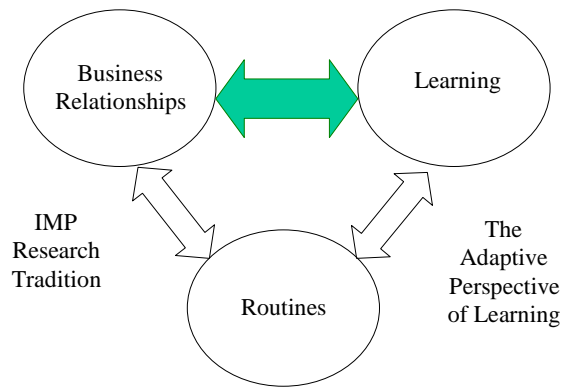


Figure 4.5 Approaches to learning across firm boundaries

A preliminary framework and research issues

In this section, we have looked in more detail at how the IMP tradition and the adaptive perspective of organisational learning consider the three concepts of learning, business relationships, and routines. Both similarities and differences have been identified. We will now look for a framework linking these two perspectives. Firstly, the two perspectives are compatible in the sense that they both build on behavioural and evolutionary perspectives. Applying an adaptive perspective of learning to the investigation of learning in business relationships, based on the IMP tradition's view of relationships, hence makes sense. A difference, however, based on the above discussion is the focus on resources, including physical ones, in the IMP tradition as opposed to human resources and routines in the adaptive perspective of organisational learning. However, the combination of these two views makes an in-depth description of the content of learning possible. While the adaptive perspective considers learning in terms of changes in knowledge and individual routines, the IMP notion of resources may enable us to understand what this knowledge is all about as well as the implications of this learning beyond the local learning context. Together this provides us with way to use the concept of routines in linking learning and business relationships.

In summary, the IMP tradition contributes to our understanding of the implications for learning following from various relationship characteristics, including development stage, type of relationship, and context of learning. In addition, it illustrates what is actually co-ordinated and learned about in routines, that is to say, resources, and the implications of this learning. The

adaptive perspective on the other hand contributes to our understanding of how these processes actually take place. First the changes in the routines can be considered in terms of whether they entail exploitative or explorative learning. While the first relates to refinements of existing routines, such as better utilisation of existing resource combinations, the other points to new routines, enabled by for example the introduction of a new resource or development of new resource combinations. Furthermore this learning perspective also help identifying where learning takes place, in terms of whether it is learning by people engaged in the routine itself or by people not taking part in the immediate performance of the routine. Finally, the perspective also informs us about triggers to this learning.

The insights from the two theoretical perspectives outlined above and the way the three concepts can be viewed and connected based on them have provided a preliminary answer to the overall theoretical question posed in Chapter 1 and will be further used as a framework for analysing the sub-cases in the following chapters. Although the dimensions revealed in this theoretical discussion are not all exclusive in order to capture the learning phenomenon, the literature review presented in this chapter has shown that these dimensions together illuminate important aspects of learning in business relationships. The analyses will be framed within the following research issues:

Relationship characteristics

- Relationship development stage
- Type of relationship
 - o Routines and resources deployed within them
 - o Connections and degree of adaptation
- Connectedness to other relationships

Learning characteristics

- Exploitative versus explorative learning
- Locations of learning
- Triggers of learning
- Imprints and implications of learning

4.7 Summary

In this chapter, we have looked at two theoretical perspectives, the IMP research tradition and the adaptive perspective of organisational learning.

The aim was to develop a theoretical understanding of how to approach learning in ongoing relationships based on these two perspectives. One key question was how routines could be used in order to link learning and business relationships. The literature review has provided us insights from two perspectives and also provided a helpful guidance for the further investigation.

In the review of the two perspectives' approaches to learning, business relationships, and routines, several dimensions and connections have been identified. An important issue has been to decide which to choose for the further investigation. In the IMP tradition and the industrial network approach, the interaction processes between firms in business relationships are considered as processes in which actors, activities, and resources are connected. When certain activity cycles in which resources are used and combined are repeated over time, they become routinised. Inter-organisational routines are embedded in specific resource combinations across firm boundaries. The particular use and combination of resources in various routines are based on experience and learning. Three features of business relationships were proposed to have an impact on learning: the development stage of the relationship, the type of relationship, and the connection to other relationships. This latter characteristic relates to one of the most important assumptions in the IMP research tradition: relationships are connected, that is to say, what happens in one relationship is affecting and affected by other relationships to which it is connected. Hence, learning often propagates beyond its original location.

In the adaptive perspective of organisational learning, learning is considered in terms of adaptation of behaviour and organisational routines based on experience. Routines are changed through internal and external triggers and often associated with dissatisfaction with existing performance. Learning involves both incremental/exploitative learning and radical/explorative learning. Learning in inter-organisational settings can be triggered and initiated by one of the parties or because of joint experiences. These learning processes take place on different levels. Firstly, the direct involvement in performing the routine may result in both exploitative and explorative changes, referred to as on-line learning. Secondly, learning can also be off-line and beyond the immediate performance of the routine. This often results in radical changes in one or more routines. The notion of on-line and off-line learning can also be related to the distinction between operational and high-level routines. High-level routines are routines for improving and changing lower-level or operational routines and this learning is likely to take place off-line, that is to say, beyond the immediate performance of a routine.

Based on this review of the IMP research tradition and the adaptive perspective of organisational learning a framework for understanding and investigating learning in business relationships was developed. The framework was further summarised in some specified research issues.

In the next chapters, the three sub-cases will be presented and analysed, based on the findings from the empirical example in Chapter 3 and these research issues. Each of the sub-cases concerns a customer-supplier relationship. In Chapter 3, common inter-organisational routines that are likely to exist in business relationships were identified. Similar routines have been found in the three cases below. These routines and the empirical questions from Chapter 3 form the basis of the overall presentation and preliminary analysis of the relationships. In order to understand what is going on in each of the relationships, an important change situation has been identified in each. A change situation disturbs the existing state in a relationship. This is then related to disruption of existing routines, which are often provoked by changes. The cases are structured to investigate how the routines in the respective relationships have changed over time, using the various change incidents as a breaking point. Following each of these investigations, further analyses of the cases are provided. These analyses are based on the research issues proposed above, and centre on identifying implications of changes in routines for resources and learning. The structuring of the cases provides the opportunity to approach learning in the different cases in at least two ways. Looking at the various routines in the relationships and how these have evolved before and after the change may help to reveal how learning has taken place in the relationships over time. In addition, the change incidents themselves may reveal interesting implications for learning in and outside the focal relationship.

Chapter 5. Break in a relationship: Implications for routines

5.1 Introduction

This chapter introduces the first case in this thesis, which concerns the relationship between WWD and Supplier A. In the following sections, the relationship will be presented through an overall description of the routines involved in it. The routines identified in Chapter 3, have proved to be important ones in the relationship between WWD and Supplier A as well. The description will, therefore, focus on these routines. The case takes as its starting point a break in the relationship, following Supplier A being replaced by a new supplier on substantial parts of the total product range. This break affected the relationship and the existing routines in various ways.

5.2 The relationship between WWD and Supplier A

As a result of decreased sales and a drop in the USD, WWD's profit had dramatically decreased since the beginning of the 21st century. In order to increase profits, a new sourcing strategy was implemented in 2003, involving buying from low cost countries such as China. Together with an increased use of benchmarking, this strategy resulted in an extensive evaluation of the Asian market. This evaluation resulted in WWD signing a new supplier agreement with a Chinese producer for the supply of industrial gas welding and cutting equipment and regulators in May 2004. WWD had for more than 20 years bought these products from Supplier A. Hence, the new agreement represented the beginning of an important break in the relationship between WWD and Supplier A.

The relationship between WWD and Supplier A went back to the early 1980s. The relationship had been like a "family" relationship", since the two companies' origins could be traced back to the same company. Until being replaced, Supplier A had been one of WWD's largest suppliers and its sole supplier of industrial gas cutting equipment, regulators, and gas distributions systems. Since 2000, Supplier A had also supplied medical gas equipment for use on board cruise ships. WWD was Supplier A's second largest

customer, with sales of approximately 16 MNOK in 2004, of which 15 MNOK represented industrial products and the remainder medical products. These sales constituted approximately 10% of Supplier A's total turnover in 2004. It is important to note that the change did not affect the medical product range. The reason for this was two-fold. Firstly, the Chinese supplier was not currently a producer of medical equipment, which involved strict requirements and significant start-up costs. The second reason was related to the divided responsibility within WWD for medical and industrial products, resulting from the re-organisation in 2003. While the Safety unit was now responsible for all medical gas welding products, the Maintenance and Repair (M&R) unit handled the industrial gas welding products.

Until 2002, the relationship between WWD and Supplier A was considered "business as usual". According to WWD, the relationship was not much different from WWD's other supplier relationships. It was standard and exchange oriented. Supplier A described the relationship with WWD as simultaneously standard and unique. WWD supplied to operating ships, making accurate deliveries crucial. Furthermore, any quality deficiencies would require tremendous reverse logistics operations. As a result, WWD demanded more accurate delivery times and higher quality compared to Supplier A's other customers.

The interaction between WWD and Supplier A was problem-oriented, in that at times of problems, there was much contact, and otherwise not. In the early days of the relationship there had been few formal meetings, but often informal contacts. An exception was the annual supplier meetings at WWD that had been conducted for several years. Different people were involved in the relationship, but some had been involved from the beginning. For example, the same sales manager at Supplier A had been responsible for the relationship since the beginning. In addition, some of the product-technical and sales staff members at WWD had been involved since the 1980s. These persons had come to know each other very well, and personal relationships had developed. This influenced the early discussions of switching supplier at WWD. Many were concerned about leaving Supplier A, not only because of the products supplied, but also because of the relationship of the persons involved.

Due to the stability of the relationship and the products involved, WWD had not paid much attention to Supplier A and the deliveries. However, when WWD started to evaluate suppliers' performance systematically in 2001, it became apparent that Supplier A was not as good as expected. One of the managers from WWD noted that: "This shows that business as usual is not

necessarily good business!”³³ An increased focus on the relationship followed, with more frequent interaction and problem solving. The relationship changed and the climate became tougher. While these problems were not the main reasons for the break in the relationship, they caused WWD to more actively using the new sourcing strategy and benchmarking.

5.3 Interaction and routines in the relationship

In the following sections we shall look more closely at the most important routines in the relationship before and after the break. The “before” period is limited to the last few years before the break, while “after” represents the period starting when WWD informed Supplier A about their decision to switch supplier on the industrial gas welding products.

The relationship between WWD and Supplier A involved many inter-organisational routines. However, similar to what was stated in Chapter 3, the most important of these appear to be the price negotiations and the meeting routine at the commercial level, and the ordering, delivery, and invoicing/payment routines at the operational level. These routines further consisted of several sub-routines at both parties. We will in the following investigation focus on the overall inter-organisational routines involving both WWD and Supplier A. Some sub-routines appear more important than others, and these will hence be included in the overall description of the particular routine to which they belong. For example, the sub-routine involving the distribution of the goods from Supplier A’s producing sister company in the Czech Republic, is considered important and will be included in the overall delivery routine. It is important to note that at the other end of the delivery routine, the sub-routines involved in the further distribution of the goods out from WWD’s IDC in Rotterdam, will not be included in the following investigation. Table 5.1 summarises the five overall routines, before and after the break, according to their function, how they were performed, and who were involved.

³³ Interview no. 2 in Appendix 1

Table 5.1 Routines involved in the relationship between WWD and Supplier A

Routines	Before the change	After the change
<i>Price negotiations</i>	Prices of all the gas welding products Annual supplier and negotiation meetings until 2003 From 2003, several negotiations and temporarily agreements	Prices of the remaining products and redundant stock Agreement about remaining products being ordered. No agreement about stocks
<i>Meetings</i>	Procurement managers and other managers at WWD, sales manager and other managers at Supplier A Discussions about the products, markets, and problems Until 2003, formal supplier meetings once a year, and otherwise when needed. From 2003, more regularly.	Procurement manager at WWD and sales manager at Supplier A Discussions about settling the business and possibilities of continuing some of it Few meetings. Contacts pr e- mail and phone. Technical meeting, autumn 2005
<i>Ordering</i>	Procurement managers and staff at WWD, and sales manager and other managers at Supplier A Ordering of all gas welding products Until 2002, every third month from Rotterdam to Malmoe. From 2003, twice a week on Mondays and Thursday.	Procurement manager at WWD and sales manager at Supplier A, technical staff Ordering of the remaining industrial gas welding products and medicals Until spring 2005, twice a week on Mondays and Thursday from Rotterdam to Malmoe.
<i>Delivery</i>	Operational staff in Rotterdam and Malmoe Delivery from Malmoe to Rotterdam of industrial and medical gas welding products Mondays and Thursdays	Operational staff in Rotterdam and Malmoe Delivery from Malmoe to Rotterdam of remaining industrial gas welding products and medical products Until spring 2005, Mondays and Thursdays.
<i>Invoicing/ Payment</i>	Operational staff in Rotterdam and Malmoe Invoicing and payment of all gas welding products Invoices for each shipment. Payment within 30 days. Operational staff in Malmoe, warehouse staff and financial staff in Rotterdam, financial department at WWD ASA	Operational staff in Rotterdam and Malmoe Invoicing and payment of remaining products Invoices for each shipment. Payment within 30 days. Operational staff in Malmoe, warehouse staff and financial department in Rotterdam, financial department at WWD ASA

Price negotiations

Until 2003, WWD had price negotiation meetings with their main suppliers during the annual supplier meetings at the Head Office in Oslo. While the first part of these meeting would concern various issues important for the relationship, the second part was dedicated to the negotiations. In the negotiations between WWD and Supplier A, prices of both the industrial products and the medical product were negotiated simultaneously and for one year at a time. Prices were discussed and agreed upon based on general tendencies in the market, WWD's sales figures, and the price of raw material. Following the SWOP, WWD also had a basis for comparing the prices with those of other producers. In 2002, a new procurement manager at WWD took over the responsibility of the relationship. He was part of the corporate procurement unit, and responsible for other relationships within the welding product range as well. In the negotiation meeting in 2002, he and the corporate procurement manager at WWD (who had been responsible for the relationship until then), together with the sales manager at Supplier A took part in the negotiations.

During the negotiations in 2002, WWD asked for a decrease in the price of the industrial products. The price of the medical products would remain the same. Supplier A, represented by the sales manager could not automatically accept this, and the parties did not reach an agreement at this meeting. One of the reasons was that the sales manager at Supplier A did not have the mandate to accept a price decrease on behalf of his company. Hence, the parties had to meet again in November, this time with two chief managers at Supplier A also participating. However, this meeting did not result in an agreement, and the discussions, therefore, continued throughout 2003, followed by another meeting in May 2003. The result of this meeting was a temporary agreement, where the 2002 prices remained unaltered. It was, however, agreed that the parties would look at the possibilities of re-specifying some of the products, and thus reducing Supplier A's costs. At the same time WWD reorganised, taking away the corporate function. While the corporate procurement manager now got other responsibilities, not being involved in the relationship anymore, the responsible procurement manager would now handle all relationships within the welding product group within the M&R unit himself, including the one with Supplier A. The responsibilities of the industrial and medical welding products were however divided between the M&R unit and the Safety unit at WWD, respectively. Supplier A also reorganised in the same manner. Hence, the original contact persons were now responsible for the industrial products only, and hence the negotiations were concerned solely with the industrial product group.

From 2003, WWD discontinued the annual supplier meetings, as these were considered too time consuming. Although the meetings and negotiations were only held with the most important suppliers, WWD found themselves spending most of the autumn in an endless sequence of such meetings. In addition, it also appeared increasingly difficult to actually reach an agreement during one meeting, and follow-up meetings often became necessary. This was true for most of the suppliers, and hence the price negotiation routine was changed in general at WWD.

Following the signing of the temporary agreement, WWD and Supplier A continued their negotiations throughout 2003. Some re-specifications were made, and the prices reduced slightly. However, WWD were not satisfied. Because of the intensified search for alternative suppliers throughout 2003, WWD put additional pressure on Supplier A. Despite this threat, however, Supplier A were unwilling to reduce the prices any further. From spring 2004, WWD were busy establishing the relationship with the Chinese supplier, and little contact was sought with Supplier A. When Supplier A were finally informed about WWD's decision in October 2004, Supplier A demanded a price increase for the remaining products. WWD accepted a small increase prices in a meeting in December 2004, though it was uncertain when WWD would stop buying from Supplier A. In addition, there were also discussions about Supplier A's remaining stock of WWD products. Based on the estimates of WWD's requirements, it was expected that there would be some redundant stock. Due to late deliveries from the Chinese supplier, this amount turned out to be much lower than originally estimated. The parties continued to negotiate about cost of scrapping the redundant products per. e-mail throughout 2005. However, no agreement was reached.

Meetings

The relationship between WWD and Supplier A used to be characterised by business as usual. Interaction at the commercial level was problem-oriented, and increased proportionally with problems, or if there were special projects or campaigns. Before 2003, the parties usually met formally at the supplier meetings each year as mentioned above. In addition to prices, the parties exchanged information about the current state of the respective companies, market developments and sales, and technical issues concerning the products. In addition to the annual supplier meetings, meetings were held if and when needed, or, for example, if the responsible manager at Supplier A happened to be in Oslo, visiting other customers. He would then pay a visit to WWD, just to keep in contact. The parties would also meet if there were

problems with the products or the operational processes. While minor problems were solved on a day-to-day basis by the operational staff, more substantial problems were handled in meetings at the commercial level. In addition, suggestions for product and process improvements were also discussed here. The meetings had often implications for the operational processes. The type of staff involved in the meetings differed from meeting to meeting, but the responsible managers would always participate. There were few separate meetings held on the product-technical level. When product-technical matters were discussed at the commercial meetings, product-technical staff would, therefore, participate.

During 2003, the meetings between WWD and Supplier A increased in frequency because of Supplier A's poor delivery performance. The meetings involved staff members from both parties, to gather as much information and knowledge as possible from those involved in the process. This was considered important in order to facilitate the improvements needed. Chief managers from both companies were also involved, as they had the mandate to make the decisions. In the following period, the parties met on average of once a month, most often in Oslo at WWD's Head Office, but also at Supplier A in Malmoe and at the IDC in Rotterdam. In these meetings, Supplier A's delivery performance was thoroughly discussed, along with ways of solving the problems and improving the processes. The discussions were based on the performance evaluations at the IDC and feedback from the operational staff members. Both parties acknowledged that the relationship had deteriorated, and they also acknowledged the need to improve understanding again. Though WWD indicated that they would like to keep Supplier A as a supplier, they were also open about looking for alternative suppliers during these meeting. Both delivery and price were main topics at these meetings, the two being tightly coupled. Throughout 2003, the parties tried various ways to improve the operational processes, and changes were implemented at both ends.

From the beginning of 2004, Supplier A's delivery performance improved substantially, and the expected delivery score of 95% was reached at nearly every shipment. Thus the need for meetings was no longer pressing. However, the parties had started discussions about direct deliveries at the end of 2003, requiring close co-ordination. As WWD started an intensive search for an alternate supplier, finally founding one, little contact was initiated with Supplier A. When WWD finally informed Supplier A in October 2004 that they had found a new supplier, the two parties had not met since early spring 2004. Both parties acknowledged that this was a clear sign that something was wrong. The meetings again increased in frequency, involving both the procurement manager at WWD and the sales manager at

Supplier A. The two parties needed to discuss how to phase out the relationship on industrial products. The discussions concerned the products to be discontinued, expected dates of last orders, what to do with Supplier A's remaining stocks of WWD products, and deciding who would be responsible for paying the re-packing and scrapping costs of the remaining goods. During these meetings there were also some discussions about the possibility for WWD's local sales force starting to buy from Supplier A directly. The meetings were held in a positive atmosphere. Neither WWD nor Supplier A wanted to jeopardize future possibilities, and there was still the relationship concerning the medical products to be considered. Supplier A noticed that it was frustrating to be replaced now that they had finally managed to improve their delivery performance. These efforts now seemed wasted. However, it was also acknowledged that this would benefit other customers, and also WWD on the medical products.

It turned out that for the gas distribution systems, WWD had difficulties in agreeing with the new Chinese supplier. It was primarily a price issue, and the fact that the Chinese supplier was unwilling to invest in new test equipment necessary for the production of these systems. WWD and the Chinese supplier finally reached an agreement on prices of these systems in the beginning of 2005. A period of testing and re-specifying these products then followed. Accordingly, WWD continued to buy these products from Supplier A. In addition, new safety requirements for these systems, relating to fewer couplings for accessing the gas, resulted in further discussions and meetings between WWD and Supplier A throughout the autumn of 2005. As a result, WWD continued buying the systems from Supplier A to a same extent as prior to the break in the relationship.

Ordering

As to the operational routines, the ordering routine co-ordinated the first steps in the exchange processes between WWD and Supplier A. It had been relatively stable throughout the years with only minor adjustments. For example, until 2003, WWD sent orders every third months. At the beginning of 2003 the parties agreed on weekly orders instead, to enable a better overview of the process. This was part of the solution for handling the delivery problems that had occurred. For the same reason it was also decided that the orders should be send on fixed days, Mondays and Thursdays, to make the process more predictable. Earlier the orders had been given to Supplier A on any day. This agreement concerned the big orders primarily, while small orders would still come in on any day. These adaptations in addition to others, resulted from problems experienced by operational staff

in Rotterdam, including the responsible stock planner issuing orders, and the expeditor, being responsible for following up the orders. These staff members communicated the problems to the responsible procurement manager, and different solutions were sought in further discussions with Supplier A. In addition the operational staff from Supplier A visited the IDC in Rotterdam in Spring 2003, and a list of actions were developed in order to improve the processes.

Despite these adaptations, the ordering routine was considered a standard routine by both parties, similar to the parties' other supplier and customer relationships. It was primarily scheduling that needed to be adapted. The ordering routine worked as follows. Every night a proposal for each specific product group was created by the ERP system at WWD's IDC in Rotterdam. The responsible stock planner in Rotterdam evaluated the proposals the following morning for stock ordering. A new purchase order was sent if the stock level was below the fixed order point. This process was not as straightforward as it may seem, however. The evaluation was based on past experience and knowledge about the specific products, the specific supplier, such as Supplier A in this case, and the sales pattern in the internal and external network. This meant that the stock order point was not absolute, and there could be other factors involved. WWD and Supplier A were not electronically linked up, although Supplier A was experienced in electronic ordering from their largest customer. Hence, WWD sent the orders by fax.

One order usually contained different products and number of products. The order contained information about the product numbers, amount of products, the prices, delivery times, and the names of the contact persons at both Supplier A and WWD. One specific staff member at Supplier A was assigned to the WWD orders, registering the order it into the system. This person had worked with WWD for several years and knew their buying routines. Much of this knowledge was not codified, and consequently problems occurred when this staff member went on leave for a year in 2003 and other persons had to handle the WWD orders. This contributed to the problems that occurred during this period. It took a while but the new staff member eventually learned the routine. When the order was registered, stock levels at the warehouse in Malmoe and prices of the respective products appeared on the screen. If the goods were in stock, they were included in the next shipment, and an order confirmation was sent by fax to WWD, usually within 24 hours. Both the original order and a copy of the confirmation were filed. If the required goods were not in stock, a confirmation of when the goods might be expected in Malmoe, was sent to WWD within 72 hours. If WWD did not receive the confirmation within the agreed upon time, the expeditor would call the responsible staff member at Supplier A to check on

the order. If the total order was not available, the responsible staff member at Supplier A would send a confirmation for what was available for shipment to WWD. Supplier A's customers differed as to whether or not part deliveries were acceptable WWD on their part had accepted this.

Despite the fact that WWD decided to switch supplier in 2004, Supplier A was not affected until spring 2005. In fact, WWD increased their orders at the end of the year 2004. For the regulators and the gas welding and cutting equipment the last orders were scheduled for the end of January and April 2005. As to the gas distribution systems, it was decided that Supplier A would supply these systems until WWD and the Chinese supplier reached an agreement. Hence, WWD was still sending orders twice a week in April 2005. It was expected, however, that the ordering would eventually be reduced to once a week. The consequence of this reduction for Supplier A would be less work with order handling the, as fewer products had to be registered. For WWD, the key was to make the transfer to the new supplier as smooth as possible. This meant that they could not stop ordering from Supplier A until they were certain that the deliveries from China worked properly. Hence, WWD were simultaneously sending orders to both Supplier A and to the new Chinese supplier, and the responsible stock planner had accordingly to balance the different orders. However, in an overall perspective the switch only implied "changing numbers" in the system, as noted by the responsible stock planner at WWD.³⁴

Delivery

The next step in the exchange processes between WWD and Supplier A was the delivering of goods. This routine had also been relatively stable throughout the years, involving only small changes. According to respondents in both companies, the delivery routine was standard, and adaptations were primarily in terms of the flow of information following the goods and delivery schedules. Approximately 95% of Supplier A's deliveries were shipped to the IDC in Rotterdam. The remaining units were direct deliveries of medical products to WWD's office in Miami. In 2003, the parties commenced discussions about direct deliveries from Malmoe to some of WWD's other European sites. Supplier A delivered directly to its largest customer, and was willing to offer the same to WWD. Though WWD were reluctant due to problems with the deliveries into Rotterdam, the parties finally agreed that Supplier A would start to deliver directly to WWD's Hamburg office as a start. The Hamburg office was one of

³⁴ Interview no 28 in Appendix 1

Rotterdam's largest internal customers of these products. If successful, the new routine could be rolled out to other sites. It was supposed to be put into operation at the beginning of 2004. However, it was never carried out, mainly because WWD was being occupied with finding an alternate supplier, but also because of an internal dispute in WWD concerning the whole distribution system, with the IDC being the focal point.

The delivery routine worked as follows. When an order from WWD was registered in Supplier A's ERP system and the products reserved, pick lists were printed out in the warehouse in Malmoe, one for each product in the order. The staff member responsible for the WWD deliveries then prepared the shipment, based delivery times. He would make a pallet for each of the products and leave these open to be filled up. If products were not in stock, he would wait for goods from the Czech production unit. The pallets were numbered. There used to be one shipment each week from Malmoe to Rotterdam, on Thursdays, but in the autumn of 2003 it was decided that two deliveries per week were needed. The main reason for this was to avoid too big shipments, which were difficult for the reception staff in Rotterdam. It was decided that the deliveries should arrive in Rotterdam on Mondays and Thursdays. Hence, the shipments had to leave Malmoe on Tuesdays and Fridays, and be packed by noon the day before. The specific days were decided on the operational level, based on co-ordination with the shipments from Supplier A's sister company in the Czech unit and from a Norwegian sub-supplier, who produced the gas distribution systems. WWD sometimes arranged the transport from suppliers into Rotterdam, but Supplier A arranged the transport themselves. At the end of 2004, Supplier A switched service provider. The new provider was more flexible with regards to time of pick up, and Supplier A accordingly had more time to pack, increasing their possibility to complete the order, if goods from the Czech unit were coming in on the same day.

Copies of the pick lists were included with the goods in pallet No. 1 for WWD's information and use. Next to every product number the responsible staff member wrote by hand where the goods could be found. This was a WWD requirement in order to save time at the destination. The pallets were packed, weighted, and deviation reports written when necessary. This information, together with the pick lists, and the order itself, were given the Shipping Department for booking the transport from the service provider. This had to be completed by 1300 p.m. on Mondays and Thursdays. The booking order included the number of pallets in the shipment, their weight, whether the pallets were full or only partly filled, etc. The shipping responsible simultaneously sent a fax to WWD detailing which products would arrive and delivery information, such as number of pallets, prices, and

date of shipment. The service provider then picked up the goods the following morning. The provider sent an invoice to Supplier A, who in turn faxed a copy to WWD, together with a copy of the booking order to. All the above documents and information were then registered and filed.

Similar to the ordering routine, the delivery routine evolved from experience gained throughout the years. The person assigned to WWD goods possessed knowledge about these specific deliveries and WWD's requirements that were implicit but not recorded. This, however, did at times result in chaos at the reception unit in Rotterdam, when this person was out of the office and the regular sub-routine not being followed due to inexperienced personnel handling the deliveries.

Although the delivery routine was relatively standard and stable throughout the years, it all of a sudden fell apart during 2002/2003. Supplier A was not able to meet WWD's expected service level, and thus scored low on the performance rates measured in Rotterdam. The expected level for Supplier A was 95%, which implied that of 100 deliveries, 95 should be on time +/- 2 days. The problems were discussed in several meetings and efforts were made to improve the delivery routine throughout 2003, both internally at each company and between the companies. The problems were in part attributed to poor communication and understandings between Supplier A and the Czech production unit, which was responsible for automatically replenishing the stock at the central warehouse in Malmoe. However, it also turned out that there were misunderstandings about the actual shipping date. While Supplier A operated with the date when the goods left Malmoe on the order confirmation, WWD used the date of arrival in Rotterdam in their evaluations. Hence, Supplier A was always scoring low as to delivery performance. In addition, it also turned out that the shipments were not booked in immediately on arrival in Rotterdam, and WWD had to improve upon the reception routine. In addition, Supplier A also started delivering twice a week to Rotterdam, since the problems in the reception routine were attributed to too large shipments. Yet another problem was Supplier A's implementation of a new ERP-system in June 2003, experiencing start-up problems. This affected both the ordering and the delivery routines.

These problems resulted in an extra focus on this specific relationship, and both commercial and operational staff members from both parties were involved in an attempt to improve the processes. For example, some of the operational staff members at Supplier A went to Rotterdam in March 2003 to achieve a better understanding of the processes. In addition to improving the sub-routines with the Czech unit, it was also agreed that Supplier A should stock two months of WWD's products in Malmoe. Furthermore, Supplier A

also assigned an extra staff member to follow up the shipments to WWD. He would get a copy of all the WWD orders and keep track of the stock levels of WWD products. He would then follow up the WWD orders manually, instead of depending on the automatic replenishment of the stocks in the ERP system. Following these various corrective actions, the delivery routine was substantially improved, and in 2004 Supplier A again performed according to the expected service levels, though some minor problems occurred again at the end of the year.

Similar to the ordering routine, the delivery routine continued as before for several months after WWD had informed Supplier A about the new agreement with the Chinese producer. Supplier A, however, made the decision to decrease the stock level of WWD products. Consequently, when WWD increased their orders at the end of 2004, Supplier A was not able to deliver, resulting once more in unsatisfactory performance scores. Supplier A, therefore, increased the stock level again, as they wanted to keep WWD as a customer, and also show that even though WWD could get a lower price elsewhere, they could offer a better service. In April 2005, Supplier A was still delivering twice a week to Rotterdam. However, it was expected that this would be reduced to once a week. It would, for example, be too expensive to send two pallets twice a week, instead of four pallets once a week. As mentioned, WWD was also open to Supplier A delivering directly to the local network. However, this never materialised. Another important issue in this respect is that because of a new safety requirement of the gas distribution systems, WWD continued to buy these from Supplier A.

Invoicing/payment

The invoicing/payment routine was also standard, both at WWD and Supplier A. Supplier A had, however, urged WWD to improve the actual payment part of its routine. According to the agreement, WWD was scheduled to pay no later than 30 days after receipt of the invoice. However, the average time had been 45 days. WWD attributed this to the fact that they did not have a well functioning routine for handling the invoices. There was also a problem previously with the invoices not having been specified. This matter was resolved in a meeting at the end of 2002. The routine worked as follows: The prices were negotiated beforehand. The purchase order included the prices of the various items, and the total price of the order. This information was also registered in WWD's ERP system, with the prices showing automatically when the stock planner created a purchase order. The operational staff member at Supplier A, assigned to the WWD's orders, then checked that the prices upon receipt. When the shipment was complete, an

invoice was sent by mail to Rotterdam. It was received by warehouse staff, who would distribute it manually to the financial department in Rotterdam. It was WWD ASA who used to pay for the goods, and Rotterdam invoiced ASA. The invoicing/payment routine was supposed to be an automatic process within the ERP system. However, problems had occurred due to inconsistencies in the routing of the invoice at the IDC and also because of inconsistencies in booking in the goods. Hence, the payments would often exceed the agreed 30 days.

Following the break in the relationship between WWD and Supplier A relating to the discontinuing of many of the industrial products, there was a reduction in the number of invoices and payments from 2005.

5.4 Summary

In this chapter, the relationship between WWD and Supplier A has been presented, by a thorough discussion of the most important routines involved in the relationship. The case was centred on the break in the relationship, following from WWD replacing Supplier A with a Chinese producer for substantial parts of the total product range. The relationship had lasted for over 20 years, and the two parties had developed extensive knowledge about each other and ways to co-ordinate the exchange processes. This knowledge manifested itself in the various routines of the relationship. Due to the break, these routines were affected in various ways. The break constituted a changing point in the relationship, and hence provides the possibility to look at the routines both before and after the change. This gives further possibilities for investigating learning in this relationship. The aim of this description and investigation has been two-fold. Firstly, it has provided a further understanding of the relationship between WWD and Supplier A. Secondly, by identifying the changes in the routines before and after the break in the relationship, a basis for a further investigation of the learning in the relationship has been enabled.

Chapter 6. Break in a relationship: Implications for resources and learning

6.1 Introduction

The central theme in this case is the break in the relationship between WWD and Supplier A. WWD replaced Supplier A with a new supplier of industrial gas cutting and welding equipment and regulators. Supplier A thereby lost a substantial part of its total sales to WWD. In the previous chapter we saw how this change affected the routines involved in the relationship between WWD and Supplier A.

In this chapter the relationship between WWD and Supplier A and the routines involved in it will be further analysed. The aim of the analysis is to look at how learning has been reflected in the relationship, by looking at the implications for the resources and learning following changes in the routines and the break in the relationship. The analysis is based on the research issues proposed in Chapter 4. Firstly, the relationship will be analysed in terms of the three relationship characteristics (relationship development stage, type of relationship, and connection to other relationships). Particularly we shall take a closer look at the type of relationship. Focus is here put on identifying the resources deployed in the routines in the relationship and how these were affected by the change and also looking at the degree of involvement in the relationship in terms of connections and adaptations in the interfaces between the parties. Next, we will look at how the routines and the resources have changed, before and after the main change incident, and relate this to learning. This contributes to identifying characteristics of learning in the relationship. Implications of changes in the routines in the two periods before and after the change as well as of the break itself for learning are also discussed. The main findings from the analysis will be discussed at the end of the chapter.

6.2 Characteristics of the relationship

6.2.1 Relationship development stage

The relationship between WWD and Supplier A had lasted for over 20 years, when WWD decided to switch to another supplier of substantial parts of the

product range. Until 2002, the relationship was perceived as being very stable and was characterised as business as usual. It was also considered a mature relationship, with well-established and well-functioning routines. However, when WWD started an in-depth evaluation of the main suppliers in 2001/2002, it became apparent that the operational processes in the relationship did not work as well as expected. The relationship was changed as a result of this finding and more emphasis was put on interaction and problem solving. We may say that the relationship went from a mature stage into a development stage in order to regain efficiency in the operational routines. It also seems reasonable to say that the problems in the relationship contributed to the break in the relationship, even though the main reason for it was WWD's new sourcing strategy. Due to dissatisfaction with Supplier A and the need to save money, WWD went into a pre-relationship and exploration stage with a new supplier. Simultaneously, WWD attempted to re-establish a mature and stable relationship with Supplier A. When WWD decided to replace Supplier A on the industrial products, the parties remained in the development stage during the process of deciding how to handle the decrease in volumes and the fade out of the industrial products. This process required close surveillance and interaction. Hence, we see that in the relationship between WWD and Supplier A, the parties went back and forth between different stages, according to the incidents occurring.

6.2.2 Type of relationship

What type of relationship was the relationship between WWD and Supplier A in terms of connections between the two actor and the activities and resources? Was it a high or low involvement relationship? In this section we shall take a closer look at the various routines in the relationship, in terms of identifying what resources and resource interfaces were involved in them. Furthermore, we shall see to what extent the connections between WWD and Supplier A were close, emphasising the degree of adaptation in the routines and the resource interfaces. The analysis will focus on the routines before and after the break in the relationship.

Resources involved in the routines before the change

The routines in the relationship between WWD and Supplier A were enabled by the use and combination of several physical and organisational resources. The industrial and the medical gas welding products were the important product resources in this relationship. In addition, the production, storage,

distribution, and use of these products depended on several facility resources. These included the production facilities owned by Supplier A's Czech sister company and the Norwegian sub-supplier producing the products, trucks distributing the goods, the respective warehouses both in Malmoe and Rotterdam, each party's ERP systems, and customers' ships using the gas welding products. As to organisational resources, the most important business units were the respective companies, represented by the procurement manager at WWD and the sales manager at Supplier A responsible for the relationship. In addition, other managers and technical staff members at both firms were also involved. WWD's IDC unit with its operational staff was also an important unit, represented by in addition to the operational staff at Supplier A. Besides the business units directly involved in the relationship other units were also indirectly involved. For example, WWD's customers and alternative suppliers were important as well as Supplier A's sub-suppliers, including the Czech production unit, the Norwegian sub-supplier, and the logistics service provider. The most important business relationships were the relationships between WWD and Supplier A, represented by the relationship between the responsible managers and between the operational staff at the IDC and in Malmoe. In addition, the relationships between WWD and its customers and Supplier A and the sub-suppliers were important relationship resources.

If we look at each of the routines in the relationship between WWD and Supplier A, we see that they were comprised of a combination of these different resources. In the following these will be described and illustrated in respective figures.³⁵ As to the price negotiations these concerned the gas welding product resources and the characteristics of these products, including availability and complexity, presumably affected the negotiations. Until 2003 the negotiations concerned both the industrial and the medical products. However, following the re-organisation at WWD, the Safety unit and the M&R unit became responsible for negotiating prices of the medical and the industrial products respectively. At Supplier A the responsibility for the industrial and medical products were also given to two different divisions. As a consequence, the price negotiation routine was divided into two routines. We will here concentrate on the negotiations involving the industrial products, as these were the ones affected by the break.

The negotiations were handled by the responsible managers at each of the two business units. In some of the negotiations other managers participated as well. For example, before the re-organisation at WWD in 2003, WWD's

³⁵ The figures use the same symbols as Figure 4.3. p. 67 presented earlier in the thesis, and the straight lines indicates interfaces between the resources.

corporate procurement manager would attend the negotiations, and after the re-organisation the business unit director of the M&R unit would sometimes attend. Supplier A's top management was also involved if the discussions were difficult. This was because the sales manager did not have the mandate to give WWD discounts. These persons represented the different business unit, and constituted as such important resources by enabling and affecting the price negotiation routine. Each of these brought with them their knowledge and motivation to the negotiations. For example it was considered that the negotiations became tougher following the new procurement manager being responsible for the welding products in 2002. In addition, both WWD and Supplier A were facing tough times and this affected the negotiations. Furthermore, the relationships between these persons were also important resources in the routine, affecting it in different ways. In the below figure the most important resource elements and interfaces directly involved in the price negotiations are illustrated:

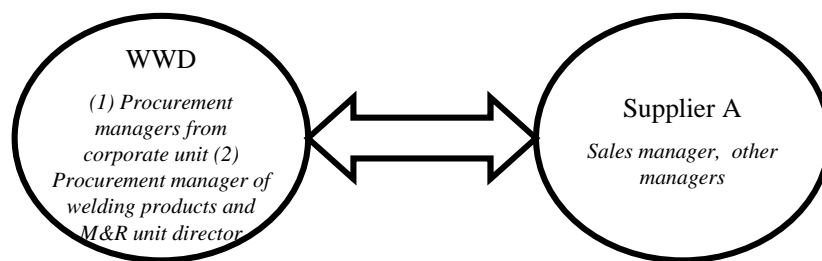


Figure 6.1 Resources in the price negotiation routine before the change

The procurement manager at WWD and the sales manager at Supplier A, being the main responsible for the price negotiations, were also the most important resources representing the respective business unit in the meeting routine. Until the reorganisation at WWD and while they were still having annual supplier meetings, the corporate procurement manager in addition to various other managers and staff from WWD's sales, operations, and technical units also participated. Some of the latter continued to be involved in the meetings, especially the product manager and the technical engineer in the welding team at WWD. Furthermore, other managers from Supplier A often took part in the meetings. The parties met to share information and give updates, and to solve various problems that occurred. These persons were important resources in the meetings, bringing their experiences and knowledge to be combined with those of the others. As such, the interface between these persons can be considered as a knowledge interface. In addition, these persons were resources in terms of their possibilities to activate and develop other resources. For example the procurement manager

at WWD would communicate and ensure the implementation of different solutions discussed in the meetings by mobilising the operational staff at the IDC. Furthermore other resources would be indirectly involved in the meeting routine, constituting important discussion topics. The following figure illustrates the most important resources and interfaces directly involved in the meeting routine:

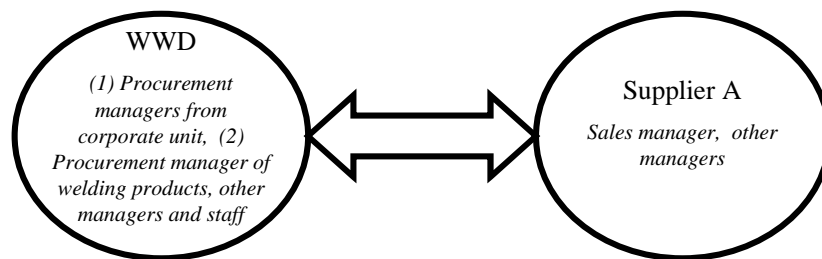


Figure 6.2 Resources in the meeting routine before the change

The operational routines, including the ordering, delivery, and invoicing/payment routines, involved the use and combination of both organisational and physical resources. The ordering routine involved first and foremost the staff at the IDC in Rotterdam and at Supplier A, representing the important business units involved in this routine. As such, the routine was comprised of the interface and the relationship between these staff members. These persons had developed specific knowledge about each other's ways of handling their respective parts of the routine and how to coordinate the ordering between them. In addition to these direct interfaces, the ordering routine was also dependent on various sub-routines, involving the use and combination of various resources. WWD's ERP system facility at the IDC in Rotterdam, for example, was highly involved in the ordering routine. Based on reports generated by this system and additional data, such as sales to the internal and external network of customers, the planner would send an order to Supplier A. Here the operational staff member responsible for WWD orders would register and reserve the order in Supplier A's ERP system. If the required products were out of stock, new products had to be ordered from the Czech production unit and/or the Norwegian sub-supplier. As such, the ordering routine also involved the relationship between WWD and their network and between Supplier A and their sub-suppliers, in addition to the two companies' ERP facility resources. The resources and interfaces involved in the ordering routine may be illustrated as follows:

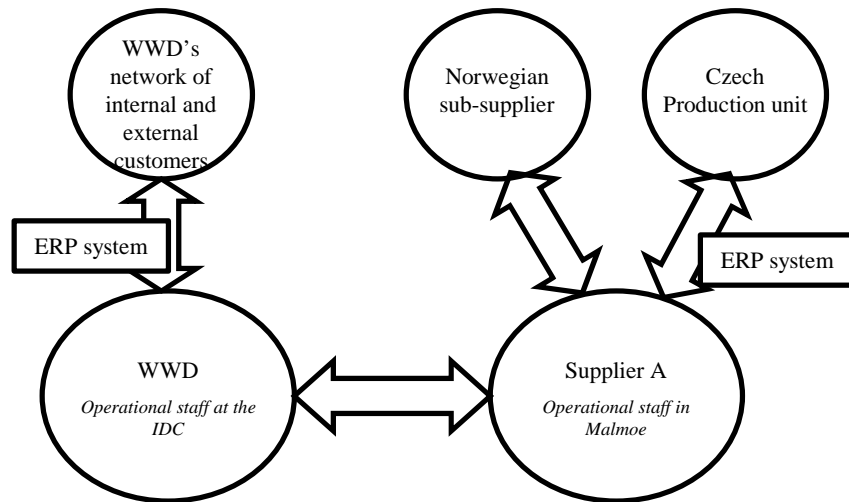


Figure 6.3 Resources in the ordering routine before the change

As to the delivery routine, this routine also involved several physical and organisational resources and combinations between them. The routine concerned the distribution of industrial and medical gas welding products (GWP). These products were produced at the production facilities of the Czech production unit and the Norwegian sub-supplier, and furthermore distributed via Supplier A's warehouse in Malmoe and to the IDC in Rotterdam. The interfaces between the gas welding product resources and these facilities were important for the delivery routine, for example in terms of how and when the products were produced, stored and distributed. In addition, Supplier A's ERP system was an important facility resource enabling the deliveries, as it was used to communicate with the Czech production unit.

Furthermore, several business units, represented by various staff, were involved, such as the warehouse staff at each company packing and receiving the goods. They had to co-ordinate with each other and hence there was a close interface between them. In addition, Supplier A's logistics service provider distributing the goods to Rotterdam was an important business unit resource, and there was an interface between this provider and the warehouse staff in Malmoe in terms of time scheduling. In addition, the relationship between this provider and Supplier A was important. The relationships between Supplier A and its sub-suppliers were also important. Similar to the ordering routine, the delivery routine may be seen as consisting of several sub-routines. The further distribution of the goods out

of Rotterdam was also part of the overall routine, hence involving additional resources and resource interfaces. Though, we have chosen to focus primarily on the interfaces involved in the deliveries into Rotterdam, resources such as WWD's network of internal and external customers were of course important, as these were the actual reason for the delivery routine. Hence, the delivery routine was comprised by the resources and interfaces illustrated in the figure below:

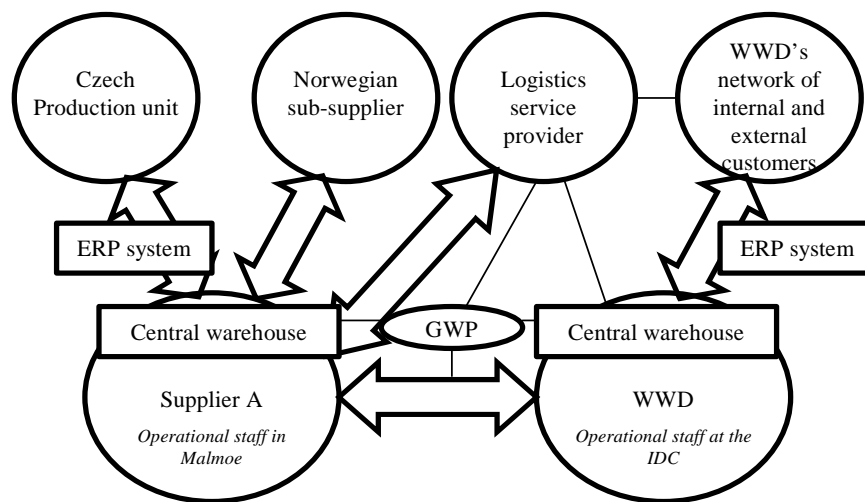


Figure 6.4 Resources in the delivery routine before the change

The final operational routine in the relationship between WWD and Supplier A was the invoicing/payment routine. This routine involved Supplier A's operational staff issuing the invoices and the IDC warehouse staff receiving and further distributing them to the financial department in Rotterdam. These units and the interfaces between them were important for the functioning of the routine. Especially the routine was dependant on the internal interfaces at the IDC. Furthermore, WWD's ERP system was an important facility resource as the invoices would be registered into the system and also because information about the booking in of goods would be available in the system. This was the basis for the financial department at WWD's Head Office to authorise payments. Hence, the most important resources and resource interfaces involved in the invoicing/payment routine can be illustrated as follows:

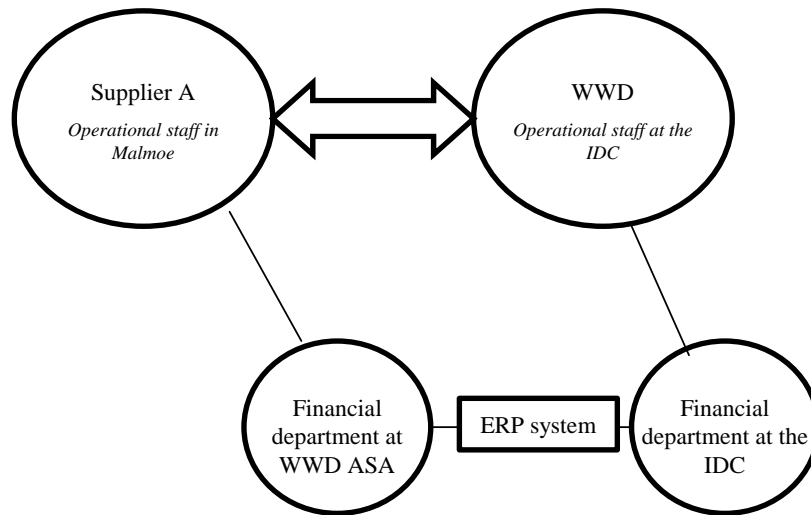


Figure 6.5 Resources in the invoicing/payment routine before the change

Resources involved in the routines after the change

The break in the relationship between WWD and Supplier A affected the routines in a number of ways, including some resource interfaces being terminated or changed. For example, the price negotiation routine for the industrial product range was supposed to be terminated as soon as WWD stopped buying the products. However, as WWD was forced to continue purchasing because of problems with the deliveries from the Chinese supplier, further negotiations took place concerning the remaining products and redundant stock. Similar to what had been the situation in the negotiations the last years, WWD could now use the prices from China as a benchmark in the negotiations with Supplier A. As such the price negotiations up to the break and also after the break were influenced by WWD's contacts and relationship with the new Chinese supplier, being a new business unit resource affecting the routine. A similar situation took place in the meeting routine. Hence, we may say that in the period around the break, the price negotiation and meeting routines were constituted by the following resources and interfaces:

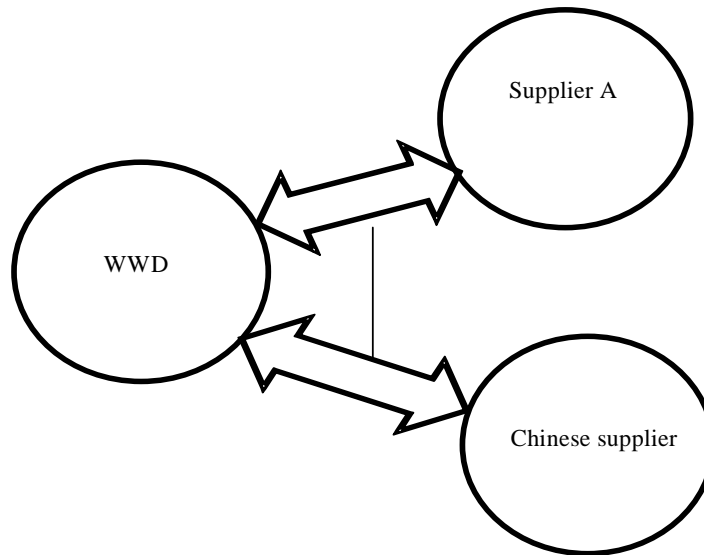


Figure 6.6 Resources in the price negotiation and meeting routines after the change

The three operational routines, the ordering, delivery, and invoicing/payment routines were affected by the break in different ways. About 2/3 of the total product range was taken away as most of the industrial products disappeared. Hence, Supplier A's operational staff received fewer orders and thereby fewer orders and deliveries to process. As a result these organisational business units in Supplier A were less utilised. It was also expected that there would be some reduction in warehouse staff. In addition the sub-routines involved in the relationship with the Norwegian sub-supplier were also expected to be affected, as gas distribution systems to WWD were the main items provided by this supplier to Supplier A. However, as WWD continued to purchase these systems from Supplier A, these effects did not materialise. At the IDC in Rotterdam, the change in the ordering routine was predominantly a change of the information being registered into the ERP system facility and a decline in the frequency of the purchase orders sent to Supplier A. However, there would still be interaction with Supplier A relating to the medical products, and, as it turned out, to the gas distribution systems. With regard to the deliveries, the parties discussed the possibilities for Supplier A to send the goods once a week again instead of twice. However, by mid 2005, this had not changed. The invoicing/payment routine did not change much either, only in terms of the amount of goods being paid for.

The three operational routines continued after the change, though in a somewhat different way. Many of the industrial product resources were discontinued, but this had few effects on the other resources involved. Hence the resource pictures following the change looked pretty much the same as illustrated in the figures before the change. The same units and operational staff at both parties handled both the medical and the industrial products. As WWD continued to buy the medical products and the gas distribution system the existing routines and the resources deployed in them were still required, though to a lesser extent than earlier. Hence, these routines and resources changed primary in a quantitative way.

Connections and degree of adaptation

The degree of involvement in a relationship may be considered in terms of how standard or adapted its interfaces are. We shall now look at the extent to which the routines in the relationship between WWD and Supplier A, and the way the resources were used and combined were specifically adapted to this particular relationship. However, first we will briefly look at the connections between WWD and Supplier A in terms of the bonds established on the actor level. These bonds were presumably strong after 20 years of interaction. Both companies originated from the same company, and the gas welding industry in Scandinavia is rather close and transparent. The parties knew each other very well, and had certain assumptions and expectations of each other's behaviours. There were also examples of personal relationships between different staff members at the two companies, though it was recognised that these were closer earlier in the relationship. While different people had come and gone, others had stayed in the system at both companies since the beginning. These persons still influenced upon the relationship, for example relating to WWD's internal discussions about switching supplier. However, in recent years there was not much contact between the two companies beyond problem solving. Though there were presumably commitment and trust between the parties in an overall perspective, due to the long-term relationship, it was recognised that the relationship had changed as new procurement managers became responsible for the relationship on WWD's part. In addition the problems with the deliveries had influenced the relationship negatively.

As to the routines and resources deployed in them, some were relatively standard while other more adapted to this particular relationship. Hence, the connections between the parties varied. The price negotiation routine, for example, used to be a standard routine at both parties. WWD had annual supplier meetings with its most important suppliers every autumn at the

Head Office in Oslo, where price negotiations were a key issue. The prices were agreed upon for one year at a time. For Supplier A this was also a standard way of negotiating prices. The routine involved units, represented by various managers, who were responsible for similar negotiations with other suppliers and customers. However, we may expect that the negotiations in the various relationships would to some extent be influenced by the atmosphere and the knowledge of the participants. For example the responsible manager at Supplier A was perceived by WWD, as experienced in the game and similarly, the responsible manager at WWD was perceived by Supplier A as a tough negotiator.

In 2003, WWD stopped the traditional autumn meetings as these were perceived too time consuming, but prices were still to be negotiated every year. It was also increasingly difficult to agree on prices in a single meeting. For example in the negotiations between WWD and Supplier A in 2002, the parties did not manage to reach an agreement, and the negotiations continued throughout the following year. It took until June 2003 for the parties to reach a temporary agreement. This was a general trend, and not specific to the relationship between WWD and Supplier A. The market had hardened, due to the increased competition from Asia. All actors were now more price-conscious.

Similarly, the meeting routine between WWD and Supplier A was standard, at least from WWD's point of view. WWD's annual supplier meetings concerned issues that were considered important in the relationship. Though there were other meetings throughout the year, the supplier meetings constituted the most important formal meetings between WWD and its suppliers. The meetings between WWD and Supplier A were primarily attended by the responsible managers from each company, in addition to other managers and sometimes sales and technical staff. There were no regular meetings between technical staff, though these were in contact if problems or customers' complains occurred. Similar to WWD's other supplier relationships the contact with Supplier A was problem-oriented. If there were problems or if WWD was running a project or campaign for example, the meetings would be more frequent. It was remarked by some WWD's respondents that there was very little effort on WWD's part to cooperate and also develop the relationships with the suppliers. A reason for this was attributed to the fact that the products were standard and well developed, in addition to tough time pressures. Supplier A used similar practices with many of its customers. As long as there were no problems occurring, there was no need to meet. However, Supplier A had a close cooperation and frequent meetings with their largest customer to discuss strategies and operations.

Though the meeting routine was somewhat standard in form, its actual performance was naturally different from meetings with the respective parties' other customers and suppliers. The relationship between WWD and Supplier A had lasted for over 20 years, and the parties knew each other well. Specific ways of communicating and certain expectations had been developed. It was, however, recognised that the relationship had changed throughout the years as a result of the turnover in personnel. However, some of the original persons were still around. For example the sales manager at Supplier A had been involved since the very beginning, and also some technical staff from WWD.

The operational routines in the relationship between WWD and Supplier A were both standard and adapted. The ordering routine for example, was conducted by both parties in a similar way in their other relationships. The same units at each party handled orders for several other suppliers and customers, using the same routines and resources. Operational staff at WWD's IDC created an order based on the report from the ERP system facility and their knowledge about the respective products and Supplier A. This was sent to Supplier A, and handled by the operational staff in Malmoe. The adaptations in this routine concerned the time scheduling of the ordering. In addition, for Supplier A the order confirmation was specific for this particular relationship, as WWD demanded a confirmation within 72 hours.

The delivery routine in the relationship between WWD and Supplier A can also be considered as a standard routine in the sense that it used the same combination of resources in a similar way to those being used for other customers and suppliers. The goods was delivered from Supplier A's central warehouse in Malmoe to the IDC in Rotterdam, from where they were distributed to WWD's internal network and customers. Supplier A did send some of the medical products directly to WWD's office in Miami, and there were discussions about direct deliveries of the industrial products to various offices as well. However, this was never carried out in practice. WWD had a similar delivery routine with most of its suppliers. Supplier A had two strategies. For most of the customers a similar routine to the one employed with WWD was used, delivering to the customers' warehouses. However, for its main customer, Supplier A delivered to this customer's customers. Thus the routine with WWD was standard, while the routine with the main customer was adapted.

However, although the delivery routine was relatively standard for both parties, some adaptations had been made throughout the years. Firstly, this related to the products being delivered by Supplier A to WWD. The products

Supplier A supplied to WWD were all made to WWD's specifications. There were variations in the dimensions of the products, the contents of the toolboxes and the composition of the materials and the packaging of the products, all in order to meet the maritime environment on board the ships. When it concerns the gas distribution systems these were made up by standard components, however, the systems themselves were adapted to WWD. In addition, WWD and Supplier A had agreed that Supplier A should keep two months of stocks of these products.

If we look at the delivery routine in itself, this was also adapted, as the frequency of the deliveries and actual days the goods arrived in Rotterdam were specific for this relationship. In addition, there were also some adaptations in terms of the information that followed the goods. WWD required that all suppliers included a special pick list, which had to be attached to the first pallet in the shipment, and on it the associated pallet number for each product had to be written. In addition, each pallet should contain only one type of product. This was a standard requirement from WWD's point of view, but specific for Supplier A.

Supplier A considered WWD's delivery routine requirements as being stricter than those of its other customers. Supplier A understood that WWD was very dependent on accurate deliveries, as its customers were operating ships. The products had to be in the port at exactly the right time. In addition, if there were quality problems with the products, this would result in a very difficult return process. Hence, WWD was very concerned with quality. From this we see, that despite using the same resources as those used with other relationship partners, special adaptations were required for this particular relationship.

The invoicing/payment routine was also standard for both WWD and Supplier A. WWD and Supplier A had agreed that WWD should pay within 30 days after receipt the invoice. This was standard for both parties. However, similar to many of its other supplier relationships, WWD paid on average 14 days too late. This was because the sub-routine within the IDC did not work well. Sometimes the warehouse staff did not immediately forward the invoice to the financial department, while at other times the goods were not booked in immediately. In general, the interface between WWD's internal units did not function well, in terms of handling the invoices from the suppliers.

In the above sections, the relationship between WWD and Supplier A has been analysed by looking at the routines and the resources involved. Was this relationship a high or low involvement relationship? It appears that the

interfaces in the relationship between WWD and Supplier A were relatively standard. Initially the actor bonds were strong, as the same people were involved for several years, and personal relationships were established. In recent years personnel changes at WWD and problems with the deliveries had made the actor bonds weaker. Nevertheless, the parties still knew each other very well after 20 years of interaction. When it concerns the routines and resources, these had traditionally been considered standard. Most of the routines and resources were used in similar ways for handling many different relationship partners. This was especially the case for WWD. Adaptations were made to the products, such as the material required by WWD. In addition, the various routines were modified to fit the overall structure with Supplier A's suppliers. Hence, it does not seem reasonable to consider this relationship as being either a low or high involvement relationship. Instead, it seemed to be in between these two categories, and more in terms of a middle involvement relationship.

6.2.3 Connectedness to other relationships

Looking at the final relationship characteristic, connectedness to other relationships, we shall see that the relationship between WWD and Supplier A was embedded in a network of other relationships. We saw earlier that both Supplier A's suppliers (the Czech sister company, the Norwegian sub-supplier, and the logistics provider) and customers, as well as WWD's other suppliers and customers, were important to the relationship. These relationships posed both possibilities and constraints on the focal relationship, in terms of providing products and services, requirements, and ideas to the two relationship partners. There were, however, few horizontal connections between this focal relationship and WWD's other supplier relationship in terms of co-operation and sharing of information. This may be because Supplier A was the sole supplier to WWD of these products. Following WWD establishment of the relationship with the Chinese supplier, these two relationships became connected, an as such a horizontal connection created. As long as the Chinese supplier was reluctant to supply some of the products, i.e. the gas distribution systems, Supplier A continued to supply WWD with these systems. In addition, there was also the issue with the new safety requirement of these systems, and Supplier A had in-depth knowledge about these products and hence good opportunities to find a new technology to meet these demands. This meant that Supplier A continued to supply WWD with these systems, even though WWD and the Chinese managed to agree on prices for these products in 2005. There was, however, a issue that WWD could gain this knowledge themselves, and then

teach the Chinese supplier how to use it. Hence, it seems clear that these two relationships affected each other.

6.3 Characteristics of learning in the relationship

In the above sections we have looked at the characteristics of the relationship between WWD and Supplier A. The various resources and resource interfaces involved in the routines before and after the change were identified, and described in terms of degree of adaptation. In the following sections we will further analyse the routines by looking at how they have changed in the time before and after the break in the relationship. We will aim to understand how learning has taken place in the relationship between WWD and Supplier A. Following questions will guide this analysis: What learning processes have been involved in the evolution of the routines? Where have these processes taken place? What has triggered these processes? Furthermore, we shall also look more closely at the implications of these learning processes, in addition to the implications for learning following the break in the relationship itself.

6.3.1 Changes in the routines

The price negotiation routine

In an earlier section it was shown that the price negotiation routine in the relationship between WWD and Supplier A was relatively standard and stable for both parties. As with all of WWD's other main suppliers, negotiations used to take place once a year during WWD's annual supplier meetings. Prices were normally negotiated and agreed for one year at a time. The organisational business units that were involved in the negotiations, had often been involved for several years, and the parties, therefore, knew each other very well. As such we may say that an exploitation of existing capabilities took place, resulting in specific ways of interacting during the negotiations. However, there were some changes in these interfaces as well in terms of new persons joining the negotiations and others leaving. For example, at WWD the procurement manager of welding at WWD took over the responsibility of the relationship and hence the negotiations in 2002. Thus some diversity was brought into the negotiations. A new on-line learning process took place as the parties now involved in the negotiations

came to know each other. It was noted by Supplier A that the negotiations became tougher after this new person joined the negotiations.

In 2003 WWD decided to stop the annual autumn meetings. Experience showed that it was increasingly difficult to reach agreements on price based on these meetings only. This was also the case in the relationship between WWD and Supplier A. In the last meeting before Christmas 2002, the parties were not able to reach an agreement. The parties had also problems in agreeing to a new contract. The negotiations continued until June the following year, when the parties finally signed a temporary agreement. The negotiations continued throughout the following autumn. Due to the evaluation process of the Asian market WWD continued to ask for a price decrease, and could refer to prices from alternative producers. However, Supplier A would not agree. The change in this routine during this period was as such two-fold. Firstly, the frequency of meetings increased. Secondly, WWD now used information from the Asian market as a basis for the negotiations. We may here talk about an on-line learning process taking place in the negotiations, where the involved parties used their respective knowledge to conduct and transform the negotiation routine, both in content and form. Furthermore the new negotiation routine provided both parties with new insights about each other and the relationship.

When WWD informed Supplier A about them being replaced in October 2004, Supplier A responded with requiring a price increase of the remaining products. WWD was interested in settling the business as soon as possible, and agreed to a small increase. There were however also further negotiations concerning the redundant stock that would be left at the time WWD stopped purchasing, however, the amount of this was less than anticipated. The parties never agreed on this issue. No further negotiations took place for the industrial products in 2005. However, since Supplier A continued to supply the gas distribution systems, new round of negotiations were expected to take place. We may argue that the temporary settlement of the price negotiation routine was a result of WWD's off-line explorative learning. This learning, facilitated by a combination of the benchmarking routine and the new sourcing strategy, triggered the replacement of Supplier A by the new Chinese supplier on parts of the total product range.

The meeting routine

The relationship between WWD and Supplier A started in the early 1980s, and the parties had throughout these years developed a specific way of interacting and meeting. Until 2002, the meetings between WWD and

Supplier A were mostly problem-oriented. There were few formal meetings between the parties beyond the annual supplier meetings. However, the meetings became more frequent throughout 2003, thus creating a more regular meeting routine. On average the parties now met once every second month. This was mainly to solve Supplier A's deliveries problems and the resultant low performance scores. As such the meeting routine was altered to meet more frequently in order to re-establish stability and efficiency in the operational routines, and the existing annual meeting routine was not sufficient in this respect. We may as such say that the change in this routine, in terms of increased frequency, was a result of on-line learning, where dissatisfaction with the existing meeting routine resulted in an increase in its frequency. In addition, dissatisfaction with operational routines resulted in a change in the content in the meeting routine, as these problems had to be solved. WWD's intra-organisational performance evaluation routine also played an important role here, as the evaluations provided information and a basis for off-line learning in the meetings, resulting in modifications and improvements of the operational routines.

The new meeting routine involved to some extent the same units, represented by the same persons as earlier, though often only the two responsible managers participated. The increased frequency of the meetings provided the parties with further possibilities to learn about each other, developing the relationship. As a result of the meetings both parties refined their views of each other, which formed the basis for the interaction in the meetings. The interface between these persons and their respective knowledge bases was exploited. Supplier A noticed that the atmosphere in the relationship changed after the new procurement manager came in. Previously the involved persons had also been personal friends and the meetings had, therefore, been more relaxed. Now, the climate was tougher. However, it was also recognised that this was good as it implied that Supplier A was forced to stay focused, and also forced to improve.

Throughout 2003 the meetings primarily concerned problems with the deliveries. However, other issues were also discussed, including market developments, the products, and WWD running a medical products campaign of products supplied by Supplier A. Although the responsibility for these medical products had been transferred to other units within the organisations, they were still often discussed as all operational issues were handled in these meetings. Problems affected both the industrial and the medical products, and as such the manager responsible for medical products at Supplier A often attended the meetings.

In addition to the responsible managers on the industrial products and other managers from each party, product-technical personnel were also sometimes involved. Another reason why the medical products would be discussed in these meetings was that the same product manager was responsible for both the industrial and medical issues. He sometimes participated in the meetings. In this way more variety was included into the routine, enabling exploration of new ideas and knowledge. We may say that the meetings between the parties enabled the establishment of a partner-specific knowledge. As the parties had engaged in solving various problems and also in the preparation of a campaign throughout the years, a routine for how to handle recurring issues had been developed. For example, WWD re-shuffled the stock from time to time, enabling better cash flow. This also involved the suppliers, as their stock had to be adjusted, partially affecting WWD's buying pattern. In the relationship between WWD and Supplier A, there had been several such projects, which could be considered as being a high-level routine at WWD. This knowledge then became inter-organisational as Supplier A would often be involved in such re-shuffling projects.

The discussions about the delivery problems resulted in several attempts to improve the operational routines. This was done both directly by the involved parties, such as the adjustments of the order confirmation, but also in each of the parties' sub-routines. This off-line learning was based on ideas from each party as well as ideas developed together in the meetings. In addition, this learning process was based on problems faced on-line by each party. The learning in these meetings was most of all exploitative in character, in the sense that it aimed at improving the existing routines and the existing resource structure involved in them. Supplier A often complained that many of their suggestions of changes were turned down by WWD, especially with regard to changes in the products. WWD on the other hand, argued that this was because their customers were conservative and that the products worked well as they were. The same was evident with regard to discussions about direct deliveries. Supplier A suggested several times that they could deliver directly to WWD's other sites and customers. WWD were also interested in this, however, they kept arguing that first the delivery routine into Rotterdam had to work satisfactorily. Besides, WWD's existing resource structure was centred on the IDC unit, and it would be difficult to alter. This was not only because of the physical structures but also because of the IDC's position. However, Supplier A did deliver some of the medical products directly to Miami. This had been agreed on at the very beginning, when Supplier A first started to supply WWD with such of products. In 2003 the parties agreed after lengthy discussions that Supplier A should start delivering industrial products directly to WWD's site in

Hamburg. This was cancelled due to the break in the relationship. As such a further exploration of a new delivery routine was never set out in practice.

When WWD decided to go for the Chinese supplier, the meetings with Supplier A concerning the industrial products declined in frequency. The frequency increased again when Supplier A was informed about being replaced since the parties had to settle the business. The parties discussed the need for operational changes, especially with regard to the remaining stocks. There were also some discussions about new opportunities. For example, Supplier A suggested that they could continue to supply some of the products to WWD's local sales offices if required. WWD was also interested in this, as there was a question of how the local sales force and customers would react to the products from China. Such products were still perceived as being of lower quality. Despite some complaints in the beginning, it turned out that there was no need for Supplier A's products. The new products from China were accepted by WWD's customers. Hence, the meeting frequency declined in the beginning of 2005. Similar to the price negotiation routine we may say that this change in the meeting routine was not a result of dissatisfaction with the routine itself, but rather because of WWD's off-line explorative learning. Nevertheless, in mid 2005 a new safety requirement of the gas distribution systems was introduced, requiring WWD and Supplier A to enter into new discussions about ways of solving these. In addition, it had been difficult for WWD to agree with the new Chinese supplier for these products. As such Supplier A continued to supply WWD with these systems throughout 2005, hence creating new possibilities for learning.

The ordering routine

The ordering routine in the relationship between WWD and Supplier A had evolved through two decades of interaction. The routine was relatively standard and stable, however, some modifications and adjustments had been made. For example, when staff members left the respective companies, some disturbances occurred to the routine, requiring improvements. In 2003, the operational staff member responsible for the WWD orders at Supplier A went on leave for one year. A new person was hired to handle these orders. However, as nothing was documented, she had to learn the routine. The IDC staff soon complained about the slow handling of the orders and the confirmations, which had also been a problem earlier. The expeditor in Rotterdam often had to chase the confirmations. The responsible procurement manager was informed, and he took it to the meetings with the sales manager at Supplier A. Here the problem was discussed and resulted in

some modifications in the order confirmation sub-routine. Among other things it was decided that Supplier A was required to send the confirmations within 72 hours.

Though many of the adjustments of the ordering routine were discussed off-line, the routine changed as a result of on-line learning. The experiences gained by the operational staff members when performing the routine were communicated with the responsible managers. In addition, the operations also themselves discussed the problems. For example the operational staff at Supplier A in Malmoe went to Rotterdam to discuss with their counterparts at the IDC. This resulted in a list of actions being developed among others specific days for sending the purchase order were decided. This was in order to adhere to both parties' time schedules. If we look at the changes in the ordering routine, they were incremental and aimed at exploiting the existing resource structures comprising the routine. They were mostly concerned about matching the business units and the staff performing the routine and the physical resources in the best possible way to ensure a smooth exchange process.

After the break in the relationship, the ordering of most of the industrial products slowly terminated, but at a much slower rate than predicted. The routine itself stayed the same, although there were some problems in the break up period. When WWD informed Supplier A that they had been replaced, an estimate of the products required, was provided. However, as WWD had problems with the Chinese supplier in terms of late deliveries, and also difficulties in reaching an agreement on the gas distribution system, they ended up purchasing more from Supplier A than first expected. Apart from these problems, the ordering routine worked quite well due to the various improvements that had been made earlier. Supplier A had also implemented a new ERP system. This contributed to the some problems in the beginning, but soon proved beneficial both in terms of overview and control. The main changes in the ordering routine after the break were hence mostly in terms of amount of goods being ordered, and hence the change was of a quantitative type.

The delivery routine

Similar to the ordering routine, the delivery routine in the relationship between WWD and Supplier A had evolved over the years, resulting in some adaptations. It had nevertheless been relatively standard and stable. If we look at the routine before the break in the relationship, the most important change in the delivery routine was triggered by Supplier A's low

performance scores. WWD registered its most important suppliers' delivery performance at the IDC in Rotterdam. It was based on the time of the deliveries being booked in. In 2001, they began to evaluate these scores more carefully. It turned out that Supplier A did not perform as well as expected, and the delivery routine did not meet the specified level (95%) of on time +/- 2 days deliveries.

Several actions were taken to improve the routine. Firstly, the communication as well as the sub-routines between Supplier A and its producing sister company were streamlined. The production unit was supposed to replenish the stock at Supplier A automatically. However, this was not done properly, and a staff member in Malmoe was appointed to ensure that the WWD products were replenished when needed, and not rely on the automatic system. In addition, WWD and Supplier A agreed that there should be stock for two months of WWD's products in Malmoe. Another reason for the problems was the fact that WWD and Supplier A operated with different shipping dates. While Supplier A used the date of the shipment leaving Malmoe on the confirmations, WWD used the date of arrival of the goods as a basis for their evaluations. Hence, Supplier A would always be late and score low as to punctuality. The parties finally agreed to use the date of arrival. Another problem turned out to be that the goods was often not booked in immediately on arrival at the IDC. Hence, Supplier A would get a score, which did not reflect its actual performance. According to the warehouse staff, this was because of size of the shipments arriving. As a result, the parties agreed that Supplier A should deliver twice instead of once a week. The warehouse staff at the IDC would thus get a better overview of the goods and be able to book it in earlier.

The changes in the routine were both triggered by the performance evaluations and by operational staff members at the IDC facing problems with late deliveries. Some of these problems were solved as a result of initiatives from the operational staff members, suggesting ways of improving the delivery routine. This on-line learning, however, was often communicated between the parties via the commercial level. Some problems were also solved and changes initiated off-line as the responsible managers at the commercial level met. The changes in the delivery routine were further of an exploitative type, where the improvement efforts were directed towards utilising the existing routines and the resources involved.

After the break in the relationship between WWD and Supplier A, the delivery routine, similar to the other routines, was supposed to be used for only the medical products. However, WWD's new Chinese supplier was initially unable to deliver the products on the agreed dates. This meant that

from the time Supplier A was informed about the decision, it took several months before WWD stopped buying from Supplier A. In addition, WWD and the Chinese supplier had problems in agreeing on the gas distribution systems. An agreement was not reached until the end of 2004, after which a period of testing had to take place. In the meantime, WWD had to buy these systems from Supplier A. Supplier A had been advised they would be replaced as a supplier of the gas cutting and welding equipment and the regulators at end of January 2005 and as of the gas distribution system a few months later. Supplier A, therefore, reduced the stock of these products and systems. As WWD continued to buy, however, problems with deliveries occurred once more, requiring a new on-line learning process in order to re-establish the routine.

In the meetings between WWD and Supplier A concerning the settling of business, Supplier A suggested that they could perhaps continue to offer some of the products to WWD's local sales offices, if needed. This would require the establishment of a new delivery routine, with new resource interfaces and hence exploration of new combinations between Supplier A and the local offices. However, the local sales force was quite satisfied with the Chinese products, even though there were initially some complaints. There was consequently no need for Supplier A's products. Another issue being discussed by WWD and Supplier A was the new safety requirements for the gas distribution systems. Because of this new requirement, WWD continued to buy these systems from Supplier A, and further learning relating to finding a solution to the requirements took place.

The invoicing/payment routine

The invoicing/payment routine in the relationship between WWD and Supplier A was a standard routine. There were few changes throughout the years. It was nevertheless highly recognised that the routine did not work very well, as WWD would pay on average two weeks too late. This was, however, not specific to the relationship with Supplier A. The main problem was the distribution of invoices internally the IDC. The warehouse staff would manually give the invoices to the financial department for registration into the system, and where they remained until the order has been booked in. There was a number of problems with this routine. One attempt of improving the routine in the relationship with Supplier A was the agreement that Supplier A would deliver specified invoices. Earlier the invoices were for the total sum of the shipment. Now each of the product items including price, were specified and WWD's financial department could consequently

register the invoices, without having to look up the prices and compare them to those specified on the order.

Similarly to many of the changes in the other operational routines in the relationship, on-line problems were also in this routine solved by off-line exploitative learning. Despite the changes, however, the payments continued to be late. This was because the shipments were not booked in immediately on arrival at the IDC, and hence, payment would be delayed. WWD acknowledged that it had to improve their handling of the invoices, by utilising the ERP system more effectively and by tightening the interfaces between the internal units. However, only minor changes took place, and the ERP system was not further utilised. After the break in the relationship between WWD and Supplier A, the routine continued in a similar way as before, except from fewer products being paid for.

We have in this section looked at how the various routines and the resources in the relationship between WWD and Supplier A evolved. The analysis has been based on the questions posed in the beginning of the section. Different learning situations have been identified, and we have analysed how they have taken place. In the following section, implications of the various change and learning processes in the relationship will be further analysed.

6.3.2 Implications of changes in the routines and the break in the relationship

If we look at the various routines and resources in the relationship between WWD and Supplier A and the way they changed, where can we find the imprints of these changes and learning processes? We are here interested in whether the processes were local to the individual routine, or if we may identify implications of this learning for other routines in the relationship or for other routines in other relationships to which the relationship between WWD and Supplier A was connected. Similarly, we may ask what were the learning implications of the break in the relationship itself?

Imprints of changes and learning in the routines

If we look at the price negotiation routine, this routine changed in several ways throughout the years in terms of increased frequency and switch of responsibility. In addition, during the last years WWD was able to use information from the Asian market as a basis for the negotiations. The

increase in frequency was due to the two parties being unable to reach an agreement in the annual meeting in 2002. However, this was a general trend as WWD experienced the same difficulty with many of its other suppliers. Thus, this change concerned most of WWD's price negotiation routines with its suppliers and was thus not limited or attributed to learning in the routine itself. The same is evident for the switch in responsibility. While this can be seen as a trigger to the increased frequency of the negotiation routine, as the new procurement manager was enthusiastic about using the new sourcing strategy, it was neither specific to the relationship with Supplier A.

Nevertheless, it was noticed earlier that the parties revised their views of each other during this period of continuous price negotiations. While Supplier A considered the climate as becoming tougher, WWD considered Supplier A to be inflexible. The change in this routine further affected other routines in the relationship. WWD were open about their search for a new supplier in the Asian market in these negotiations, and Supplier A were accordingly very concerned about improving their operational routines in order to compete. Supplier A knew that if their delivery performance scores continued to be unsatisfactory, WWD would have a stronger reason to find a new supplier, and also to demand further price decreases in the negotiations. On the other hand, Supplier A's reluctance to give in on the price issue inspired WWD to search in the Asian market, and finally to establish the new relationship with the Chinese supplier. Hence, as a consequence of the price negotiation routine, not reaching an agreement also affected other routines in the relationship (the operational routines) and other routines in other relationships (WWD's new relationship with the Chinese supplier).

As to the meeting routine, an interesting aspect is the way it worked as a trigger for changes in other routines. It may thus be considered a high-level routine. It is not the changes in the routine itself that are interesting here, but the effects of what was learned in this routine. The actual content of the meeting routine and the issues discussed turned out to affect other routines both within the focal relationship and in other relationships. Firstly, problems concerning the operational routines in the relationship were discussed in the meetings, resulting in various changes. Next, the discussion also triggered changes in the routines in the relationship between Supplier A and its sub-suppliers. It may also be argued that the change in the meeting routine itself affected other routines in other relationships. For example, the increased frequency implied that less time was left for WWD's other supplier relationships within the welding product range.

Looking at the operational routines in the relationship between WWD and Supplier A, we find learning that was both specific to the particular routine,

as well as learning that propagated to other routines and relationships. One example was of a change that was specific to one particular routine, was the specification of the invoices. This was done in order to enable WWD to pay in time, which had been a problem. Several efforts were made to improve this, among others the specification, which made it easier to check the invoices. However, most of the changes in the routines in this relationship affected other routines in the relationship as well, due to the interrelatedness of the operational routines, such as the changes to specific days of ordering in order to improve the deliveries, and the change from one to two deliveries per week, leading to improvements in the booking-in of goods and consequently improvements in the invoicing/payment routine. Some of the changes also had implications for routines in other relationships. For example, the agreement that Supplier A should have two months stock of WWD's products implied that the delivery routine between Supplier A and the sub-suppliers had to be adjusted. Supplier A also acknowledged that the improvements that were made with regard to the ordering and delivery routines, were not wasted, despite the break in the relationship. Firstly, the improvements would benefit WWD when it concerned the medical products and the remainder industrial products. Secondly, they would also benefit other customers, as the problems were to some extent of a general nature. Hence, as we see, while learning resulting in changes in the operational routines was sometimes local to the particular routine, in other situations it had implications for other routines and other relationships.

Learning implications of the break in the relationship

What were the implications for learning following the break in the relationship between WWD and Supplier A? Firstly, the break in the relationship may be seen as a result of WWD's explorative learning behaviour. WWD's benchmarking routine combined with the new sourcing strategy facilitated this change. By changing focus from long-term relationships with European suppliers to new relationships in China, WWD introduced variety in its supplier relationships and inter-organisational routines. This learning had profound effects on the relationship between WWD and Supplier A. It resulted in the break in the relationship, which affected some of the routines in qualitative as well as quantitative ways.

The break in the relationship implied that much of what had been learned in the relationship and the relationship-specific knowledge was now redundant. Throughout the 20 years of interaction, the two parties had learned about each other and how to use and combine the resources involved. A relatively stable and smooth exchange process was in place (despite some problems in

recent years) enabled by the various routines. Much time had been used to create stability and to exploit the existing resource combinations. This had further provided experiences about outcomes of the various routines, and hence a basis for evaluating the efficiency of the routine and need for any improvements. Despite the fact that the interaction between WWD and Supplier A had been standard and relatively stable both at the commercial as well as the operational level, changes had occurred and adjustments made in order to improve the routines. These were especially related to the problems during the past couple of years, where the parties had worked hard to improve the various routines. However, though these learning efforts seemed a bit wasted following from the break, the knowledge could be used in the parties' other relationships. For example, Supplier A noted that the various improvements in its sub-routines could benefit other customers, as well as WWD. In addition there was still a relationship relating to the medical products and also to the remainder of the industrial products, i.e. the gas distribution systems.

The relationship-based knowledge that the parties had developed during their interaction was now however redundant. This knowledge concerned how different problems were solved and the handling of various projects, such as campaigns. However, similar to the other knowledge gained in the relationship, it is likely that some of it could be applied in the parties' other relationships. Even the dissolution process in the relationship could possibly provide experiences, which both Supplier A and WWD could use in their other relationships. There was some indication that the dissolution process itself had turned into a routine at WWD. The experience gained during the SWOP-project some years earlier, where one of the large suppliers on welding products was replaced, was now used in the dissolution process with Supplier A. WWD had, for example, been very concerned about ensuring a smooth overlap between the stocks of old and new products. Following the SWOP, WWD had experienced an out-of-stock situation, and wanted to avoid a similar situation in this new termination process.

Yet another important implication of the break in the relationship was that it enabled WWD to establish a new relationship. A new supplier relationship could contribute to new knowledge for WWD. As new information and knowledge were made available, new learning possibilities occurred. Firstly, the establishment of the new relationship provided WWD with valuable experience, which it could possibly use later to establish similar relationships in China. Furthermore, the break could represent an opportunity to "get rid of" a relationship that was no longer beneficial to the company. This is not to say that the relationship between WWD and Supplier A was negative. However, the parties had been doing business for over 20 years, and it was

recognised by both that the full potential of the relationship had not been very well utilised. On the other hand, in order for learning to take place, stability is needed. By switching suppliers regularly, WWD's possibilities for learning were likely to be weakened.

Similar to WWD, the break also provided Supplier A with the possibility to create new relationships, as some of their capacity was now released. In addition, more time could be used on the remaining customer relationships. The change would presumably motivate Supplier A to seek new customers and hence new possibilities for learning. For example, it was discussed that Supplier A now could sell the products previously being exclusive to WWD to other customers, including WWD's competitors. As such Supplier A had the opportunity to exploit their existing resources in other relationships.

The break in the relationship was conducted in a fairly positive atmosphere. WWD was interested in settling the business as quickly as possible, and Supplier A was concerned about saving as much of the relationship as possible. Apart from some disagreement about the payment of the remaining products, both parties emphasised that they did not want to destroy future possibilities for co-operation. As a result, the parties started new discussions in the autumn of 2005 about technical solutions to the new safety requirement of the gas distribution systems.

In this section imprints and implications of various change and learning processes in the relationship between WWD and Supplier A have been discussed. It turns out that many of these processes propagated to other routines in the relationship, as well as to routines in other relationships to which WWD and Supplier A were connected. Few of these processes were only local to the particular routine where they were first initiated. In addition, we have looked at the implications for learning following the break in the relationship itself. The break implied that some of the knowledge that the parties had developed together, manifested in for example routines, was now lost. However, some of the knowledge could possibly be used in other relationships. In addition, the break meant that the parties could enter into new relationships, creating new possibilities for learning. Furthermore, looking at the break, it did not cause the severe implications first expected. Most of the routines remained, changing merely in a quantitative manner.

6.4 Discussion

In this chapter the relationship between WWD and Supplier A and the routines involved, have been analysed based on the research issues proposed in Chapter 4. The aim of the analysis has been to see how learning has been reflected in the relationship. The relationship was first analysed based on the three relationship characteristics identified in Chapter 4. Emphasis was put on the type of relationship, including an analysis of the routines and resources used and combined in them before and after the break in the relationship. Furthermore, these routines and resources were analysed in terms of the degree of adaptation in them. Finally, the relationship context was analysed. Together this provided an understanding of the relationship and the resources involved in the various routines. The routines and the resources in the relationship between WWD and Supplier A were further investigated in terms of how they had evolved before and after the break. The various learning processes involved here were described in terms of whether they attempted to exploit existing routines and combinations of resources or whether they explored new possibilities. In addition, they were also described in terms of whether they took place on-line, that is to say, by those performing them, or off-line, by units not engaged in the immediate performance of the routines. Triggers were also identified. In the final section, the imprints of these changes were identified in addition to the learning implications of the break in the relationship itself.

What does this case then tell us about learning in business relationships? The case illustrates that learning is an important aspect of stable and mature relationships as well as developing relationships. Perhaps there is no such thing as a stable relationship. Instead relationships go through different stages of development, triggered by various incidents. It seems reasonable to characterise this relationship as a low-involvement relationship, since it entailed standard routines and resource interfaces. However, the two companies knew each other very well and the bonds between them had been close. Though there had been periods with little contact beyond the day-to-day operational routines, the interaction increased substantially in the last years due to recurring problems. In order to solve these problems, the ties between the parties were strengthened. However, simultaneously the relationship and the actor bonds were negatively influenced by these problems and to some extent weakened. Nevertheless, given the continuous need for adaptations and improvements in the routines and resource interfaces, it seems reasonable to argue that this relationship required a high degree of involvement, at least in certain periods.

The case further shows that changes in a relationship, such as the break in this relationship, are triggered by a mix of learning processes endogenous to the particular relationship and exogenous ones. Firstly, the break in the relationship was triggered by WWD's increased use of benchmarking in addition to the new sourcing strategy. This was not primarily due to the relationship with Supplier A, but to a general practice within WWD as a means to cope with lower profits. However, the problems in the relationship with Supplier A further encouraged WWD to apply the benchmarking routine more, finally leading to the establishment of the new relationship with the Chinese supplier. The case also shows that learning in relationships is related to both how intra-organisational learning processes trigger changes in the relationship and the inter-organisational routines, and also that inter-organisational learning in the relationship may lead to changes in each of the parties' intra-organisational sub-routines. WWD's benchmarking routine, for example, affected the price negotiations with Supplier A and eventually contributed to the break in the relationship. Furthermore, discussions in the meetings between the parties sometimes resulted in modifications to the products, and hence influenced Supplier A's sister company's production routine. While the learning process in the relationship between WWD and Supplier A was often triggered by problems experienced on-line, the solutions to these problems were primarily developed in meetings at the commercial level. There was however on-line learning as well, for example where the operational staff themselves agreed on which days WWD should send the orders. Nevertheless, the more profound changes were initiated and developed off-line at the commercial level.

In this case it seems as if learning was mainly triggered by needs to improve deficient operational routines. There are few examples where the parties utilised learning possibilities beyond incremental improvements in existing ways of co-ordinating the exchange flow. Hence exploitive learning behaviour was performed. An exception was the discussions about a new distribution pattern. The actions agreed to, however, were never implemented.

Finally this case also shows that what happens in one relationship often triggers a change and need to learn in other relationships. The changes in the various routines in the relationship between WWD and Supplier A left imprints in both the routine itself, as well as affecting other routines in the relationship and routines in other relationships. Furthermore, the break in the relationship triggered changes in routines and learning outside the boundaries of the particular relationship. Firstly, this concerned WWD's new relationship with the Chinese supplier. New routines were established and hence possibilities for learning in another relationship. However, the break

also affected Supplier A's relationship and routines with the Norwegian sub-supplier. Although it turned out that WWD continued to buy the gas distribution systems from Supplier A, Supplier A and the Norwegian sub-supplier were encouraged to find new ways of utilising the resources in their relationship. Hence, the case shows that learning is not always deliberate. Supplier A had to learn and adapt to the change initiated by WWD.

Chapter 7. Change within a relationship: Implications for routines

7.1 Introduction

In this chapter the second case in this thesis, concerning the relationship between WWD and Supplier B, is presented. Similar to the first case, the same routines that were identified in Chapter 3 are used to give an overall description and investigation of the relationship. The case centres on a change within the relationship, due to a change in the commercial contact pattern and tough price pressures in the market. The change was profound, as within a two years the relationship went from being considered as being very good, to as WWD observed, “not a relationship anymore”.³⁶ In the following sections we shall see how this change affected the relationship, by looking at implications for the routines involved in the relationship.

7.2 The relationship between WWD and Supplier B

The relationship between WWD and Supplier B was a result of the SWOP project run by WWD in 1999/2000. At that time all of WWD’s main suppliers were asked to provide new quotes on all the products they supplied. These quotes were then compared to the prices of other producers. WWD’s existing supplier on welding consumables and welding machines had been one of WWD’s suppliers for approximately 30 years. However, WWD felt that the supplier was no longer responding to their needs and requests, and thus decided to change to Supplier B for welding consumables and to another supplier for welding machines. It was difficult to find good alternatives to the existing supplier of consumables. The market research showed that there were only three possible suppliers, including the existing one, able to offer the total range. Supplier B was chosen, and a contract signed in May 2000. The companies had not done any business together before, but there had been some contact between the responsible procurement manager at WWD and the key account manager at Supplier B.

Approximately 90% of the welding consumables supplied by Supplier B to WWD were welding electrodes. According to one of the respondents at

³⁶ Interview no. 22 in Appendix 1

WWD, the electrodes were actually what WWD was known for within the welding product range. These products were hence very important to WWD. With a few exceptions, Supplier B was already producing these electrodes, at the time WWD started to buy from them. The electrodes were as such standard. However, the electrodes WWD purchased were specifically adapted for moist conditions of a maritime environment. WWD wanted electrodes that were as similar as possible to their existing ones. Most of the products that WWD delivered to customers were WWD branded. Hence the new electrodes needed to match the existing specifications. In 2004, the total purchase of welding electrodes constituted approximately 10 MNOK per year. Supplier B was a large supplier to WWD, and hence considered important by WWD. On the other hand WWD was not a large customer of Supplier B, but represented a different market segment, which Supplier B wanted to keep.

Until 2003, the relationship was characterised as being very good by both WWD and Supplier B. In the beginning of the relationship, there had been a serious incident relating to the quality of the electrodes. The electrodes did not work properly, and WWD received many complaints from its customers. It turned out that Supplier B had moved the production of the electrodes from Sweden to Hungary, and in the transfer important production process knowledge was lost. According to WWD, Supplier B handled these problems very professionally, and together they solved the problems in the best possible manner. As one of the procurement managers at WWD noted “this is a good example that a crisis can bring people together”.³⁷ The good relationship has been primarily attributed to the key account manager at Supplier B. In addition to being very professional, the personal chemistry between him and the responsible procurement manager at WWD was very good. The relationship was also characterised by mutual trust.

In 2003 the key account manager at Supplier B left the company, and several new persons were involved during the next years. Because of the loss of the original contact, the relationship changed. According to WWD, the relationship deteriorated rapidly, and the communication between the two companies at the commercial level declined dramatically. This was to some extent a personal matter, but also influenced by tough price pressures in the market, including a substantial increase in steel prices. From focusing on co-operation and efforts to improve business, the two parties were now primarily conducting price negotiations at the commercial level. Despite the changes at this level, however, the operations remained more or less the same.

³⁷ Interview no. 2 in Appendix 1

7.3 Interaction and routines in the relationship

This case takes as its starting point the change in the relationship between WWD and Supplier B following changes in the commercial contact pattern and increased price pressures in the market. In the next sections the relationship will be investigated by thoroughly describing the routines in the relationship. We shall see how these routines have evolved before and after the change. There are many routines involved in this particular relationship. However, similar to what is stated in Chapter 3 and also in the previous case in this thesis, the most important ones seem to be the price negotiation and the meeting routines at the commercial level. At the operational level the ordering, the delivery, and the invoicing/payment routines are important. There are many sub-routines at each end as well, which are important to the relationship. The sub-routines involved at the supplier's end of the overall routines routine will be included in the description, while the sub-routines involved in the processes out of WWD's IDC in Rotterdam, will not be included. Table 7.1 illustrates the routines during the two periods, according to what they concerned, how they were performed, and who were involved.

Table 7.1 Routines involved in the relationship between WWD and Supplier B

Routines	Before the change	After the change
<i>Price negotiations</i>	Negotiations of welding electrodes	Negotiations of welding electrodes. From 2004, only the red range
	A three-year agreement signed in 2000, based on comparisons with alternate suppliers	New agreement signed in 2003. Additional negotiations in 2004 and 2005 because of increased raw material prices.
<i>Meetings</i>	Procurement manager and corporate manager at WWD and key account manager at Supplier B	Procurement manager and manager of M&R unit at WWD and new contacts at Supplier B
	Discussions in order to establish and maintain the relationship	Discussions about Flankline, price
	Once a month. Otherwise when needed usually in Rotterdam	Meetings when needed usually in Rotterdam
<i>Ordering</i>	Procurement manager, corporate manager and product-technical staff at WWD and key account and product-technical staff at Supplier B	Procurement manager and manager of M&R unit at WWD and new contacts at Supplier B
	Ordering of welding electrodes, both the red and the blue range	Ordering of welding electrodes. From 2004, only the red range
	Once every week from IDC to Supplier B's Dutch unit.	Once every week from IDC to Supplier B's Dutch unit.
<i>Delivery</i>	Operational staff at the IDC and at Supplier B's Dutch unit	Operational staff at the IDC and at Supplier B's Dutch unit
	Delivery of welding electrodes	Delivery of red range of welding electrodes
	Twice a week from Belgium to Rotterdam	Once a week from Belgium to Rotterdam and once every two weeks from Hungary to Rotterdam
<i>Invoicing/ payment</i>	Operational staff at the central warehouse in Belgium and at the IDC	Operational staff in Hungary and the warehouse in Belgium and at the IDC
	Invoicing and payment for welding electrodes	Invoicing and payment for welding electrodes. From 2004, only the red range of the electrodes
	Invoices of each shipment I to IDC from Supplier B's Dutch unit. Agreed payment within 30 days from received invoice, but 45 days on average.	Invoice of each shipment to IDC from Supplier B's Dutch unit. Agreed payment within 30 days from received invoice, but 45 days on average.
	Operational staff at the Dutch unit, warehouse staff and financial department at the IDC and financial department at Head Office	Operational staff at the Dutch unit, warehouse staff and financial department at the IDC and financial department at Head Office

Price negotiations

Until 2003 WWD conducted price negotiations during the annual supplier meetings every autumn at the Head Office in Oslo. Prices were usually agreed for one year. For many of the suppliers, these negotiations constituted their only formal meetings with WWD. Prices used to be discussed during the last part of these meetings. This was not the case with Supplier B. The first price negotiations between the two parties were conducted during the SWOP project in 1999/2000, where Supplier B competed with the existing supplier and another producer of welding consumables. When WWD chose Supplier B, further negotiations followed. The price negotiations were tough, and according to respondents at WWD, the parties learned much about each other during these negotiations. When WWD and Supplier B finally reached an agreement, the prices were set for a three-year period. A long-term agreement was considered advantageous, as the price negotiations put the relationship under a lot of pressure. Prices were as such to be negotiated again simultaneously with the renewal of the contract in 2003. The original prices were discussed and decided upon based on comparisons with the other alternatives from the SWOP, and also based on general tendencies in the market, such as the price of raw materials. It is important to note that the initial agreement did not take into account increases in the price of raw materials. Such increases could, therefore, not affect the price level throughout the contract period, beyond an agreed upon increase of 2%. During the first price negotiations, the responsible procurement manager of welding products and the corporate procurement manager at WWD and the original key account manager at Supplier B were involved.

At the end of 2003, WWD and Supplier B started the re-negotiation of prices. The original key account manager at Supplier B had left the company at the beginning of the year. In addition, WWD's corporate unit no longer existed, and the procurement manager responsible for welding products handled the negotiations himself. Two new persons were involved from Supplier B, one product manager and the director of the Benelux region. Besides negotiating prices of the existing products, the parties also had to agree on the prices for what was called the Flankline products. In 2003, WWD decided to start a campaign regarding welding electrodes. The electrodes supplied by Supplier B were originally of two kinds: one red range, consisting of high-quality electrodes, and a blue range, consisting of more standard electrodes. The Flankline-project implied taking out the blue range and replacing it with a cheaper one. This was done in order to gain market share, especially in the Asian market. WWD's strategy was to offer lower prices, despite the increased steel prices, which was now hurting

markets using steel as raw material. The Flankline products were supposed to be produced at Supplier B's production unit in Jakarta, Indonesia.

The contact between WWD and Supplier B had deteriorated substantially after the original key account manager left Supplier B in the beginning of 2003, and the persons taking part in the new negotiations had not had much contact earlier. According to WWD, the new contact persons were not very good at communicating WWD's requirements to Supplier B's organisation. Heavy discussions followed as a consequence. The main dispute concerned the alloy surcharges, the discussions concerning whether or not these prices should be included in the total price or kept separate from the basic prices. The price negotiations were primarily based on general tendencies in the market, such as the price of raw materials. The relationship itself influenced the negotiations. Both parties were interested in the continuance of the relationship, and the parties finally managed to sign a new contract and price agreements. However, according to WWD something was lost with the original key account manager. As a consequence, WWD intensified its search in the Asian market for an alternative. This was encouraged by the new sourcing strategy at WWD implemented in 2003, and aided by the benchmarking routine that had been developed during the SWOP.

Despite the fact that the parties signed a new three-year price agreement at the end of 2003, both for the existing products as well as the Flankline products, Supplier B informed WWD at the beginning of 2004 that they would have to increase the prices on all products. The steel prices had increased by 30% at the end of 2003, and Supplier B experienced heavy pressure from its steel suppliers. Approximately 65% of the welding electrodes are made of steel, and consequently the total production costs had increased tremendously. WWD were reluctant to accept any increases, due to the existing agreement. Lengthy and difficult negotiations followed in a meeting in March 2004. A new person had at that time been appointed by Supplier B to handle the relationship with WWD. This was the product manager at the Dutch unit. In addition, the marketing manager for the European region supported him. These were now involved in the further negotiations. The managing director of WWD's Maintenance and Repair (M&R) unit also participated as an observer. The parties in the end agreed that the prices would stay the same for the time being, but that WWD would consider a price increase in a few months, given that Supplier B provided open books on its raw material costs. In addition, WWD would buy the Flankline products from a Chinese supplier instead.

Both parties emphasised that they would not do anything to jeopardize the relationship. For WWD's part the situation was particularly difficult as it

was totally dependent on Supplier B for the supplies of the high-quality electrodes. A few months later WWD accepted a price increase. In return, Supplier B would pack the goods on special pallets. This was a new requirement (according to customs), and had caused a lot of extra work at the IDC in Rotterdam. Hitherto, WWD had needed to repack the big shipments from Supplier B on to these new pallets manually, and this was time consuming. The fact that Supplier B would use these pallets instead of the old ones was worth a lot to WWD, especially since these new pallets were also more expensive than the old ones. The new prices were set to the end of the year, when the parties would meet again to conduct further price discussions. The responsible manager at WWD stated later that he was in no doubt that Supplier B would have dissolved the relationship if they had not received this price increase.

In February 2005 new negotiations were held. The price of raw materials had continued to increase, and Supplier B requested yet another price increase. A new agreement was finally reached, being operative from June 2005. Contrary to earlier meetings the new key contact at Supplier B came alone to this meeting. According to the responsible procurement manager at WWD, this was beneficial, and although the price negotiations were difficult, the atmosphere was more relaxed than earlier. WWD noted that the continuous price negotiations affected the relationship negatively during these two years. The parties did not trust each other anymore. However, as WWD remarked it was a general tendency. Both WWD and the suppliers had become more concerned about prices, and in general it was much more difficult to reach agreements with suppliers than earlier.

Meetings

In the beginning of the relationship between WWD and Supplier B, the contact was frequent, and the two parties met regularly in order to establish the new relationship and to get to know each other. Both formal and informal meetings were held, as the two responsible managers were located close to each other. On an average the parties met once every month. After the processes were well established, the meetings became less frequent. However, the parties still met to discuss and exchange information about the current state of their respective organisations, such as markets and sales, products, and expectations for the future. In addition, ways of improving the operational processes and extending the business were discussed. For example, a joint purchasing project was initiated, implying that WWD and Supplier B would jointly buy welding accessories, using a professional purchasing company. Though operational problems were often solved on a

daily basis by those directly involved, the meetings were also used as an important problem-solving arena. Each of the contact persons received reports and feedback from their respective operational staffs. Based on this feedback, the parties would meet to solve the various issues. In addition to the two contact persons, the meetings also sometimes involved product-technical staff from each company. It was recognised that the relationship was very good, and this was mainly attributed to the good chemistry between the key contacts.

After the original key account manager left Supplier B in 2003, the contact at the commercial level deteriorated. Supplier B changed its contact persons several times, and the continuity was lost. Interaction was now basically problem-oriented. As there were few operational problems in the relationship, the contact, therefore, decreased in frequency. However, at the end of 2003, the contact frequency again increased. The main reason for this was the Flankline project, the re-negotiation of prices, and the overall contract. The Flankline project was to be launched at the 2nd quarter of 2004. The necessary preparations and actions were discussed with Supplier B, including the intention to discontinue the blue range products. The Flankline products were to be supplied from Supplier B's site in Indonesia to Rotterdam and also to WWD's sites in Singapore and Shanghai. The products were already being produced, but they had to be packed differently. Everything seemed to proceed according to plan until January 2004 at which time WWD received an e-mail from Supplier B, stating that they could no longer accept the agreed upon prices, neither for the Flankline products nor for the red range. WWD had expected this to happen, and had in the meantime found a Chinese supplier of these electrodes. Supplier B had to accept this. Given the situation, no further meetings concerning the Flankline issue took place after March 2004. The following meetings were instead primarily dedicated to price discussions, and the routines for price negotiations and meetings turned into the same routine in this period.

From mid 2004, there was little contact between WWD and Supplier B. According to WWD, the two companies were tired of each other due to the difficult price negotiations during the last years. The regular meetings between the two companies were as a consequence discontinued. As WWD remarked, their contact with suppliers was often very problem-oriented. Hence, when there was little communication, it usually meant that everything was satisfactory. However, with such an important supplier as Supplier B, this was not the case. Here almost no contact meant that something was wrong. WWD assumed that the supplier tried to keep the contact and the costs as low as possible. As the discussions between the two companies now primarily concerned price issues, keeping the contact low

was a good way to avoid any further disputes. WWD felt that they had tried to assist Supplier B by accepting the price increase in 2004, despite the contract and the agreed upon prices. However, WWD were not willing to risk that this would become a trend in terms of accepting changes to negotiated prices every time Supplier B wanted to.

By the end of 2004, the two companies had not been able to meet in order to discuss their relationship, and WWD felt that something had to be done. Due to all that had taken place throughout 2003-2004, WWD felt that there had been too many negative factors in the relationship. Nevertheless, WWD could not afford replacing Supplier B. This was mainly related to the quality of the red range electrodes, but also to the fact that Supplier B's prices were low. Purchasing the red range from China, for example, was not an issue. Hence, WWD had few alternatives to Supplier B. From WWD's point of view one possible way of getting the relationship on its feet again was to bring in new persons into the relationship. It was important to re-establish the dialogue.

In February 2005, the two parties finally met again, still primarily discussing price. However, direct distribution between Hungary and Rotterdam was also discussed. In addition, WWD informed of a campaign concerning welding products that was planned in autumn 2005. This would affect WWD's buying pattern. Given these two important topics, the parties agreed that the lines of communication had to be improved and that an effort should be made to re-establish the good relationship once existing between the parties. According to the responsible manager at WWD, this was the most relaxing meeting the two parties had had in years. The main reason for this was attributed to the fact that the two managers now knew each other better, and that the product manager from Supplier B also attended the meeting alone. Because of WWD's increased sales of welding products, it turned out that there was no need for the planned campaign. Other products were emphasised instead. However, WWD and Supplier B still had to co-ordinate the direct distribution from Hungary. The parties expected that this would not cause any problems and would require only a few additional meetings.

Ordering

As to the operational routines, the ordering routine constituted the first step in the exchange processes between WWD and Supplier B. It had been basically the same since it was first established. Both WWD and Supplier B considered the routine a standard routine, as it was relatively similar to the routines used for other suppliers and customers. The ordering routine worked

as follows: a proposal for each specific product group was created every night by the ERP system at WWD's IDC in Rotterdam. The responsible stock planner in Rotterdam evaluated the proposals the next morning to see if there were any needs for ordering. This had to be done twice a week for each product group. One of the triggers to a new purchasing order was if the stock level was below the fixed order point. In addition, the evaluation was also based on experience and knowledge about the welding electrodes, the Supplier B, and the sales pattern in the internal and external customer network. This meant that although the stock was below the order point, there would be other factors telling the planner to wait ordering, such as if the product was soon to be discontinued. WWD sent an order by fax once a week to Supplier B.

Product numbers, amount of products, the prices, delivery times, and the names of the contact persons at both WWD and Supplier B were stated on the order. One staff member at Supplier B's Dutch unit responsible for the WWD orders would receive and register the orders into the system. This person had worked with WWD since the beginning and was, therefore, experienced with WWD's buying pattern. After the order was registered, stock levels at the central warehouse in Belgium and prices of the respective products showed on the screen. The goods were then reserved and an order confirmation sent by fax to WWD giving the shipping date of the goods to Rotterdam. If WWD did not receive the order confirmation within the agreed upon time, usually 24 hours, the expeditor in Rotterdam followed up the order.

Despite the fact that the contact between WWD and Supplier B changed on the commercial level in 2003, the ordering routine remained virtually the same. The only thing that changed was that from 2004 the orders concerned only the red range of the electrodes. The ordering routine was standardised, and there were few problems. When problems occurred, the operational staff members themselves usually solved them. This resulted in only small adaptations to the routine, such as the days of sending the orders and the time of order confirmation. The routine hence continued to be standard and stable.

Delivery

The delivery routine was the next step following the ordering routine in coordinating the exchange process between WWD and Supplier B. The delivery routine was also relatively standard. However, Supplier B made some adaptations to WWD in terms of the information accompanying the

goods and how the goods were packed. In addition, the parties agreed on specific delivery schedules. The goods to WWD were shipped from Supplier B's production units in Sweden and Hungary via the central warehouse in Belgium to the IDC in Rotterdam. Twice a week, a shipment would arrive at the IDC. In 2003, the two parties started discussing the possibility of direct deliveries from Hungary to some of WWD's other European sites. However the plans for such changes were never implemented. This was primarily due to WWD's organisation not being ready for such changes. In addition, direct distribution was also discussed for the Flankline project. All the products to WWD had until then been produced at Supplier B's production units in Sweden and Hungary, from where they had been distributed to Rotterdam via Belgium. As Supplier B's production unit in Indonesia was meant to primarily produce the Flankline electrodes for the Asian market, possibilities for local distribution between this production unit and WWD's regional distribution centre in Singapore and Shanghai were discussed. As mentioned earlier, another supplier replaced Supplier B for the Flankline products. Hence, the plan for local distribution was never carried out.

The delivery routine worked as follows: when an order from WWD was received and registered in Supplier B's ERP system and the different products were reserved, pick lists were printed out in the central warehouse in Belgium. For goods in stock, the order was picked according to the lists. The lead-time of the WWD products was 7 days. Approximately 100 pallets, equalling two months supply, were stocked in Belgium. The goods were placed on pallets, each pallet containing only one type of electrodes following WWD's requirements. This differed from the routine of Supplier B's other customers. It also meant that the pallets needed to be repacked in Belgium and that they were not always full when shipped to Rotterdam. As part of the price negotiations in 2004, the parties also agreed that Supplier B should use special pallets for the WWD products. Due to new requirements, all of WWD's products had to be packed on heat-treated pallets. Instead of being repacked in Rotterdam, the parties agreed that the goods would initially be packed on such pallets in Belgium. Copies of the pick lists were included with the goods in pallet no. 1 for WWD's information and use. Next to every product number on the pick list the responsible staff member at the warehouse also wrote by hand the pallet number of the specific electrodes. This was a WWD requirement in order to save time when receiving the goods. When all the pallets were packed and the order completed, the pallets were weighed. This information, together with the pick lists and the order itself was then given to person responsible for the shipping, who in turn booked the transport. WWD received deliveries twice a week from Belgium.

In the beginning of the relationship, some serious problems occurred with the delivery routine, due to Supplier B moving production of the electrodes to Hungary, including both the blue and the red range of the electrodes. As the quality of the high-quality electrodes (red range) did not meet the specifications in the contract, a major operation to recall all the electrodes from WWD's customers followed. WWD accordingly requested Supplier B to move the production of the electrodes back to Sweden, and hence the goods was now delivered from two different sites. Following these initial problems, the delivery routine was soon well established with few additional problems. Supplier B scored on average high on the performance ratings according to WWD's evaluations. Adaptations were primarily minor ones.

As there were few written procedures, most of the knowledge concerning the delivery routine had been learned by those performing the routines. For example, the warehouse staff members handling the WWD goods, had to be familiar with WWD's special requirements, such as packing only one type of electrode on a pallet. Despite the climate at the commercial level deteriorating, the delivery routine remained the same. This stability may also be a result of decreased contact on the commercial level. Direct deliveries and the possibility of finding new logistics solutions were discussed earlier at the commercial level. However, as the meeting focus changed to concern only pricing, changes in the delivery routine were not top priority. Nevertheless in a meeting in February 2005, Supplier B suggested that the goods to WWD produced in Hungary should be sent directly to Rotterdam instead of via Belgium. The products produced in Sweden would still be distributed via Belgium. Supplier B would save money, as it had to pay for storage of the pallets at the central warehouse in Belgium. Consequently, the delivery routine would change slightly. Instead of two deliveries each week from Belgium, this would be reduced to one delivery in addition to a shipment from Hungary every second week.

Invoicing/payment

In the original agreement between WWD and Supplier B, WWD was required to pay for the goods within 30 days of receipt of the invoice. However, on an average it usually took 45 days. This was because WWD did not have a proper sub-routine for handling the invoices. The routine worked as follows: when the goods was ready to be shipped from Supplier B's central warehouse in Belgium, an invoice was created and sent by mail to Rotterdam. Here it was picked up by the warehouse staff and forwarded to the financial department in Rotterdam for registration into the ERP system. When the shipment was booked in, the invoice was automatically paid. Even

though the goods were ordered from and arrived in Rotterdam, it was paid by WWD ASA. This payment routine was similar to the routines used for most of WWD's and Supplier B's other suppliers and customers. In 2005 the routine was modified since Supplier B was facing tough price pressures. The parties now agreed to payment within 14 days rather than 30 days, however this was not effectuated immediately. One reason was that the new deadline was not registered in WWD's ERP system. In addition, there were still some problems with invoice handling at the IDC. Since the payments were based on the time the goods was booked, delays here would also delay the payments. After Supplier B complained, WWD made some efforts to improve the situation, by for example ensuring the correct times were entered into the ERP system. By mid 2005 the routine worked quite satisfactorily, though there were still some problems with the internal handling of the invoices at WWD.

7.4 Summary

This chapter has given an overall presentation of the relationship between WWD and Supplier B through a description and investigation of the routines involved. The case has focused on the change within the relationship following from the change in the commercial contact pattern and tough price pressures in the market, and the implications of this change for the routines. It was acknowledged that the change affected the relationship negatively. The change especially affected the meeting routine. The more operational routines remained relatively stable, however. A further investigation of the relationship between WWD and Supplier B will follow in the next chapter, where implications of the change in the relationship and the routines for the resources and learning involved will be discussed.

Chapter 8. Change within a relationship: Implications for resources and learning

8.1 Introduction

In the second case the change in the relationship between WWD and Supplier B is the main theme. The loss of the original contact person at Supplier B was seen as a major reason for the recognition that the relationship had deteriorated tremendously, at least at the commercial level. In addition, both parties faced tough price pressures in the market, leading to an increased focus on price. At WWD benchmarking and the new sourcing strategy were important means of coping with these pressures. It was recognised that the change in the contact pattern influenced the way the price pressures were handled in the relationship. The new contact persons for both parties did not know or trust each other, and as a result the price discussions affected the relationship negatively. The change had several consequences for the relationship between WWD and Supplier B; particularly the price negotiations and the meeting routine changed.

In this chapter the relationship between WWD and Supplier B will be further analysed based on an investigation of the relationship and the routines described in the former chapter. The aim is to see how learning has been reflected in this relationship. The analysis is based on the research issues proposed in Chapter 4. We shall look at the characteristics of the relationship, emphasising the type of relationship. The different resources and resource interfaces involved in the various routines before and after the change will be identified and described in terms of degree of adaptation. This will be further related to degree of involvement in the relationship. Learning in the relationship will then be investigated by analysing changes in the routines and resource interfaces both before and after the change. In addition, implications of the changes in the routines and the change in the relationship itself are outlined. The chapter ends with a discussion of the main findings.

8.2 Characteristics of the relationship

8.2.1 Relationship development stage

The relationship between WWD and Supplier B was established in 2000. In 2003 the relationship had reached a mature and stable stage in the sense that the exchange processes had been routinised and were working satisfactorily. The partners were, however, still interested in extending the relationship. A joint purchasing project was an example of this. Hence, while the relationship on one hand was stable and mature at this stage, other parts of the relationship were developing. The relationship changed during 2003 when the original key contact left Supplier B and the parties faced tough price pressures. This did not affect the established operational processes and routines of the relationship. However, the contact and interaction at the commercial level changed significantly. The relationship thus continued in a mature and stable way at the operational level but entered into a development stage at the commercial level, which now evolved in a new direction. The parties again had to learn how to work together. This was, however, difficult as Supplier B made several further changes in contacts.

There were some attempts made by WWD to further develop the operational processes, which implied that the relationship entered into a development stage at the operational level as well. For example, the Flankline project required the parties to sit down and discuss project implementation. This co-operation was terminated in the beginning of 2004 because of the price issue, and few other change attempts were made in the following year. The contact pattern stabilised itself at that time, and we may say that the relationship was in an overall perspective stable. In spring 2005 the parties began to discuss direct deliveries from Supplier B's production unit in Hungary and to Rotterdam. This implied that there was once again development at the operational level.

From the above we see that the relationship between WWD and Supplier B can be characterised as going through different stages simultaneously and that the development moved in cycles. Since the operational routines in the relationship have been relatively stable, it is reasonable to call the relationship mature. However, attempts to extend the relationship by including other operations such as the Flankline, involve development. The commercial level has also gone through cycles of stability and development. Hence, depending on the time of investigation and the levels being considered, different stages of stability and development may be identified.

8.2.2 Type of relationship

The type of relationship between WWD and Supplier B can be considered in terms of how closely connected and adapted the parties and the involved routines and resources were. Was this relationship a high or low involvement relationship? Before we take this question into further consideration, we shall identify which resources and interfaces were involved in the different routines. The description will focus on the routines and resources before and after the change in the relationship.

Resources involved in the routines before the change

The routines in the relationship between WWD and Supplier B included the use and combination of various resources. The most important product resources until 2004 were the red and the blue range of welding electrodes. These electrodes were produced at Supplier B's Swedish and Hungarian production facilities. Besides of these facility resources, other significant ones were the two parties' respective central warehouses in Rotterdam and Belgium, where the products were stored. These facility resources were important, as were the interfaces between them and the products. For example the locations in the warehouses where the electrodes were stocked had to maintain a certain temperature. Furthermore Supplier B's ERP system was also an important facility resource, co-ordinating the exchange between the production facilities and the warehouse in Belgium. Finally, WWD's customers' ships were key facility resources as the electrodes were used on board these ships. The most important business unit resources were WWD and Supplier B, represented by various persons such as the responsible manager at each party, product-technical staff, and operational staff at WWD's IDC in Rotterdam and at Supplier B's Dutch unit. In addition, Supplier B's logistics service provider transporting to goods into Rotterdam and WWD's customers were important business unit resources. These were all important resources in the relationship, as they possessed knowledge necessary to handle the relationship and the various processes and because they activated and used other resources in doing so. Finally, the relationships between WWD and Supplier B and the different persons were important resources, in addition to the relationship between WWD and customers.

The inter-organisational routines in the relationship were embedded in certain resource structures. In the following, each of the routines and the resources deployed with them are considered and illustrated in respective

figures.³⁸ If we look at the price negotiation routine, the negotiations concerned primarily the welding electrodes, and these product resources were as such indirectly involved in the routine since it is likely that the characteristics of the products affected the negotiations. For example, some of the electrodes were more complex ones, and there were not many producers actually producing them. The first round with negotiations took place during the establishment of the relationship, and the two business units did not know each other very well. The procurement manager of the welding products at WWD and the original key account manager at Supplier B handled them. We may say that the first negotiations were embedded in the interface between the two managers, being important resources in the routine. The chemistry between them turned out to be very good, and this influenced the negotiations positively. Hence, the relationship both grew out of the negotiations as well as further influenced the negotiations in a positive way. In addition to these managers, WWD's corporate procurement manager at WWD also participated in these negotiations. The most important resources directly involved in these first price negotiations can be illustrated in the following figure:

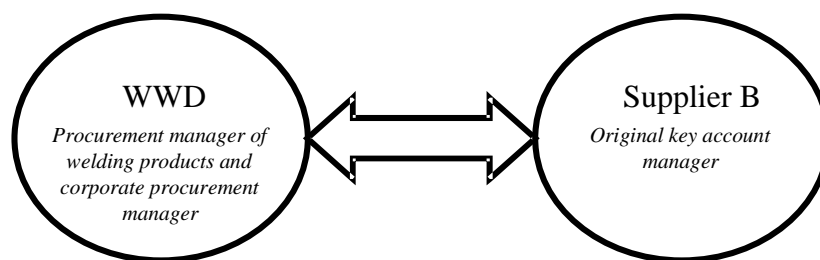


Figure 8.1 Resources in the price negotiation routine before the change

The meeting routine between WWD and Supplier B involved the same business units, represented by the same managers as those in the price negotiation routine. In addition, product-technical staff at both two parties often participated, such as the technical engineer and the product manager in the welding team at WWD. These persons were important resources for the meeting routine, as they brought their experiences and knowledge into the meetings. The routine was consequently embedded in the interface and the relationship between them. The meetings enabled their knowledge to be combined, whether it concerned the solving of problems or the development

³⁸ The figures use the same symbols as Figure 4.3. p. 67 presented earlier in the thesis, and the straight lines indicates interfaces between the resources.

of new ideas and solutions. In addition to these resources directly involved in conducting the meeting routine, other resources were also indirectly involved. The meetings concerned discussions about the use and combination of different resources, such as the products and Supplier B's production units. Hence, these resources constituted key topics of discussion in the meetings, and furthermore objects to change following these meetings. However, the resources directly involved in the meeting routine can be illustrated as follows:

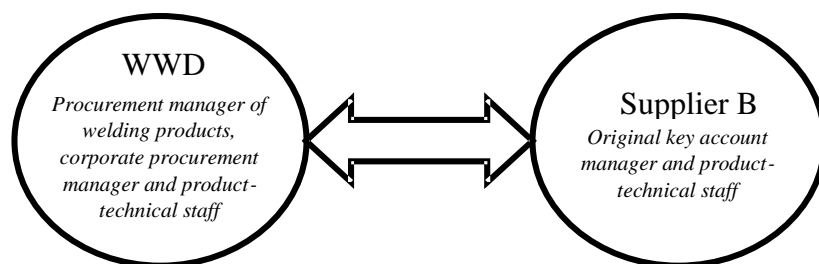


Figure 8.2 Resources in the price negotiation routine before the change

At the operational level, the ordering, delivery, and invoicing/payment routines included the use and combination of both organisational and physical resources. If we look at the ordering routine first, this routine was triggered by reports generated by the ERP system facility at WWD. One of the most important physical resources involved in this routine was thus this facility resource. The proposals were based on requests from WWD's network of internal and external customers, which then represented important business units involved in this routine. In addition, the ordering routine also involved other units, represented by various staff members responsible for issuing and handling the orders. These included the stock planner and the expeditor at the IDC in Rotterdam and the responsible operational staff at Supplier B's Dutch unit. Furthermore, Supplier B's ERP system was also an important facility resource, as it enabled Supplier B's two production units in Sweden and Hungary to view the order and hence plan production. In addition to these business units, the relationships between them were also important. The most important resources and interfaces involved in the ordering routine can as such be illustrated as in the following figure:

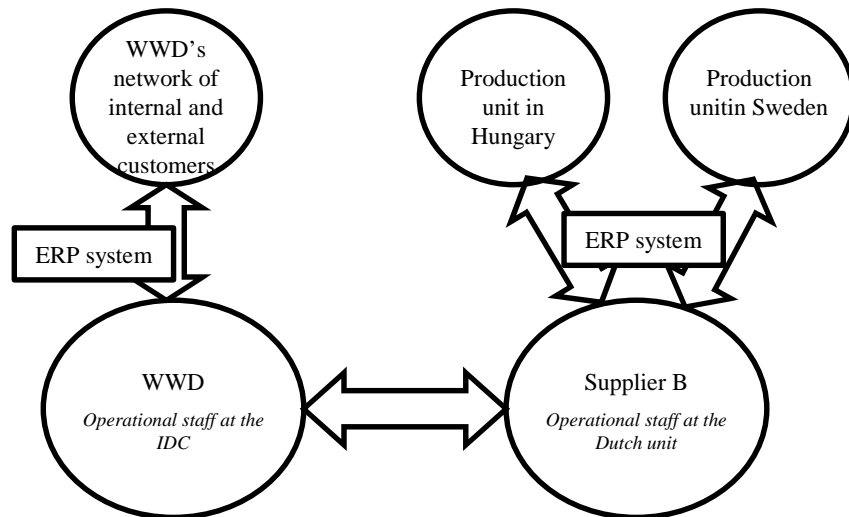


Figure 8.3 Resources in the ordering routine before the change

The delivery routine in the relationship between WWD and Supplier B involved the following resources and resource interfaces. Firstly, the routine involved the distribution of welding electrodes (WE), which constituted approximately 95% of the products supplied by Supplier B to WWD. Hence, these electrodes were the most important product resources involved in this routine. They also influenced how other resources in this routine were used. As to facility resources, Supplier B's production facilities in Hungary and Sweden constituted important ones, as the electrodes were produced at these facilities. In addition, Supplier B's central warehouse in Belgium and WWD's warehouse at the IDC in Rotterdam were important facility resources as the electrodes were stocked there, in addition to Supplier B's ERP system connecting its production facilities and the warehouse. Interfaces existed between these facility resources, as they had to be combined in order to enable the deliveries. In addition, there were important interfaces between the electrode products and these facility resources, as the electrodes had to be handled and stocked in specific ways.

As to the organisational resources involved in the delivery routine, Supplier B's Dutch unit with its operational staff and the warehouse staff at the IDC were important units. The deliveries were enabled by these units doing their parts of the routine, in terms of packing and receiving the goods. Furthermore, the logistics service provider delivering the electrodes from Belgium to Rotterdam also represented an important business unit involved

in performing this routine. Finally, the relationships between these units and the staff representing them were important, as the co-ordination between them was necessary in order to ensure an efficient flow of goods. In addition to these resources and resource interfaces involved in the delivering into Rotterdam, there were also many involved in the various sub-routines co-ordinating the distribution out of Rotterdam. These included for example the logistics provider, responsible for distributing the goods from Rotterdam (the same as used by Supplier B into Rotterdam) and WWD's network of internal and external customers receiving the goods, including customers' ships using the goods. Although we have chosen to concentrate on those sub-routines involved in the interface between WWD and Supplier B, what happened out of Rotterdam was also important and is included in the below figure illustrating the most important resources and resource interfaces involved in the delivery routine.

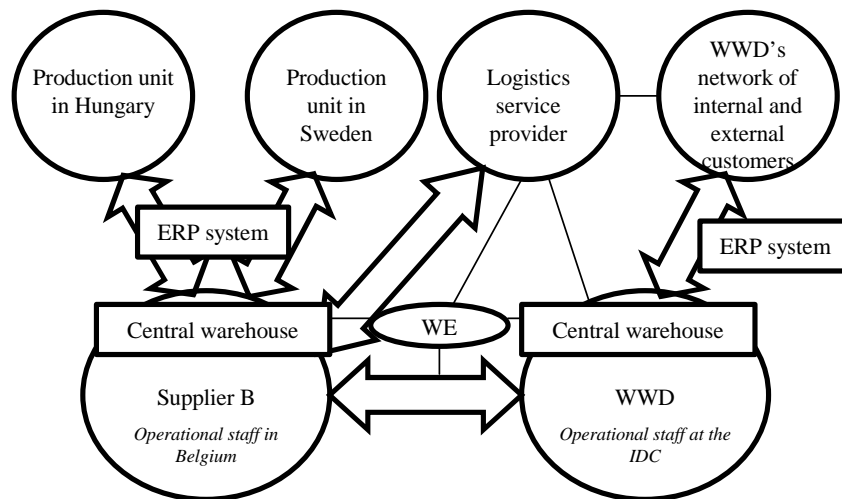


Figure 8.4 Resources in the delivery routine before the change

The invoicing/payment routine in the relationship between WWD and Supplier B involved the following physical and organisational resources. As the figure below illustrates, the most important organisational resources involved in this routine were Supplier B's Dutch unit, and its operational staff sending the invoices to Rotterdam, and WWD's IDC and the warehouse staff responsible for receiving and forwarding the invoices to the financial department in Rotterdam. The internal interface between these two latter units was crucial for the functioning of the routine. The financial department would further register the invoices in the ERP system facility. This facility represented as such an important physical resource in this routine as it

provided information about the original orders and also whether the goods had been booked in or not. This was crucial information, as the financial department at WWD ASA would authorise the payments only insofar as the goods had been booked in. The following figure illustrates the most important resources and the interfaces involved in routine:

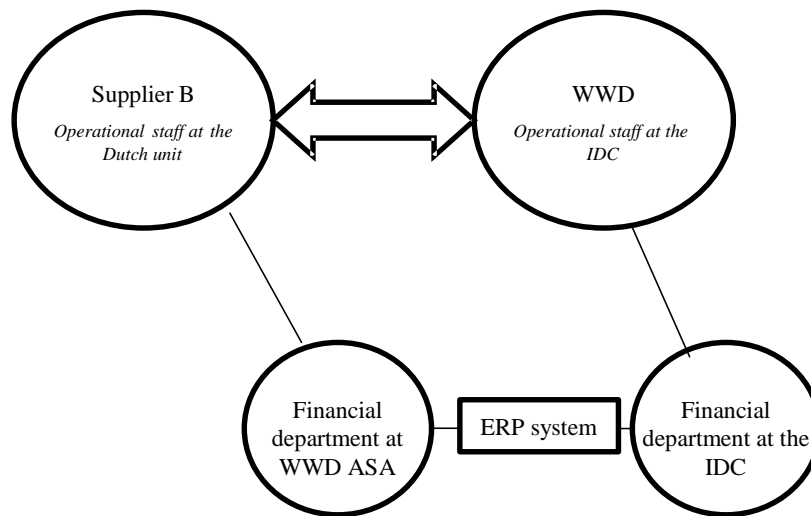


Figure 8.5 Resources in the invoicing/payment routine before the change

Resources involved in the routines after the change

The change within the relationship between WWD and Supplier B affected the routines and the involved resources in a number of ways. The main trigger to the change was that the original key account manager at Supplier B left the company quite suddenly. This person constituted an important resource in the relationship, with valuable connections to several other organisational resources, such as his own organisation and also the responsible procurement manager at WWD. The relationship between the two business units was now negatively affected. A new product manager and the managing director of Supplier B's Benelux region replaced the original key account manager at Supplier B, and then later another product manager and a sales manager took over the responsibility. These new persons possessed different capabilities and motivations, affecting in particular the price negotiations and the meeting routine. New interfaces were thus created. WWD also re-organised in 2003, removing the corporate function. Though the original contact person at WWD remained, the corporate procurement

manager was no longer involved in the relationship. Instead the managing director of the M& R unit was often involved in both the negotiations and in the meetings. The product-technical staff were involved in the meetings in approximately the same way as before. In addition to these changes in the contact pattern, it is also important to note that Supplier B's steel suppliers became more important to the relationship during this period. The increased steel prices had a significant effect on the relationship in terms of the price pressures they provoked. We may say that one of the most fundamental changes in the price negotiation and meeting routines in the relationship between WWD and Supplier B after the change was the introduction of a new business unit, represented by the steel suppliers.

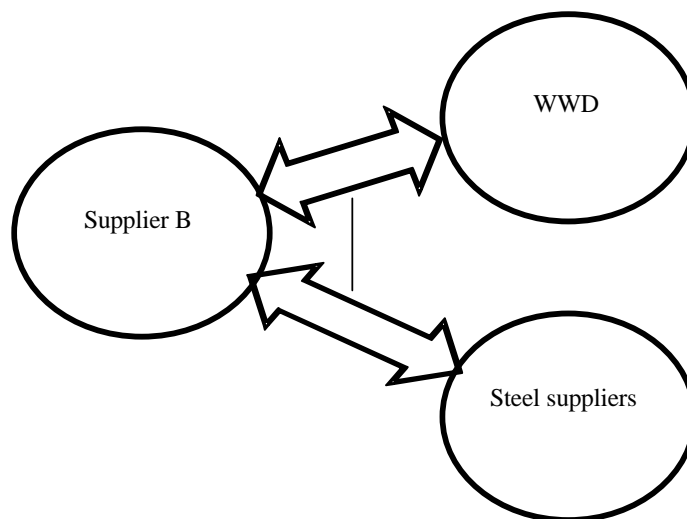


Figure 8.6 Resources in the price negotiation and meeting routines after the change

Compared to the commercial routines, the operational routines did not change to any significant degree, remaining basically the same as illustrated in the figures before the change. However, the increased price pressures affected some of the product resources and the interfaces involved. Supplier B used to supply WWD with both high quality electrodes (red range) and more standard and low quality electrodes (blue range). These were produced at the production facilities in Sweden and Hungary. WWD wanted to replace the blue range with a Flankline product range for the Asian market. This range would be produced at Supplier B's production facility in Jakarta

and distributed to WWD's sites in Singapore and Shanghai. As such, there would be a switch of product resources, breaking old resource interfaces and creating new ones. Though planned, the new delivery routine was never implemented as Supplier B was unable to keep the agreed prices. Instead, WWD found a Chinese supplier for the Flankline project, and the resources and the interfaces involved in the supply of the blue product range from Supplier B to WWD were discontinued. The main reason for WWD's decision was the need for lower product costs. WWD, however, recognised that this situation could perhaps have had another outcome if the original contact person at Supplier B had still been in charge. According to WWD he would presumably have handled the issue differently, and WWD would also have been more flexible because of the good relationship. Hence, one could argue that the change in the product resource was a result of both price pressures and to some extent the loss of the original contact person.

In addition to the change in the products, the increased price pressures also resulted in some modifications to the delivery routine and also to the invoicing/payment routine. Because of significant storage facility savings in Belgium, Supplier B would from 2005 deliver products directly from Hungary to Rotterdam. Furthermore, the parties agreed during the 2004 negotiations that WWD would pay within 14 days after receiving the invoice instead of 30 days.

Connections and degree of adaptation

It was argued earlier that the degree of involvement in the relationship between WWD and Supplier B could be assessed based on the connections between the parties and degree of adaptations in the interfaces. Before we look closer at the routines and resources in the relationship, we shall briefly see how connected the parties were at the actor level. As to the actor bonds, the bonds between the two parties were very close until 2003. It was emphasised that the problems in the beginning of the relationship had contributed to this in terms of bringing the parties together and the relationship was considered as being very good. However, when the contact pattern was changed, the bonds at the commercial level weakened and the good atmosphere disappeared. Due to the continuous change of contact persons from Supplier B, continuity, in addition to the established trust and commitment, was lost, and it was difficult to establish new bonds. When the contact pattern between the new key contacts eventually was re-stabilised, the personal chemistry was not as good as earlier. At WWD it was discussed whether or not to bring in new contacts, however, in the last meetings of

2005 WWD believed that the climate was improving and attributed this to the parties now getting to know each other.

As to the routines and resources, some of the routines in the relationship between WWD and Supplier B and the way resources have been used and combined have been standard whilst others have been adapted. For example, until 2003, WWD conducted annual price negotiation meetings with their most important suppliers. However, when the initial contract between WWD and Supplier B was signed in 2000, prices were agreed for three years. A long-term agreement was perceived as being more advantageous, as the parties could then concentrate on other issues. Since price negotiations generally were difficult, they put a lot of pressure on relationships. Hence, conducting price negotiations once every third year instead of annually would prevent unnecessary pressures on the relationship. In this way the negotiation routine in the relationship between WWD and Supplier B was adapted to this particular relationship while the content and the form of the routine in itself remained relatively standard. In addition, those responsible for the negotiations were the procurement manager at WWD and the key account manager at Supplier B, which was also standard for both parties.

In August 2003 the prices were re-negotiated, and a new three-year agreement was signed. There had again been a switch in contact persons, resulting in new relationship interfaces. Though it was difficult to reach an agreement, the negotiations themselves took place similarly to the first negotiations. However, after a few months Supplier B claimed that they were not able to keep the agreed prices, as the steel prices had exploded and their steel suppliers were increasing prices. Furthermore, the persons responsible for the re-negotiations at Supplier B had now been replaced. Thus two new managers at Supplier B were now involved in the negotiations, represented by a product manager and a chief sales manager. It was quite unusual for a product manager to be given commercial responsibility. Nevertheless, these persons were responsible for negotiating a possible price increase. WWD would initially not accept a renegotiation referring to the signed three-year agreement. However, in order to maintain a good relationship, they agreed to look at the issue provided that Supplier B were entirely open about their costs. This was, however, not Supplier B's policy. After further negotiations throughout the year, the parties finally met half way, WWD receiving insight into Supplier B's books while accepting a small price increase. A new temporary agreement was signed at the beginning of 2005, but it was decided that the prices were to be re-evaluated at the end of the year depending on the status of the steel market.

We may say that the price negotiations between WWD and Supplier B were specific to this particular relationship, at least on WWD's part. First of all, the duration of the agreement was different from the one-year agreements with other suppliers. In addition WWD would normally never concede to an agreement, as was the case with Supplier B. On the other hand WWD was totally dependent on Supplier B and could not afford to jeopardise the relationship. For Supplier B the special situation involving steel prices made it necessary to re-negotiate prices with all customers, making temporary agreements, and thus this became more or less standard. When steel prices again stabilised, the negotiations with customers would presumably return to their original frequency.

Similar to the price negotiation routine, the meeting routine between WWD and Supplier B had also been quite specific to this relationship. In the beginning of the relationship the two original contact persons, representing the two business units and as such being important resources in the relationship, often joined by technical staff, met regularly to discuss various issues concerning the relationship and the operations involved. This was not unique, as most newly established relationships required frequent meetings in order to get to obtain knowledge and establish routines. However, unlike other relationships, at least on WWD's part, the frequent meetings with Supplier B continued after the initial phase. The parties would discuss the relationship and ways to improve and extend the co-operation, by finding new ways of utilising their resources. WWD did not meet as frequently with their other suppliers, and it was acknowledged that the co-operation with these was, therefore, not fully exploited. The close relationship with Supplier B was attributed to the personal relationship that had developed between the two contact persons, and the fact that the contact at Supplier B was very pro WWD. There had been substantial problems in the beginning of the relationship, which the parties had solved together in a very successful manner. Due to the frequent meetings, the involved persons developed ways to interact, based on knowledge and trust. The meeting routine accordingly became both specific and adapted to this particular relationship.

After the original key account manager at Supplier B left the company, the meetings decreased in frequency. The new persons at Supplier B brought different knowledge and motives to the relationship. According to WWD, however, they were more difficult to co-operate with, and the trust thus disappeared. This was accentuated by the fact that several persons came and went during this period. The product manager, who was finally appointed as the new key account manager, was according to WWD very technical and price-oriented. The procurement manager at WWD found him difficult to communicate with, particularly in the beginning, and the meetings soon

involved primarily price issues. As noted above, price negotiations are tough for a relationship, and accordingly the parties tried to avoid each other. The atmosphere in the relationship between WWD and Supplier B deteriorated as a consequence of these changes and pressures, and the connections between the persons were hard to establish. What originally had made the meeting routine and interaction between WWD and Supplier B special, no longer existed. Soon the relationship between WWD and Supplier B was quite similar to WWD's other supplier relationships.

While the price negotiations and the meetings between WWD and Supplier B were quite specific to this relationship, the operational routines were relatively standard. The ordering routine, for example, was standard in the sense that the same units at each party handled their respective parts of the routine in a relatively similar way as they did for other suppliers and customers. Operational staff at IDC sent the orders to their counterpart at Supplier B's Dutch unit, who reserved the goods at the central warehouse in Belgium, and then sent an order confirmation back to the IDC. The only adaptations to the routine were how many times and on which days each week order was sent. In addition, units and staff involved had learned the other party's way of performing its part of the routine, and made adjustments to improve the co-ordination. For example it is likely that problems were handled in a way that differed from the way problems were handled in other relationships. However, apart from a few scheduling constraints, the ordering routine was relatively standard for both parties.

The delivery routine was also standard on WWD's part, but more adapted on Supplier B's part. The products themselves, for example, both the electrodes and the packaging, were specifically adapted as to minimise the affect of moisture since WWD's customers used them on board ships. These products needed to be packaged especially, stored at specific temperatures, and have a different shelf life. The actual deliveries were also adapted in a number of ways. WWD used to get deliveries twice a week from Supplier B's central warehouse in Belgium. Also different from other customers, WWD required that each pallet would contain only one type of electrodes. Hence, the goods, which arrived from Sweden and Hungary had to be re-packed at the central warehouse in Belgium and as a result, some of the pallets ended up half full. This increased the costs, as the logistics service provider was paid for each pallet.

A further adaptation for WWD required that a specially adapted pick list was attached to pallet number 1. On this list, the associated pallet number was written next to each product. This was a standard requirement for all WWD' suppliers. Yet another adaptation made for WWD was that the goods were

packed on special heat-treated pallets. Finally, the packaging and storage of the goods, and the shipments themselves, had to follow strict requirements, such as specific temperatures. Hence, the interfaces between the products and the warehouse facilities, and between the warehouse facilities (i.e. in Belgium and Rotterdam) were adapted to this relationship. WWD and Supplier B also discussed the possibility of direct deliveries to WWD's other sites. This was not materialised, however, the parties agreed that starting 2005 Supplier B would deliver directly from its production facility in Hungary to the IDC, without being distributed via Belgium.

Finally, the invoicing/payment routine was also originally standard for both WWD and Supplier B. The original agreement implied that WWD would pay within 30 days after receiving the invoice. However, also similar to many of its other supplier relationships, WWD was on average 14 days too late with the payments due to inefficient handling of the invoices. The parties agreed in the 2004 negotiations in that starting in 2005 WWD would pay within 14 days rather than 30, because of Supplier B's need of improving the cash flow. This was relatively new at WWD, where only a few other suppliers were paid within the same time frame. However, still there were some delays, caused by WWD's inefficient sub-routine for handling the invoices, due to the interfaces between the internal units did not work properly and the ERP facility resource was not utilised.

From the above we can see that the relationship between WWD and Supplier B can be considered as a high-involvement relationship until 2003, with close connections and a good atmosphere. Because of the personal relationship between the two responsible managers, the actor bonds were strong. However, looking at the operational routines, we see that these were relatively standard in that the same resources were used in much the same way for many different relationships. There were some adaptations, but these were mostly in terms of time scheduling and ways of packing the goods. Earlier the parties discussed how to extend the relationship, and among other things they engaged in a joint purchasing project. However, after the change within the relationship, the actor bonds and other connections weakened. It seems reasonable to say that the relationship changed into a relationship with lower involvement.

8.2.3 Connectedness to other relationships

When it concerns the final relationship characteristic, the connectedness to other relationships, we have seen earlier that the relationship between WWD

and Supplier B was connected to other relationships in a number of ways. Both Supplier B's suppliers and other customers and WWD's other suppliers and customers were important to the relationship, as they posed requirements, opportunities and constraints to the focal relationship. For example, WWD's customers influenced upon the relationship, as they required the welding electrodes to be in specific sizes and have specific properties, such as ability to avoid moisture. In addition, Supplier B's steel suppliers affected the relationship quite substantially. In addition, the relationship was also connected to the relationship between the professional purchasing company responsible for their joint purchases and the respective supplier of these products. However, there were no formal co-operations involving for example Supplier B and the rest of WWD supplier network.

8.3 Characteristics of learning in the relationship

The way the routines in the relationship between WWD and Supplier B and the resources used in them, have changed throughout the years, both before and after the main change incident, may help us identifying how learning has been reflected in the relationship. In the following, this relation will be analysed by proposing answers to the following questions: What learning processes have been involved in the evolution of these routines? Where has this learning taken place? What were the triggers of these changes? Furthermore, the implications of the learning and changes in the routines and the relationship itself will be investigated.

8.3.1 Changes in the routines

The price negotiation routine

If we look at the price negotiations, we have already seen that this routine was unique, at least for WWD. Instead of having a one-year agreement, the initial agreement with Supplier B was for three years. In the negotiations in 2000, it was agreed that a long-term agreement would provide stability in the relationship. Given that this was a new routine for both parties, we may say that the routine in some sense resulted from an inter-organisational exploration of new possibilities. Both parties changed a basic premise for the negotiations, acknowledging the need to reduce pressure in the relationship. The negotiations, however, were still based on the same issues, such as

volume and quality, and involving the same persons, including other suppliers and customers. Hence, exploitative learning based on existing routines and resources was involved in the establishment of this new routine, as the routine changed merely in quantitative ways.

The routine changed in the period 2003 to 2004. Firstly, there was a change in the contact pattern through the introduction of several new contact persons at Supplier B's into the price negotiations. These persons constituted the introduction of new resources into the routine, and consequently new connections and interfaces had to be established. Due to the continuous changes in contact persons, variation was introduced to the routine, and little consistency was achieved. This period was hence characterised by a similar on-line exploration as that having taken place during the initial price negotiations between the parties. The contact pattern was finally stabilised, however, and the negotiations became more predictable as the parties obtained knowledge about each other.

Simultaneously with the change in contact pattern, there was an increase in price pressures. WWD's profits had been reduced due to a decrease in sales and also due to currency issues in the recent years. Added focus was, therefore, put on costs, including purchase price. This was followed by an increased use of benchmarking and the implementation of a new sourcing strategy. Supplier B was also facing difficulties due to the rapid increases in steel prices. Ultimately it turned out that they were unable to keep the prices negotiated in 2003. At the end of 2004 WWD were so informed. Throughout the following year the parties met several times to renegotiate the prices. The frequency of the negotiation routine was thus increased, providing the parties with new possibilities of meeting and of refining the routine. One of the most important lessons from this on-line exploitative learning was to discover how far the other party was willing to go before jeopardising the relationship. This turned out to be quite far, according to WWD, and thus affected the overall relationship negatively. However, during the negotiations in early 2005, the atmosphere was more congenial, and the parties finally reached a price agreement. WWD attributed this to the increased knowledge about each other, having resulted in improved communication. In addition, the product manager from Supplier B attended the meetings without the sales manager. The product manager seemed more relaxed during these negotiations, and WWD assumed this was because he did not have to "prove anything" in front of the other manager.³⁹

³⁹ Interview no 30 in Appendix 1

The meeting routine

The meeting routine in the relationship between WWD and Supplier B used to be a unique routine for both parties. It was established in order to implement the relationship, in terms of co-ordinating the involved resources and to establishing and streamlining the various operational routines involved. Both parties had established routines for implementing new relationships, including frequent meetings, from which experiences were now used in this new relationship. We may, therefore, say that this new meeting routine was also based on the exploitation of WWD and Supplier B's respective high-level routines. The initial meetings contained discussions about how to establish efficient exchange flows by utilising existing routines and resources at both parties. Per se inter-organisational off-line exploitative hence learning took place. It may be argued that since a new relationship always implies new resource combinations, explorative learning behaviour is involved. The same can be argued as taking place in these first meetings between WWD and Supplier B. Hence, the meeting routine facilitated inter-organisational explorative learning as well.

Unlike the meeting routines in other relationships, the frequency of the meeting routine in the relationship between WWD and Supplier B continued. Though the parties did not meet as frequently as in the beginning they still met on an average once a month. The meetings would always involve the two responsible managers, and the routine was as such enabled by the connection between these two managers, and as such embedded in the interface between them. Technical staff members also occasionally participated, introducing a degree of variety into the routine in terms of their experiences. Hence, besides of the managers, these staff members were also important resources involved in the routine. The parties came to know each other quite well, and felt comfortable with each other. They would discuss the relationship, market developments, technical and operational issues and problems, and ways to extend the business and the relationship. Often the meetings also dealt with changes initiated by WWD, resulting in changes in various sub-routines. For example, on one occasion the parties discussed a WWD sales campaign, which required higher stock levels from Supplier B. WWD conducted such campaigns frequently, and had developed a routine for handling them. The handling of such campaigns were communicated and shared with Supplier B, leading to changes in the operational routines. We may, therefore, say that this meeting routine facilitated the development of a relationship-based knowledge. In fact, several issues in the relationship were recurring phenomena, requiring similar treatment. The parties, for example, had developed routinised ways of handling customer complaints. It may thus

be argued that the parties had developed a high level routine for handling such problems, which was reflected in the meeting routine.

While the initial meetings contained a great deal of exploration, later meetings were more concerned about implementing and utilising the agreed solutions. The meetings were now more exploitative in character, and the learning efforts were directed towards improving the existing solutions relating to the various operational routines and the resources involved in order to create better stability and efficiency. This was also enhanced by the fact that many at WWD were in general not supportive to explorative change. For example in a meeting where Supplier B suggested some substantial changes in the packaging of the welding electrodes, one of the technical staff members reacted as follows: “There are so many things that can go wrong. We shall not be experimenting. We need to focus on our core competence, and go for the traditional solutions”.⁴⁰ This reluctance to more explorative change was legitimised by the characteristics of WWD’s marine customers. This was first and all related to the fact that especially the ship owners were considered conservative and did not like change, and secondly, since the products were used on board ships, they were more susceptible to problems. The staff members on board the ships using the electrodes were not professional welders, so the products had to be easy to use and their features had to be stable. Despite this emphasis on exploitation, the meetings resulted nevertheless in some explorative off-line learning as well. For example, a joint purchasing program was initiated by WWD’s top manager and developed, implying that the parties jointly bought some products.

The meeting routine changed substantially because of the change in the relationship. The structure of the routine changed, as the frequency of the routine decreased. As new managers were introduced, the content of the routine changed, providing new connections and interfaces with the managers from WWD. The form and content of the meeting routine were also affected due to the increased price pressures, leading each party to employ different strategies to reduce costs. From a relationship focused on improvements and the exchange flows, price and cost reductions became the main issues. Hence, we may say that these two routines somehow melted into one routine, with the price negotiations as the obvious “winner”. Other issues became less important, and the learning processes involved in the interaction at the commercial level were reduced to concerning prices and developments in the markets influencing upon them as described above. Hence, the meeting routine changed due to Supplier B’s “exploration” of various contact persons and also as a result of each party exploiting existing

⁴⁰ Supplier meeting no.2 in Appendix 2

and exploring new ways of reducing costs. On WWD's part this manifested in an increased use and refinement of the benchmarking routine and a new sourcing strategy, involving sourcing from low-cost countries.

The ordering routine

When the parties started to discuss the various operations, ordering was one important topic. The discussions concerned how to establish a well-functioning interface between the involved units, represented by the operational staff at the IDC sending and chasing the orders and the staff member at the Dutch unit handling the orders. The establishment of the ordering routine was consequently first and foremost a result of exploiting these units' existing competencies, as a similar ordering routine to the two parties' other relationships was developed. Nevertheless, the establishment of this routine also involved some exploration as the specific resources involved in this relationship had never been combined earlier, i.e. the operational staff had never worked together, and hence they had to learn to co-ordinate and adapt to each other.

The ordering routine remained relatively standard and stable since it was established in 2000. One reason for this stability was attributed to the fact that the routine was considered satisfactory. Hence, there was no point in changing the way the involved resources were utilised and combined. The only thing that was mentioned was that there should have been a better utilisation of the ERP-systems, enabling more electronically transfers between the parties. However, this was not considered as a big issue. Both units, employing their respective knowledge, handled the orders in standard ways. There were some modifications over time due to minor problems with the order flow, such as late order confirmations. Another adjustment was that the parties agreed that WWD would send the orders on specific days, rather than ad hoc. Some on-line exploitive learning thus was involved in changing this routine. The fact that WWD decided to discontinue the blue range of the electrodes and switch to the Flankline products implied that WWD stopped ordering these products from Supplier B in 2004. However, although this changed the content and quantity of the orders, the routine remained the same. The ordering routine did not change much because of the change in the relationship either. The routine contained the same resource interfaces, including the same staff members and the relationship between them. The sequences of the routine, including the various sub-routines also remained as earlier.

The delivery routine

Supplier B already produced the products WWD wanted, but modifications were necessary, such as the packaging, which was specifically adapted to WWD's customers' requirements. The products were produced at Supplier B's production facilities in Sweden and Hungary, and were sent via the central warehouse in Belgium to WWD's IDC in Rotterdam. The establishment of the delivery routine itself utilised the parties existing sub-routines and resources, involving Supplier B's production facilities, the parties' warehouse facilities and the respective staff members handling the deliveries, however adaptations were made. For example the welding products had to be stored in specific areas in Supplier B's warehouse with an appropriate temperature. In an overall perspective the routine was however little different from the delivery routines in WWD's and Supplier B's relationships with other suppliers and customers, as it involved the same resources. Hence, we may argue that the delivery routine was established as a result of primarily exploitive learning.

Unlike the ordering routine the delivery routine was relatively specific to this particular relationship and changed in various ways during the years after being established. One modification concerned Supplier B switching production site early in the relationship, causing severe problems. Some of the electrodes that WWD had accepted in the original agreement were originally produced at Supplier B's production facility in Sweden. However, Supplier B moved this production to Hungary, assuming that the output would be the same. However, it turned out that the electrodes produced in Hungary did not meet the specifications made, and WWD received complaints from several customers. As a consequence, WWD requested that Supplier B move this production back to Sweden. Hence, Supplier B's attempt of changing a sub-routine in the overall delivery routine by better utilising its resources did not have the expected positive outcome.

Other changes in the delivery routine came as a result of on-line learning processes. Various problems appeared as the routine and the various sub-routines were executed. The operational staff members would often discuss and solve these problems themselves, finding ways of improving the routine to make it efficient and stable. This learning process resulted in both adjustments in the way the two parties interacted, and also in modifications to one of the party's sub-routines and the resources involved. One example was the agreement on specific delivery days into Rotterdam. However, most often problems identified on-line were handled off-line. For example, the warehouse staff at the IDC complained that it was difficult to locate the various products in a shipment. It was important to be able to quickly locate

specific electrodes. The responsible procurement manager discussed the issue with operational management, and it was decided that each pallet would from now on contain just one type of electrode. This was further communicated to Supplier B's key contact, who in turn informed the operational staff members at the warehouse in Belgium, ensuring that WWD's wish would be implemented. Hence, the problem identified on-line was solved off-line by the two commercial contacts using the suggestions from the operational staff as a basis for the solution.

Similar to the ordering routine, the delivery routine was not directly affected by the loss of the original contact person. However, the price pressures had some impact on the routine. It was decided that rather than distributing the electrodes via Supplier B's central warehouse in Belgium, direct deliveries would be made to Rotterdam from the Hungarian production unit. The products produced in Sweden, however, would still be delivered via Belgium. Though this created a more direct interface between the production facility in Hungary and the IDC in Rotterdam, the same units were involved, and the operational staff continued to communicate with their counterpart at Supplier B's Dutch unit. Supplier B initiated this change as a way to save money. Though the changes had most impact on Supplier B's sub-routines, there were also some implications for WWD, in terms of number of deliveries handled at the IDC. Earlier a full truckload would arrive weekly from Belgium. Now, this truckload would contain electrodes produced in Sweden only. In addition, every second week a full truckload would arrive from Hungary. There were also some discussions about direct deliveries from Hungary to WWD's local sites. However this change was never implemented. Nevertheless, these off-line discussions about direct deliveries represented a new way of thinking both for WWD and Supplier B. New possibilities were explored.

The invoicing/payment routine

Similar to the other operational routines, WWD and Supplier B established the invoicing/payment routine based on existing routines and resources, and hence the exploitation of these. As we saw earlier, this routine was standard at both parties. The most important change in this routine was a direct consequence of the increased price pressures. In the initial agreement, WWD was supposed to pay within 30 days. However, in 2004 the parties agreed on 14 days instead. Supplier B was seeking ways to improve the cash flow, and one way was to decrease customers' payment time, hence modifying the existing payment routines. WWD wanted to show a positive attitude to the relationship and finally agreed to payment within 14 days starting in 2005.

This implied that WWD needed to adjust both their sub-routines and the ERP system resource. This was, however, not implemented immediately, and Supplier B soon started to complain about late payments. As the change only modified a single parameter (number of days) in the system, it only involved modifications to the existing routine, and hence exploiting the existing solution and resources.

Although the routine did not change much throughout the years beyond this adjustment in number of days, it was still acknowledged by both parties that it did not work well. The problems were attributed to the way invoices were handled at the IDC in Rotterdam. Sometimes the invoices were not delivered immediately by the warehouse staff to the financial department. At other times they were not entered into the system. As invoices were only authorised after the goods was booked in, payments would be late if the goods were not booked in immediately. Despite this recognition, there were few attempts made to improve the routine beyond urging the warehouse staff to book in the goods properly. However, when both the book-in sub-routine and the new “days to payment” parameter in the ERP system were finally implemented in mid 2005, the routine started to work quite well.

8.3.2 Implications of changes in the routines and the change within the relationship

The way the various routines and the resources involved in them have changed, may also illuminate where the imprints of these changes and the learning can be found. In this section we shall see if these processes were specific to individual routines, or if they propagated to other routines in the relationship between WWD and Supplier B or to other routines in other relationships to which this relationship was connected. Furthermore, we shall also look at the learning implications of the change within the relationship itself, following the disruption of the contact pattern and the increased price pressures.

Imprints of changes and learning in the routines

If we look at the price negotiation routine, we saw earlier that this was among others modified following the change within the relationship. New persons were involved from Supplier B, and only temporary agreements were made after 2004, hence increasing the frequency of the routine. However, the increased frequency of the price negotiation routine was not

unique to the relationship between WWD and Supplier B. WWD noticed that it was increasingly difficult to reach agreements with suppliers during this period, as many were experiencing difficult times. What was specific to the routine in the relationship between WWD and Supplier B was the way these negotiations set a standard for the interaction between the parties. They came to understand during this period how far each was willing to go to save the relationship. The implications of this learning reached beyond this particular routine. For example it had substantial implications on the meeting routine, and the two previously separated routines were soon turning into one. In addition, the negotiations encouraged WWD to use their new sourcing strategy and benchmarking routine more actively for these types of products. One result was that a Chinese producer was chosen to produce the Flankline line products. Hence, it may be argued that the changes in the price negotiation routine in the relationship between WWD and Supplier B resulted in the establishment of a new relationship and accordingly new routines for WWD's.

The meeting routine was an important arena for learning in the relationship between WWD and Supplier B, resulting in changes and learning in other routines. For example, the quality problems in the beginning of the relationship were solved in such meetings, and resulted in changes in Supplier B's production routine and the overall delivery routine. In addition the parties also found that they could benefit from joint purchasing, leading to a shared relationship with the professional purchasing company handling the purchasing and the supplier of these products. The meeting routine was extensively affected by the change within the relationship. After the original key account manager at Supplier B left the company, there were few meetings between the parties in the following months. However, in the autumn of 2003 WWD decided to implement the Flankline project. This implied that WWD and Supplier B had to meet to co-ordinate the project. Preparations were made to ensure a successful launch of the project. However, since Supplier B could not keep the agreed prices, WWD chose another supplier for these products. Since the communication between the parties had deteriorated, WWD had in the meanwhile found a substitute supplier in China. Hence we may say that the changes in the meeting routine, in particular related to the change in atmosphere, resulted in the establishment of this new relationship and associated routines.

From the beginning of 2004 the meeting routine between WWD and Supplier B more or less faded away, and only the price negotiations continued. The parties did not meet again until 2005, at which time they in addition to prices, also discussed direct deliveries from Hungary to Rotterdam. The atmosphere had now improved, which contributed to a

smooth change in the delivery routine into Rotterdam. According to WWD, the parties now knew each other better. Hence, we may say that this change not only affected the meeting routine itself, but also the operational routines in the relationship.

The operational routines in the relationship between WWD and Supplier B were relatively stable following the establishment of the relationship. The ordering routine, for example, remained virtually unchanged through the years. This routine was not directly affected by the change within the relationship. Modifications to this routine, for example, to solve the problems of late order confirmations, were local to the individual routine. There were few examples where changes in this routine had implications beyond the individual routine.

Unlike the ordering routine, the delivery routine changed in some ways. When Supplier B transferred the production of some of the electrodes to Hungary, WWD soon received complaints from customers. The new electrodes did not meet the specifications of the original electrodes produced in Sweden. WWD, therefore, requested Supplier B moving the production back to Sweden. This had implications for Supplier B's production routine, which had to be re-implemented in Sweden. In addition, there were also other examples of learning and changes that were transferred between the routines. For example, the decision to pack each pallet with just one type of electrode was made in order to be able to easily differentiate the electrodes for handling by WWD's warehouse staff at IDC. The fact that one pallet contained just one type of electrode made it easier for the reception unit to book-in the goods. This had been a problem, and consequently WWD was late with payments since these were authorised based on the book-in. Hence, improvements in the delivery routine and reception sub-routine affected the payment sub-routine.

Similar to the ordering routine, the delivery routine was not directly affected by the loss of the original contact person. However, because of the price pressures it was decided that Supplier B should deliver directly to Rotterdam from the Hungarian production unit instead of via the warehouse in Belgium in order to save costs. This change affected a number of sub-routines, especially the sub-routine at the site in Hungary, where staff now had to pack the pallets according to WWD's requirements. Most of the changes in the delivery routine had implications for sub-routines of this particular routine only, and there are few examples of implications for other routines and other relationships. The delivery routine changed primarily in a quantitative manner, such as when WWD decided to stop buying the blue range from Supplier B, following the Flankline project. This may be seen, at

least indirectly, as a consequence of the change in the relationship. A smaller quantity of goods was now being shipped from Supplier B to WWD. If the parties had agreed on the Flankline products, this would, however, have resulted in the establishment of new routines and resource interfaces in the Asian units of both parties.

The most important change in the final operational routine, the invoicing/payment routine, was a direct consequence of the increased price pressures faced by Supplier B. In 2004 the parties agreed on payment after maximum 14 days instead of the original 30 days. This was to assist Supplier B in saving costs. However, Supplier B soon started to complain about late payments. The problem was due to the fact that the change had not been implemented into WWD's ERP system. However, the payments had also previously often been late. This was a general problem at WWD, and other suppliers complained as well. The reason for these problems was attributed to inefficient handling of the invoices at IDC and that the goods was not booked in immediately on arrival. Hence there was an important connection between the paying and the booking-in of goods sub-routines. Though these complaints resulted in an increased attention when booking in the goods at the IDC, few other attempts were made to improve the situation. By mid 2005 the routine in the relationship between WWD and Supplier B worked quite well. We may say that the change in this routine was primarily local however, due to an increased attention to the change in the routine by the various staff members, other WWD suppliers also benefited from the improvements.

Learning implications of the change within the relationship

What were the implications for learning following the change within the relationship? The changed contact pattern implied breaking up the established relationship between the business units, represented by the responsible managers. Much of the partner-specific knowledge and ways of interacting, which were embedded in this specific interface, were now lost. The interaction at the commercial level was particularly affected and changed, due to the instability of the contact pattern, as Supplier B kept changing their contacts. Though the introduction of new persons brought variety into the routine and hence possibilities for learning, the parties never got the chance to utilise these possibilities, as new persons were frequently appointed. For example, in August 2003 WWD when decided to go for the Flankline project, this required the establishment of an additional delivery routine in the relationship with Supplier B. However, in the following project meetings between the parties, WWD had to continuously deal with

new contact persons. This made it difficult to establish the new routine, and the attempt to do so proved unsuccessful. Although this was primarily because of price, it was reinforced by the inconsistency in contact pattern caused in the relationship.

When stability was finally re-established in the contact pattern, it proved difficult to re-establish the good relationship at the commercial level. This was both a personal matter, as the procurement manager at WWD found the new key contact at Supplier B hard to communicate with, as the two parties had different focus and functions, and also due to the increased focus on price in the relationship. Both companies also faced tough price pressures in their respective markets. WWD reacted by increasingly applying the benchmarking routine while Supplier B asked their customers for price increases. These different strategies contributed to the increased focus on price in the relationship, and the interaction between the parties soon concerned primarily prices. The continuous difficult price discussions in fact lead to the parties avoiding each other. As the information flow between the parties now had changed both in content and in frequency, the possibilities for learning and what could actually be learnt were affected as well. The parties had lost an important arena for off-line learning.

Due to the decline in the relationship, and the statement that it was in fact not a relationship anymore, WWD considered the possibility of introducing new persons into the relationship. It was obvious that the communication between the new contacts did not work very well. Bringing in new resources into the relationship either from one or both of the parties, might lead to new combinations and hence new possibilities of re-establishing the relationship. However, these thoughts were not communicated to Supplier B, and nothing happened.

Despite the changes at the commercial level, or perhaps because of these changes, the operational routines involved in the relationship remained pretty much the same. The operational routines had been relatively stable throughout the years, and there had been few problems. Problems that occurred were usually solved at the operational level, though more major problems were brought up to the commercial level. The routines were overall considered very satisfactory, and there was no need to change them. For both parties the routines were also quite standard, providing the possibilities of utilising existing knowledge. We saw earlier that the loss of the original contact person and the increased focus on price resulted in less interaction at the commercial level and less focus on the relationship and the operational issues. As such it was argued that the possibilities for learning were restricted primarily to concern price issues. In some ways this could be

considered negative, as the parties were prevented from exploring new solutions that might be more appropriate than the existing ones. However, on the other hand this provided stability and hence the opportunity to exploiting the existing solutions and gain experiences about how they actually worked. As such, a basis for evaluating the outcomes of past learning, manifested in various routines and resource combinations, was enabled.

The operational routines were in general considered stable and satisfactory. However, the delivery routine was changed in some ways, as well as it was a target for further improvements and alternative solutions. Both parties wished to explore the opportunities for direct deliveries. WWD wanted direct deliveries from Hungary to its other sites, and was also looking at the possibilities for local distribution in Asia. However, as the communication between the parties deteriorated, these discussions discontinued. It was also due to a general discussion and problem within WWD relating to the IDC concept. Because of the existing structures, both physical and organisational it was perceived very difficult to change this concept. The direct deliveries issue was not brought back into the discussions between WWD and Supplier B until 2005, when Supplier B suggested direct deliveries from Hungary to Rotterdam. It was now agreed by both parties to improve the contact on the commercial level, in order to facilitate this matter in the best possible manner. In fact the interaction did change, as the parties now started to discuss other issues in addition to prices. This provided exchange of another type of information and the frequency of the interaction increased. Hence, new possibilities for learning occurred.

In the above section we have looked at some of the imprints of the change and learning processes in the relationship between WWD and Supplier B by investigating the evolvement of the routines and the resources used in them. We have seen that while some of these processes have been primarily local to the particular routine, others have had implications for other routines within and outside the focal relationship. It occurs that these processes triggered both changes to other routines as well as learning processes in other routines and relationships. In addition we have also looked at the implications for learning following the change within the relationship itself.

8.4 Discussion

In this chapter, the second case presented in Chapter 7, has been further investigated. The relationship between WWD and Supplier B has been analysed based on the research issues presented in Chapter 4. As to the

relationship characteristics, we see that the relationship seems to have passed through the different stages concurrently through the years. While some parts such as the operations have been stable, other parts have been developing, such as the commercial contact. The relationship between WWD and Supplier B was further investigated in terms of identifying the resources and resource interfaces that were involved in the routines in the relationship before and after the change. This was used to look at the connections between the parties and to what extent these were adapted to this particular relationship or used in similar ways as for other relationships. It was argued that although many of the operational routines and resources were relatively standard, the relationship was, at least in the first years a high-involvement relationship. As the contact deteriorated, the relationship was accordingly characterised by less involvement. However, still there were attempts of improvements and changes, such as the Flankline project, entailing learning processes to take place. Furthermore, the routines in the relationship between WWD and Supplier B were investigated as to reveal how learning has been reflected in the relationship. Learning was here related to changes in the routines and the resources and resource interfaces used in them. The various learning processes involved in these changes were described in terms of; whether they were a result of and entailed exploitation or exploration, whether they took place on-line or off-line, and also in terms of their triggers. Finally, imprints and implications of learning and changes in the routines and the change within the relationship itself were discussed.

What does this case tell us about learning in business relationships? Firstly, the case shows that the different relationship characteristics influence learning. The relationship between WWD and Supplier B can be viewed as a high-involvement and mature relationship at the time of the change incident. Learning was an important feature of this relationship, and learning efforts were directed both towards explorative and exploitive learning. However, after the change the involvement decreased. This was particularly related to the disruption of the close actor bonds, which had been developed early in the relationship. The case is as such interesting as it illustrates the importance and involvement of various units, represented by specific persons, in learning. Initiatives to changes and learning take place on different levels in the relationship, that is to say, both on-line and off-line. However, these often yield different types of learning and the result may be somewhat different. According to this case on-line learning on the operational level took place in terms of day-to-day problem solving and minor adaptations as the routines were performed. However, the more substantial changes appeared most often to be initiated and handled at the commercial level. Interaction at this level represented as such an important arena for information and knowledge sharing in this relationship. This

facilitated both exploitative and explorative learning. The meeting routine between WWD and Supplier B, for example, entailed exploitation of existing solutions as well as exploration of new opportunities. This learning would often result in changes in the operational routines.

When we think about learning, we often think about changes in physical resources and operational routines. The case also supports this idea. However, in addition this case shows that the commercial and interaction routines themselves change as a result of various learning processes. As the key contacts from WWD and the Supplier B and other staff members kept meeting and discussing various issues, they came to know each other very well, further refining the interaction routine. The interaction on the commercial level therefore entailed both off-line as well as on-line learning.

In sum, this case illustrates particularly well implications for learning when the interaction and routines connecting the parties at the commercial level break down. According to the case learning possibilities in the relationship were affected by such changes. When the focus was put entirely on price, little time and resources were left to discuss other issues and to improve beyond small adaptations in the operational routines. Hence what was possible to learn changed, both because the information changed in content and also because the frequency of the sharing decreased. However, as was noticed, this could also provide the stability needed to actually benefit from earlier learning investments in existing routines and resource interfaces. Another important issue illustrated by this case is that relationships pose certain constraints on learning. WWD was dependent on Supplier B, because no other supplier could provide the high-quality electrodes required. Hence, instead of replacing Supplier B with a supplier that was perhaps more beneficial to the company beyond merely supplying the product, WWD was to a large extent locked into the relationship with Supplier B. Furthermore, the case also illustrates that learning is not always voluntary. Much of the learning, which resulted in changes in the routines stemmed from the initiatives of one of the parties, to which the other party had to adapt. This also shows that learning in a relationship may result in changes in the way the parties interact directly, as well as changes in one or both of the parties' sub-routines of the overall routine.

Chapter 9. Change between relationships: Implications for routines

9.1 Introduction

In this chapter the third and last case of this thesis, concerning the relationship between WWD and Supplier C is presented. Based on the empirical example in Chapter 3 and the earlier case studies, similar routines have been identified in the relationship between WWD and Supplier C. The case centres on a change in the relationship, resulting from WWD selecting a second logistics service provider. This change affected the relationship and the routines in it in several ways. Supplier C now lost its position as a sole provider and changes in WWD's new relationship would often affect upon Supplier C and its relationship with WWD. Hence, we may refer to this change as change between relationships.

9.2 The relationship between WWD and Supplier C

Between 2002 and 2005, WWD had an exclusive contract with Supplier C. The relationship was considered as a partnership between the two companies. The contract stated that Supplier C would handle the distribution of all goods from WWD's main centres in Rotterdam, Singapore and Houston, and from WWD's chemical production unit (hereafter referred to as WWDC), and to the various WWD offices and hubs worldwide. The contract was worth 60 MNOK. However, despite the relationship being considered relatively successful by both parties, at least in an overall perspective, WWD decided to use a second logistics provider in 2005. The reason for the new agreement was a perceived need to gain a better overview and control of price developments within the logistics service market. As one of the respondents at WWD noted one year after signing the contract with Supplier C, "They (read Supplier C) offered an initial price in the contract, but the real prices are probably higher. We do not know whether we have been fooled or if the price increase reflects the market and that the same would have happened with another provider. If this continues, we will go back to the old way" (The author's translation from Norwegian).⁴¹

⁴¹ Interview no. 4 in Appendix 1

According to WWD, a second provider allowed competition and also a more accurate evaluation of Supplier C's offer, and accordingly gave WWD a chance to choose the best provider for the various destinations. WWD's intention was for Supplier C to handle 80% of the goods, while the new provider 20%. It was considered important for WWD to keep this percentage share in order to ensure the commitment of both providers.

The decision to use Supplier C as sole provider had originated from a need to streamline the logistics processes. At the beginning of 2000 WWD was working with nearly 100 different logistics service providers, spending approximately 100 MNOK each year on transportation. The situation was chaotic, and WWD did not have a total overview of the processes and the costs involved. WWD, represented by the corporate logistics unit (hereafter referred to as the CL unit), believed that having one partnership instead of all the small transportation agreements would be beneficial. This would entail frequent interaction with the same contact persons and the opportunity for synergy effects. WWD, therefore, decided that the company should select one global actor, distributing from all the main WWD centres. Some argued that this was too ambitious, and that it would be difficult to find a provider that could do a satisfactory job worldwide. Furthermore, many of the WWD centres had long-term relationships with their own service providers. It was expected that these relationships could turn out to hamper the implementation of the new relationship with Supplier C, since WWD centrally now would force the local offices to break these relationships and establish the new one.

After six months of preparations, including internal discussions about the company's needs and an evaluation of the different providers, WWD finally selected Supplier C as its sole provider. The main reason for this decision was Supplier C's total offer, and the compatibility of Supplier C's strategy with WWD's requirements. Firstly, Supplier C operated on a global basis and was part of a worldwide logistics network through its relationship with Deutsche Post. Furthermore, Supplier C appeared very professional. Even though most of WWD's deliveries were by sea they chose Supplier C, which had few deliveries by sea, as WWD believed Supplier C would be able to mobilise its network to handle this transport module. In addition, the communication between the responsible managers was good from the very beginning. Supplier C on their part considered WWD a potentially interesting and important customer due to both the global aspect of the contract and WWD's stable volumes and delivery frequencies.

WWD's CL unit was responsible for finding a provider and was in charge of the subsequent negotiations and implementation processes. WWD's CEO

signed the contract, signalling to Supplier C that this was an important contract for WWD. At Supplier C, the managing director of the company was responsible for the agreement. Supplier C was the Norwegian subsidiary of a large logistics company, but the company as a whole would be involved in the distribution processes. WWD was initially concerned whether the Norwegian unit or the Head Office had the mandate to make decisions. However, this turned out to be no problem. When WWD reorganised during spring of 2003, removing the corporate function, the contact pattern changed. The manager of a new unit, handling corporate purchases, was now responsible for the relationship with Supplier C at the commercial level. He was the main driving force behind the decision of employing two logistics providers instead of only one.

9.3 Interaction and routines in the relationship

Similar to the other case studies, we will here begin with a presentation of the relationship between WWD and Supplier C through an investigation of the most important routines involved; the price negotiation and meeting routines at the commercial level, and the booking, delivery and invoicing/payment routines at the operational level. The case centres on the changes and implications following WWD establishing a new relationship with a second logistics provider for the routines in the relationship between WWD and Supplier C. The routines are hence looked at before and after this change. As to the operational routines, we will here use WWDC as an example. In Table 9.1, the routines are summarised during the two periods, according to what they involved, how they were performed, and who were involved.

Table 9.1 Routines involved in the relationship between WWD and Supplier C

Routines	Before the change	After the change
<i>Price negotiations</i>	Prices of service to all destinations	Prices of service to all destinations
	A one-year agreement, based on information from other providers. From 2003, twice a year based on feedback from the network and Supplier C's performance	Four times a year, based on similar information as earlier and comparisons with the new provider
<i>Meetings</i>	Logistics manager and co-ordinator at CL unit and managing director and sales manager at Supplier C	Responsible procurement manager at WWD and managing director and sales manager at Supplier C
	"Project meetings" about the co-operation and operational issues	Problem-oriented meetings
	Every 14 days in the beginning, then every month at WWD HO. After 2003, few meetings	Twice a year at WWD HO, usually in the second part of internal meetings
<i>Booking</i>	Responsible logistics manager and co-ordinator at CL unit, staff from WWD areas and managing director and staff responsible for different modules at Supplier C	Responsible procurement manager at WWD staff from the areas and managing director at Supplier C and staff responsible for different modules
	Booking of transport from WWDC to all destinations	Booking of transport from WWDC to ca 80% of the destinations, exclusive to the Far East
	Every week, usually on Thursdays	Every week, usually on Thursdays
<i>Delivery</i>	Operational staff at WWDC and Supplier C, sub contractors and shipping companies	Operational staff at the two companies, sub contractors and shipping companies
	Delivery from WWDC to various destinations	Delivery from WWDC to destinations, except from in the Far East
	Picking up goods at WWDC, delivering to different destinations	Picking up goods at WWDC, delivering different destinations
<i>Invoicing/ payment</i>	Operational staff at WWDC and Supplier C, sub-contractors and shipping lines	Operational staff at WWDC and Supplier C, sub-contractors and shipping lines
	Invoicing and payment for logistics services from all destinations	Invoicing and payment for logistics services to all destinations, except from the Far East destinations
	Invoices sent to WWDC and paid for each shipment every week,	Invoices sent to WWDC and paid for each shipment every week,
	Operational staff at Supplier C and WWDC	Operational staff at Supplier C and WWDC

Price negotiations

In June 2002 WWD and Supplier C signed a three-year contract for the distribution of all goods from WWD's main centres in Rotterdam, Singapore, Houston, and WWDC. Deliveries were first to start from WWDC, which was the only production unit within WWD ASA (until 2004 when WWD acquired another production company) with deliveries from other destinations to follow based on the experience gained from the deliveries from WWDC. The contract was considered unique by WWD, entailing the use of a sole provider. The contract included a standard operating procedure for organising the deliveries and a service agreement. The contract also opened up for an extension of the co-operation, implying that the parties would look at the possibilities for Supplier C to also deliver into Rotterdam from external suppliers. Simultaneously with the initial contract negotiations, prices were also negotiated. The initial prices and the division of costs were part of the contract. Prices were fixed for one year. The price agreement was based on volumes per year, the different destinations, the transport solutions chosen, the various shipping prices and indexes and the overall service offered by Supplier C. During the initial negotiations, WWD was able to compare Supplier C's offer with those of other providers. Although price was important to WWD, this was not the only deciding factor for choosing Supplier C. WWD considered the total service concept critical. Hence, WWD accepted a slightly higher price from Supplier C, because Supplier C was able to guarantee that the service for a specific destination was good. The logistics manager and co-ordinator at the CL unit and the managing director and a sales manager at Supplier C were responsible for these first negotiations.

According to Supplier C, WWD became more concerned about prices following the replacement of the logistics manager at the CL unit by a procurement manager in 2003. The new manager suggested that the parties should negotiate twice a year instead of once a year. This was mainly due to an increased focus on price, but also because of increased differences in the shipping prices and various indexes for example CAF (Currency Adjustment factor) and BAF (Bulk Adjustment Factor). Hence, negotiating twice a year would imply less risk for both parties. The negotiations were based on market information about prices and new regulations. Furthermore, an evaluation of Supplier C's performance showing whether they were able to comply with agreed lead times or not, was also used in the negotiations. The evaluation was also based on information from WWD's network about the Supplier C's overall service and the communication between the parties locally. WWD had to rely on Supplier C offering competitive prices, as there were no other providers to compare with. The new responsible procurement

manager and the manager at Supplier C, in addition to a sales manager from Supplier C, were involved in these price negotiations. When WWD selected the second provider in 2005, they were able to compare Supplier C's offer with that of this provider. Hence, the following price negotiations were based on these comparisons. Furthermore, the price negotiations were from now on conducted four times a year.

Meetings

Initially there was daily contact between the two responsible managers at the respective companies. In addition, they held regular meetings every two weeks followed by monthly meetings. Staff members from both companies, responsible for the different areas and transport modules, also participated in the meetings. The early interface was run as a project aimed at implementing the relationship. This was a standard way of implementing relationships for both parties, though adaptations were necessary for this specific relationship. When meeting, the participants discussed operational issues, the different destinations, lead times, price variations, etc. They also discussed and solved problems that occurred during the implementation period. Bottlenecks were identified, and solutions investigated. Supplier C's problems in the US and with their sub-contractors were central items on the agenda and possible solutions extensively debated. The persons from the two companies worked well together, and the personal relationships that developed were perceived as both important and beneficial to the relationship. As the logistics manager at WWD noticed: "We have the same language" (The author's translation from Norwegian).⁴² The meetings were important arenas for developing the relationship further and finding ways of improving the existing processes. For example, they discussed Supplier C's customer program management (CPM), which entailed a customised solution. The intention was to use this program also in the relationship with WWD.

Due to the re-organisation at WWD in 2003, removing the CL unit, and because the implementation period was perceived successful, the number of formal meetings was reduced. The contact was now problem-oriented, and price became the main topic in the meetings. Both parties, however, felt that a regular meeting routine should be re-established. Despite reducing the number of formal meetings, there was still frequent contact between the two responsible managers by phone and e-mail, where they discussed ways of developing the relationship. In addition to this informal contact, the parties together also visited the local WWD and Supplier C offices worldwide.

⁴² Interview no. 4 in Appendix 1

According to Supplier C, WWD was however now increasingly concerned about prices, and less time was spent on the relationship as such. For example, Supplier C tried to convince WWD to take part in their CPM, but WWD was not very interested anymore.

The focus on price in the meetings was further reinforced following WWD's new relationship with a second provider. The meetings also addressed how this new agreement would affect the relationship between WWD and Supplier C. WWD paid much attention to the new relationship during this period. Supplier C on their part did not welcome the increased focus on price. As one of the respondents noted, "There is little peace these days, as all focus is put on price" (The author's translation from Norwegian).⁴³

Booking

As to the operational routines in the relationship, a routine was developed for the booking of transport from WWD's main centres to Supplier C's offices in the respective areas. We will here use WWDC as an example of how this routine has worked. The booking routine was here generally stable and standard over the years. The contact pattern remained unchanged as well. At WWDC the same two staff members were involved in the booking routine since the very beginning of the relationship. While one was responsible for the booking, receiving and distribution of confirmations, in addition to the handling of problems, the other was responsible for the documentation. At Supplier C two staff members were similarly involved since the beginning of the relationship. One of them took care of the regular bookings, while the other was responsible for the overall ordering and delivery routine. A general description of the booking routine was included in the standard operating procedure developed at the beginning of the relationship. The procedure was described in detail in manuals for each WWD centre. The manuals were updated on an average every year. Hence, if the staff member responsible for the regular booking was unavailable, other staff members could do the booking. The responsible staff members had, however, also developed their own ways of performing the routine, which was not included in the manuals, such as what to do if problems occurred. Although the routine itself was standard and stable, there were minor adaptations, especially in terms of time schedules and the distribution of information. The operational staff members themselves primarily solved problems occurring, though the responsible managers were sometimes involved. Especially in the

⁴³ Interview no. 41 in Appendix 1

beginning of the relationship, the responsible managers were involved as to solve implementations problems.

The booking routine worked as follows; when an order came in from one of the WWD offices, for example Singapore, the responsible staff member at WWDC registered it into the system and checked whether the products were available, from stock or production. If the order came in on a Wednesday, and the products were in stock, transport was booked from Supplier C on Thursday. There was always one week pre-booking. The booking note included the number of containers sent and their sizes, the destination and the expected arrival time at the destination. WWDC also gave their preference as to shipping line. There was, however, no direct contact between WWDC and the shipping companies. Usually, WWD booked on Thursdays. When Supplier C received the booking, the responsible staff member checked which shipping lines were available and their capacity. The different lines usually sailed every week or at least every 10th day. After the booking to the shipping company was sent, confirmation was faxed to WWDC within a day. The confirmation included information about date of shipment, number, size and type of containers, destination site, continental port of loading, date of further shipment, the shipping line and finally, expected date of arrival at destination. This information was required in order for WWDC to process the necessary paper work.

The confirmation was in addition sent to the agent responsible for the collection and handling of the goods for WWDC at the local port. WWDC booked transport from Supplier C, but the loading of containers was scheduled directly with a local agent. Even though Supplier C was responsible for the agreement with the local agent, WWDC was in direct contact with the local agent on a day-to-day basis. Every day before 10.30 am, WWDC gave the agent information about the next day's planned shipment. In addition to confirmation documents for each booking, WWDC also received a summary of the bookings every Friday afternoon containing information about the total amount booked for the following week, and information about actual deliveries during the past week. Information about container numbers, Bill of Laden (BOL) numbers and purchasing order numbers were also included for next week's deliveries.

As noted earlier, the booking routine was stable over the years. There were some problems in the beginning of the relationship, requiring the parties to streamline the processes. The flow of information, for example, needed attention. A common Electronic Data Interchange (EDI) system was discussed in the beginning of the relationship, which would have enabled electronic transfer of orders. A project group was established, however,

when the CL unit was taken away, the project was dissolved and the project never materialised. Most of the problems after the implementation problems were handled by the operational staff members themselves. WWDC staff noticed that the booking routine worked very well because of the efforts made by the operational staff at Supplier C, co-ordinating the different bookings and sending the information needed appropriately, hence creating a stable routine. When WWD made an agreement with the second provider in 2005, those responsible for the booking at WWDC did not expect this to influence the booking routine to any larger degree. In January 2005, the new provider started to deliver from the plant and to one particular WWD office. This office was one of a few that Supplier C did not handle, as there had been some communication problems between Supplier C and this particular WWD office. Furthermore, the new provider became responsible for all the Far East destinations. The main difference for the WWDC staff was to remember which offices the two providers handled. For Supplier C's, the change implied that the bookings concerning the Far East destinations were terminated. However, the change did not influence significantly the rest of the bookings.

Delivery

According to the initial contract, Supplier C was responsible for all deliveries of goods from WWD's main centres in Rotterdam, Singapore, and WWDC to the various destinations worldwide. A door-to-door solution was selected, which meant that Supplier C was responsible for handling the goods all the way from the site of origin to the destination site. WWD also intended that Supplier C would handle deliveries from the centre in Houston. However, this appeared to be too difficult. The US market was very complex and competitive, and Supplier C was unable to enter into good agreements with sub-contractors. Furthermore, the intention was for Supplier C to handle the deliveries from WWD's suppliers into the IDC in Rotterdam. However, this did not materialise. One extension that did take place, however, was that Supplier C also started to handle all distribution to WWD's new unit in Shanghai from European customers. This was implemented in 2003. Similar to the booking routine, we will in the following use WWDC as an example of how the delivery routine has worked over the years.

WWDC was the first site from which Supplier C was responsible for shipping the goods. WWD wanted to test Supplier C on one location. Hence, in the beginning the other WWD's centres continued using their existing logistics providers. Before signing the contract with Supplier C, WWDC had

an agreement with another service provider. WWDC terminated this agreement when WWD ASA selected Supplier C. The first delivery from WWDC by sea took place on the 1st of June 2002 only one month after signing the contract. Everything seemed to go well, and after a few months, the other centres were added. The parties had developed a standard operating procedure (SOP) during their initial meetings. In addition, each centre developed its own specific manuals.

The delivery routine following the booking routine in the process of shipping chemicals from WWDC to the various destinations. Both the routine and the volumes involved were relatively stable over the years. Approximately 1200-1400 containers of chemicals were transported from WWDC each year. 1/3 of the goods were sent to Rotterdam, and further on to external and internal customers. However, most of the goods was direct deliveries to overseas offices in the States and the Far East. The routine worked as follows: when the responsible staff member at WWDC booked a shipment to her counterpart at Supplier C, the local agent was also informed. Every day the agent would collect on average ten containers from WWDC and deliver these to the local port for storage. The goods was further sent by a feeder carrier on Tuesdays and Saturdays to one of the large loading ports on the continent, usually Bremerhaven or Hamburg. Supplier C was responsible for the agreements with the local agent and the feeder carrier, however, the day-to-day arrangements were made between the agent and WWDC directly. While most of the goods was delivered in containers, there was some times only one pallet of a specific chemical product. This was then loaded in port together with other types of goods. WWDC filled the empty containers as soon as they were received from the local port. Some of the chemicals were sent together with other goods to a specific site, for example Singapore, or Supplier C's central warehouse in Bremen, The same could happen in Singapore or Shanghai, where goods from various Asian suppliers were shipped together to the US or Europe.

After receiving the confirmation, WWDC prepared the documentation to be included in the container, including the BOL, a copy of the freight note, and any "dangerous goods" documents. The same documentation also accompanied the shipment itself. Many of the chemicals produced by WWDC were categorised as dangerous goods. This had important implications for the service providers, as they needed certificates and appropriate facilities to handle such goods. Problems would arise if dangerous goods were not registered properly in the system. If the port police or the port customs checked and found that the goods was not packed properly, problems occurred. If it was discovered that the containers were not properly sealed, WWDC would receive a message. This was because

WWDC guarantee that the seal stays in place from departure to arrival, and hence WWDC had to be informed if, on arrival, the original seal was not in place. In addition, there was a new ISPS (International Ship and Port Facility Security) regulation. This implied among other things that information about all goods into the US had to be sent to the US before the goods left Europe. To do so, was the responsibility of the service provider. The dangerous goods papers were also sent to Supplier C by fax, which in turn would forward them to the respective shipping lines. Supplier C had to have the papers on Thursday before 11.00 pm at the latest, for goods shipped on Saturday.

When the goods arrived at the local port of the destination, it was usually transported by truck to the final WWD destination. Supplier C used to handle the goods door-to-door, using local brokers. However, in 2005 WWD decided on another solution. Both parties in the relationship had long perceived the existing solution as problematic, however, WWD initiated the change. For Supplier C it was difficult to ensure an efficient flow, and for WWD it sometimes appeared to be more expensive. WWD noticed that on some occasions it would be both easier and cheaper with door-to-port deliveries, with the local WWD offices themselves arranging the transport from the port to their warehouse. They knew the local area, including country specific customs and import regulations. The change meant that the last stage was open to competition, implying that Supplier C had to compete on the same basis as other local agents. The idea was that the door-to-port solution would be offered as an alternative in order to achieve better and cheaper service.

The physical delivery routine remained more or less the same over the years. However, in the beginning of the relationship serious problems arose as the routine was rolled out to the different centres. Hence, several adaptations had to be made in order to make it work. The changes were primarily related to the information flow following the deliveries. It turned out that neither of the parties had prepared their local organisations properly for the new relationship. The communication and information flow did not work well neither internally nor between the parties. In addition, Supplier C had problems with its sub-suppliers, especially in the US. The lack of communication resulted in mistakes and delays, and solving the problems was hampered by the fact that the feedback loops did not work properly. For example, no one knew exactly when the goods had arrived at the destinations, and information about delays did not reach the right persons. There was no adequate system for reporting, resulting in little or no communication.

The parties had to work hard to improve the information flow and the routines involved. It was decided that all information from both Supplier C's and WWD's local network should be sent to the CL unit for proper handling and distribution of the information to the appropriate persons. Although the local offices were supposed to handle the day-to-day problems themselves, the CL unit was highly involved in the beginning. The key was to identify bottlenecks and ways to solve these. It was in addition important that all the operational staff involved in the deliveries, for example at WWDC, received copies of relevant correspondence. Hence, a system for reporting was established. Supplier C was responsible for delivering reports of expected as well as actual delivery schedules. Furthermore, WWD established supplier performance criteria, on which Supplier C was evaluated. Solving the initial problems was time-consuming but eventually the routine worked well, though small modifications were continuously needed. Later, the operational staff members solved most of the operational problems themselves, and the new responsible manager at WWD was primarily involved relating to substantial problems. In addition, WWDC was neither not always involved in solving these problems. Sometimes the problems were taken care of locally, for example by WWD Houston and Supplier C themselves.

The new service provider replaced Supplier C on the Far East destinations in April 2005. It implied that the existing sub-routines for these destinations were terminated. According to WWDC, the change did not significantly affect the existing overall delivery routine. The routine was relatively standard and similar for both providers. It was more a question of WWD having to relate to different people, and to remember which provider was responsible for which destinations. The new provider also used the same agent as Supplier C to collect the goods at the plant and distributed it further via the same local port to the various continental ports. At Supplier C the change was, of course, more noticeable, as they now had to terminate some of their existing routines. Firstly, it implied that there was less work, both at Supplier C and at the local offices. In addition, the relationships with sub-contractors in the local area would be dissolved for these particular deliveries.

Invoicing/payment

The invoicing/payment routine in the relationship between WWD and Supplier C was both standard and stable throughout the years. It was described in the standard operating procedures developed at the beginning of the relationship. According to these procedures, invoices were normally sent to the WWD office having booked the service. The intention was that

invoices should be sent weekly. In addition, it was also decided that WWD would pay within 14 days after receipt of the invoice. Despite the routine being described in the overall procedures, which were distributed to all of WWD's different centres and Supplier C's offices, adaptations were made at each of the centres.

The routine worked as follows; operational staff members at Supplier C generated an invoice each week, based on the reports of that week's actual shipments. The prices had been decided and entered into the system beforehand. Since WWD and Supplier C were not linked electronically, the invoices were sent by mail to WWDC. The operational staff members registered the invoices into the system, comparing them with WWDC's reports. Invoices were then sent to from WWDC to WWD ASA for payment. WWDC ASA paid all of WWD's suppliers. Sometimes there would be discrepancies between the invoices, the actual deliveries and the payments, due to incorrect prices in the system, or on the invoice, or containers not arriving on time or having been damaged. Such matters were normally solved by WWDC issuing a credit note. The same operational staff members at both parties were involved in this routine from the beginning of the relationship. This routine was affected by some of the changes in the relationship. For example, when WWD and Supplier C started to negotiate twice a year and later four times a year, they had to change the prices in the system accordingly. If this was not done properly, problems arose. However, beyond this change, the routine was stable. Similar to the other operational routines, the invoicing/payment routine was not affected to any large degree by WWD's new agreement with the second logistics provider. The change was merely in terms of a reduction in the amount WWDC paid Supplier C, and hence of a quantitative kind.

9.4 Summary

In this chapter, the relationship between WWD and Supplier C has been presented through an investigation of the most important routines involved in it. The investigation was focused on the change in the relationship, following WWD's new contract with yet another logistics service provider in addition to Supplier C. It was argued that this change implied a change between relationships. The change affected some of the routines in the focal relationship, disturbing its current state. The routines in the relationship were described before and after the change, using the change situation as a turning point. Based on this overview, the case will be further analysed in the next chapter to show how learning has been reflected in the relationship between WWD and Supplier C.

Chapter 10. Changes between relationships: Implications for resources and learning

10.1 Introduction

The third and final case in this thesis focuses on the changes in the relationship between WWD and Supplier C. From having an exclusive agreement with Supplier C for the distribution of all goods from the main centres in Norway, Rotterdam and Singapore, WWD decided from 2005 to use two logistics service providers. Introducing a new relationship affected the existing relationship between WWD and Supplier C in a number of ways. No longer being a sole provider of these services, Supplier C had to compete with another supplier. In addition these two relationships were now closely connected, thus changes in one would often affect the other. Hence, the change in this case may be viewed as a change between relationships.

In Chapter 9 the relationship between WWD and Supplier C was presented in terms of an investigation of the most important routines involved in it. The routines were described before and after the change. WWD's chemical unit in Norway, WWDC, was used as an example to show how the operational routines worked. In the following sections the relationship and the routines will be further analysed based on the research issues proposed in Chapter 4. Firstly, the relationship will be analysed in terms of the three relationship characteristics. We shall in particular focus on the "type of relationship" characteristic, identifying the resources and resource interfaces in the routines before and after the change, and further analyse the relationship in terms of connections and degree of adaptation. Then, by looking at how the routines and resource interfaces have changed throughout the years, we shall identify and analyse how learning has been reflected in the relationship between WWD and Supplier C, relating to the learning characteristics proposed in Chapter 4. The imprint of this learning and implications for learning following the change incident itself are also identified. We shall conclude the analysis with a discussion of the main findings.

10.2 Characteristics of the relationship

10.2.1 Relationship development stage

Until 2005 Supplier C was WWD's sole logistics service provider, and the relationship between WWD and Supplier C was considered mature and stable. Following the signing of the agreement the parties worked closely together in order to establish the relationship. If we look at the relationship between WWDC (WWD's chemical company) and Supplier C, WWDC being the original site from where Supplier C first carried out the deliveries, stable operational routines were in place within a year, despite some initial problems in implementation. The parties had come to know each other well, and the interaction at both the commercial and operational level was perceived as very good. In 2003, however, the Corporate Logistics (CL) department at WWD was removed, and the responsibility for the relationship was transferred to a new manager. As such, while the relationship at the operational level remained stable, the relationship at the commercial level entered into a development stage. However, the communication between the commercial contacts was soon satisfactory again. Hence, in 2005 the relationship was perceived as being on the whole mature and stable.

With WWD's new agreement with a second logistics provider, the relationship between WWD and Supplier C changed, and it may be argued that the relationship entered into a development stage. The parties now had to discuss how to terminate the deliveries to the destinations being taken over by the new provider. At the commercial level the introduction of the new provider affected the relationship between WWD and Supplier C in terms of content of the discussions. At the operational level, the change was merely of a quantitative type. Thus we see that various parts of the relationship between WWD and Supplier C were in some periods in different stages concurrently, switching back and forth between maturity and development.

10.2.2 Type of relationship

In this section the relationship between WWD and Supplier C will be further analysed in terms of the degree of involvement and connections between the two parties. Firstly we shall see what resources were involved in the various routines in the relationship and to what extent these were affected by the

change in the relationship. Then we shall take a closer look at the connections in the relationship and to what extent the routines and resources were adapted to this particular relationship.

Resource interfaces involved in the routines before the change

The routines in the relationship between WWD and Supplier C were embedded in specific resources and the combinations of resources, making up various resource interfaces. In the following we shall look at the resources involved before the change. Using WWDC as an example, the most central product resources were the chemicals distributed to the local offices worldwide. Several facility resources were also important, including the production facility at WWDC, the local and continental ports, the feeder carrier, the shipping companies' lines, and customers' ships using the chemicals. As to the organisational resources, the most important of these were the main business units WWD, WWDC and Supplier C, and the relationships between them. The responsible managers at each company and the operational staff at WWDC and Supplier C, represented the units, hence being important resources in the routines and the relationship as such. Furthermore the relationships between them were important organisational resources. Other valuable organisational resources in the relationship were WWD's and Supplier C's local offices worldwide and their relationships. In addition, the local agent handling the goods from WWDC to the local port, the shipping companies operating the lines, and WWD's customers were key organisational resources.

These different resources were used and combined in the various routines in the relationship between WWD and Supplier C. Below these will be further described and illustrated by respective figures.⁴⁴ If we look at the price negotiation routine, this routine concerned prices of the transport of WWD's different products, such as the chemicals from WWDC. These product resources were important in this routine, as they formed the basis for the negotiations. The properties of the chemicals, such as them being liquids and categorised as dangerous goods, had important implications for how to handle them and consequently affecting the price of this service. The negotiation routine used to be performed by the corporate logistics manager at WWD and the managing director and a sales manager at Supplier C. Later, when WWD's corporate function was removed, a procurement manager took over the responsibility. These responsible managers,

⁴⁴ The figures use the same symbols as Figure 4.3 p. 67 presented earlier in the thesis, and the straight lines indicates interfaces between the resources.

representing the two business units, can hence be considered as constituting important resources involved in the routine. Their knowledge and motivation in addition to the relationship between them probably affected the form and the content of the routine. For example, when a procurement manager instead of a logistics manager became responsible for the negotiations following WWD's reorganising in 2003, more focus was put on reducing prices. Hence, the connection between these persons and the interface between them enabled and affected the performance of the routine. There were also other resources more indirectly involved in the price negotiation routine. For example Supplier C's network and their ability to establish efficient interfaces with the sub-suppliers and the prices of these services would affect the price negotiations with WWD. However, the most important resources involved directly in the price negotiation routine between WWD and Supplier C were the two business units represented by the responsible managers and other managers, as well as the relationship between them as illustrated in the following figure:

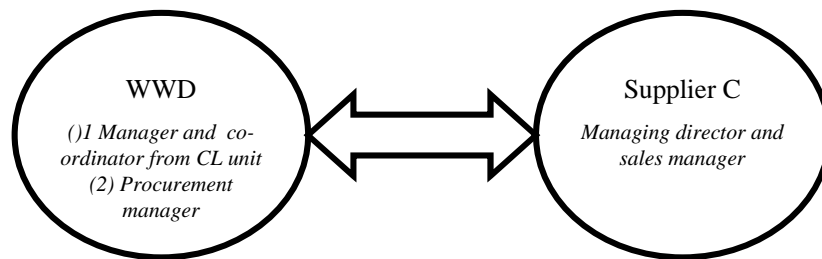


Figure 10.1 Resources in the price negotiation routine before the change

Similarly, the meeting routine was also embedded in the interface between the two business units, represented by the same managers. However, often they were supported by other staff members, constituting additional important resources in the meetings. These included staff members from the CL unit, who participated before the unit was removed, including the co-ordinator and other supervisors, staff from WWD's different areas and centres such as WWDC, and staff members responsible for the various transport modules at Supplier C. These persons were resources in terms of the experiences, attitudes and expectations they brought to the meetings, which then could be confronted and combined. In addition, they were also able to activate other resources. Furthermore, the relationship between them affected the form and content of the meetings. We know for example that the topics of discussion changed with the entry of the procurement manager from WWD in the meetings. In addition to the above organisational

resources and the interface between them, other resources were also involved indirectly involved in terms of being affecting and affected by the discussions in the meetings. However, the most important resources directly involved in the meeting routine can be illustrated in the following figure:

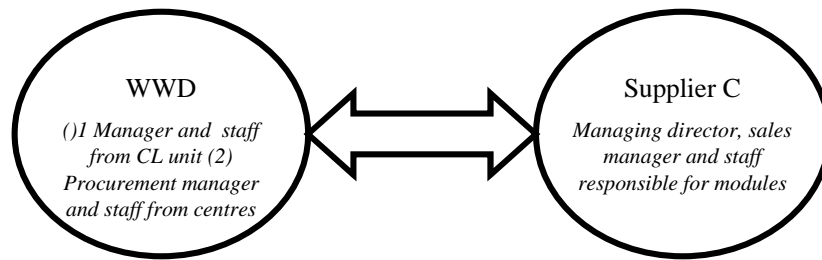


Figure 10.2 Resources in the meeting routine before the change

The operational routines for booking, delivery and invoicing/payment, included the use and combination of both organisational and physical resources. Using WWDC as an example, the booking routine involved first of all the operational staff at WWDC booking the transport and operational staff at Supplier C receiving the bookings. The booking routine was enabled by the interface and relationship between these persons representing the two business units, and activating the other resources needed in order to fulfil the booking. These persons had developed a specific knowledge and way of conducting the routine, through their interaction. In addition, other resources were also involved more indirectly in the routine. For example, the booking from WWDC was preceded by the local WWD offices worldwide issuing orders to WWDC based on customers' orders, making these units indirectly involved in the routine. Furthermore, Supplier C's network, including the local offices and the shipping companies received further bookings from Supplier C were involved. Finally, WWDC would book the day-to-day transport from the local agent, hence the latter business unit being a resource involved in this routine, as well as the relationship between the two. In addition to these organisational resources, both at WWDC and Supplier C the operational staff used ERP system facilities in order to conduct the bookings. These systems were as such important resources as they provided a way of storing information and also enabling communication between some of the units. Although there was not a direct interface between WWDC and Supplier C's ERP systems, as the two business units were not electronically linked, Supplier C had an inter-company ERP system, facilitating co-ordination between the internal units. The most important resources involved directly in the booking routine are illustrated in the following figure:

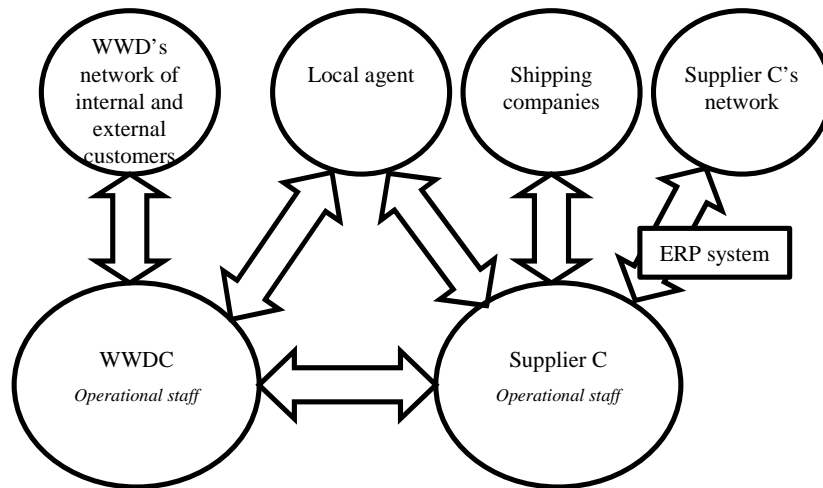


Figure 10.3 Resources in the booking routine before the change

The delivery routine involved the many of the same above-mentioned resources. In addition there were several facility resources involved. Firstly, the chemicals (C) were picked up from WWDC's production facility, which had prepared the goods. They further loaded the goods on the local agents trucks, which were also adapted to transporting such goods. Hence, there was an important interface between the chemical product resources, the production facility and the truck facilities. The chemicals were transported to the local port in the area, where they were stored and transported further with the feeder carrier to one of the continental ports. From here they were shipped by the respective line to the destination port, where they would be distributed to WWD's network of hubs and fulfilment point and finally to customers' ships where the chemicals would be used. Hence, there were important interfaces between these facility resources and between them and the chemicals, as they had to be co-ordinated and adapted in order to make the delivery of the chemicals work. In addition to the interfaces between these physical resources, WWD's and Supplier C's local offices and the relationships between them were also important since their activation and co-ordination of the resources were needed to perform the deliveries. The most important resources and resources interfaces involved in the delivery routine are illustrated in the following figure:

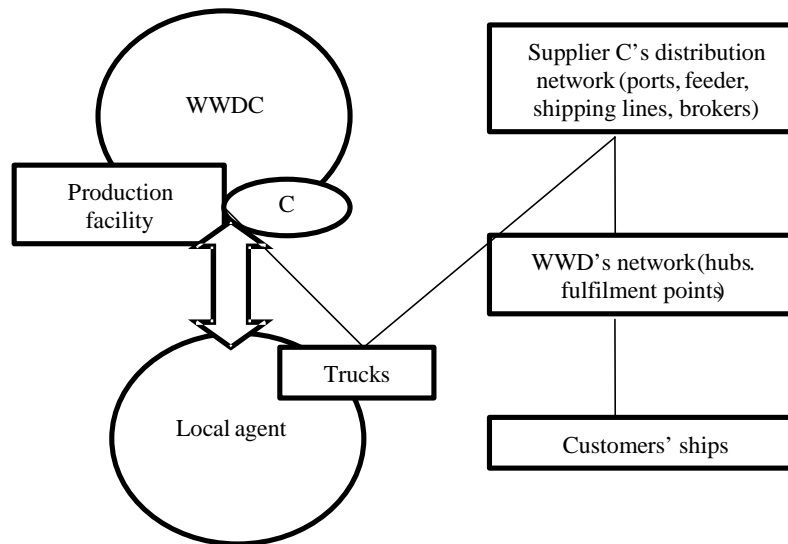


Figure 10.4 Resources in the delivery routine before the change

The last operational routine, the invoicing/payment routine, involved the two business units, represented by various departments and staff members. Firstly, the routine was enabled by the operational staff at Supplier C, issuing the invoices and the staff at WWDC handling and paying for the invoices. Hence, the routine involved the interface between these persons and also the relationship between them. In addition to this direct interface, the routine also involved more indirect interfaces. For example, the invoices were based on invoices sent by Supplier C's distribution network, including the local agent in Norway, the shipping companies, and the various local offices and agents at the destination sites to Supplier C for the respective services. Furthermore, WWDC would invoice WWD ASA for the chemicals, since WWD ASA was paying on behalf of the internal network. Hence, these units were also involved in the routine, though more indirectly. The figure below illustrates the most important resources and interfaces involved in the invoicing/payment routine.

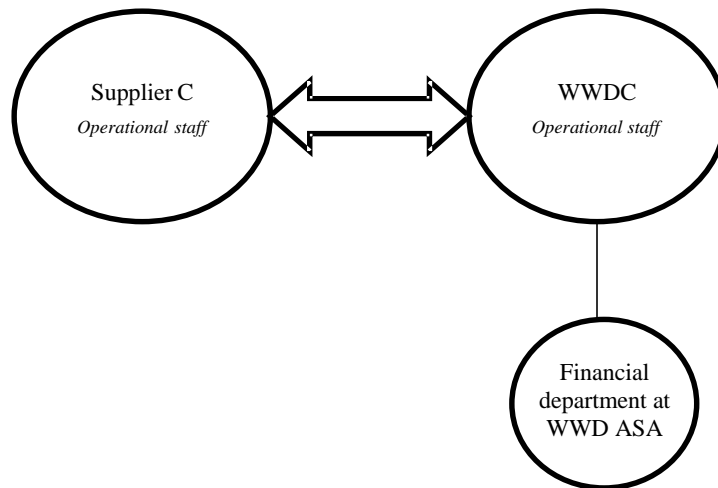


Figure 10.5 Resources in the invoicing/payment routine before the change

As we can see from the above, the three operational routines utilised many of the same resources and the interfaces between them.

Resource interfaces involved in the routines after the change

WWD's decision to use a second logistics service provider affected the routines and the resource interfaces in the relationship between WWD and Supplier C in different ways. Although many of the resources remained the same as those shown in the above figures, new resources were added and others removed. The new service provider represented an introduction of a new business unit and relationship resource to the relationship between WWD and Supplier C. The price negotiation routine, for example, was highly affected. Although the routine still involved the two business units, WWD and Supplier C, represented by the managers and the relationship between them, the new relationship indirectly influenced the focal relationship, creating a resource interface between these two relationships. Using an additional service provider offered WWD additional information about price developments in the market thereby increasing the contact persons' knowledge. Supplier C's offer was now being compared to that of the new provider for the same services to the various destinations. Benchmarking was now easier, and WWD felt that they had the upper hand in the negotiations. Supplier C on the other hand was afraid that they would not be able to keep their prices as low as earlier. As WWD now transferred

the responsibility of the Far East destinations to the new provider, Supplier C lost approximately 25% of their business with WWD. This could result in Supplier C losing synergy effects and hence possibilities for cost savings. Accordingly, the price negotiation routine also changed. New information and knowledge were added to the routine, and hence the negotiations were based on other premises than earlier.

The change had similar effects on the meeting routine, although in this routine the same persons were also still involved. WWD and Supplier C used to have regular meetings where the key contacts would discuss business and any potential improvements. However, now that WWD had a second provider, less time was left for the relationship with Supplier C. WWD's main focus was on establishing the new relationship. Hence, despite a desire to improve their relationship with Supplier C as well, time did not allow the same contact as earlier. Soon the formal meetings were more or less limited to the twice-a-year price negotiations, though there were informal contacts. Consequently, the meetings were mainly focused on price, and less attention was given to extending the business between WWD and Supplier C. Following figure illustrates the changes in the negotiations and meetings:

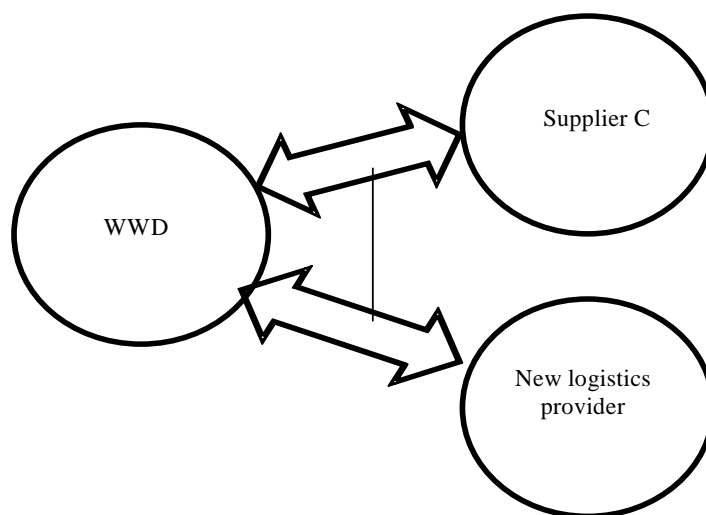


Figure 10.6 Resource in the price negotiation and meeting routines after the change

In addition to changing existing routines and resource interfaces in the more commercial routines in the relationship between WWD and Supplier C, the

introduction of the new relationship resource also affected the operational routines. A number of resources and resource interfaces were excluded from the relationship. This included all Supplier C's local offices and agents in the Far East, which had been responsible for handling the goods from the Far East ports of arrival and to WWD's Far East destinations. Accordingly, the resource interfaces that involved these unit resources and the relationships between them were dissolved. An example of such an interface was Supplier C's local office in Pusan and its WWD counterpart in that area. The interface between Supplier C's operational staff in Norway and the specific shipping companies running lines going to the Far East also disappeared. Consequently, the ordering, deliveries, and invoicing/payments routines for the Far East destinations were terminated and new routines established between WWD and the new provider. The routines for the remaining destinations were not affected to any large extent and continued in basically the same manner as illustrated in the previous figures of these routines and the resources and resource interfaces involved in them.

Connections and degree of adaptation

In order to identify the degree of involvement in the relationship between WWD and Supplier C, we may look at how connected the two parties were in terms of adaptations in the routines and the resource interfaces in the relationship. However, firstly we shall briefly consider the connections and bonds between the two parties at the actor level. If we look at the connections at this level it seems reasonable to say that as in every relationship, the parties had developed certain knowledge about each other and commitment to the relationship, influencing the interaction in the relationship. At the beginning when the parties worked closely together to implement the relationship and solve the problems, they came to know each other quite well and bonds developed. There was trust between the parties, though it was also recognised by WWD that they were not entirely sure whether they were being fooled or not, relating to price. Nevertheless, it was perceived as a good relationship, reflected in the recognition that "we have the same language". There was hence a mutual understanding, and both parties recognised this as being vital to the relationship. For example, the fact that WWD's CEO himself signed the contract was considered as an important signal of how WWD considered this relationship. WWD's establishment of the new relationship with the additional logistics supplier can be interpreted as if the bonds between WWD and Supplier C had weakened, in terms of the commitment and trust between the parties, and it presumably further reinforced this tendency. This may be related to the switch in responsibility in WWD of the relationship, replacing the logistics

manager with a procurement manager. Although it was recognised that the new contact pattern worked fine, the focus changed.

When it concerns the routines and the resources, the connections were reflected in the adaptations made in order to co-ordinate the two parties. On WWD's part, Supplier C was the sole logistics provider for three years and hence the only one with whom they had such routines. Nevertheless, many of the routines were based on earlier experience with former logistics providers as well as suppliers in other segments. They were hence standard in the sense that they involved the same resources that WWD had used in their former relationships, which were now combined in relatively standard ways in the booking, delivery and invoicing/payment routines. For Supplier C, WWD was one of many customers. However, for each customer, specific routines were designed dealing with service, locations, and transport. Nevertheless, similar to WWD, Supplier C also used many of the same resources in these routines, although combined in adapted ways as to fit to WWD's resources.

If we look at the price negotiation routine first, this used to be quite standard, at least on WWD's part. Until 2003 WWD held annual price negotiations with most of their suppliers where prices were agreed for one year at a time. Similar to this overall company routine, the price negotiations in the relationship between WWD and Supplier C were conducted once a year. However, since Supplier C was WWD's sole logistics provider, the routine was also fairly specific to this particular relationship. In addition, unlike the other supplier relationships, the logistics manager from WWD's CL unit was originally responsible for the negotiations. This changed with the re-organisation in 2003. On Supplier C's part they were used to different negotiation routines with their other customers. Negotiating annually with WWD was, therefore, not considered unusual. What differed, however, was the content of the price negotiations, and the type of services being negotiated.

When the procurement manager took over the responsibility for the relationship after the re-organisation at WWD in 2003, he suggested that the parties should negotiate twice a year instead of only once. The shipping indexes varied a great deal, and it was perceived from WWD's point of view that increasing the frequency of the negotiations would benefit both parties. Supplier C on the other hand felt that this would leave little peace and stability in the relationship, as it would then constantly be a question of prices, which again would result in added tension. Despite this reluctance, the parties started to negotiate twice a year. Furthermore, with the arrival of the new logistics provider the frequency increased to four times a year. The

same price negotiation routine was applied by WWD to the new logistics provider. In that sense it became a standard routine for WWD, as the routine was now performed more or less in the same way with both of their logistics providers.

What distinguished the price negotiation routine between WWD and Supplier C from similar routines with others was the content in the negotiations. The responsible manager from WWD and Supplier C brought with them their experiences, interpretations, and motivation into these negotiations, creating a special way of negotiating. It is likely that the atmosphere in the relationship also influenced the negotiations. Hence, based on the characteristics of the two managers and the relationship between them, the negotiations were adapted to this specific relationship.

Similar to what was the case with other newly established supplier relationships, WWD and Supplier C met frequently in the beginning in order to establish the relationship, hence creating a regular meeting routine. In this sense the meeting routine was considered standard. Both parties had their own procedures for how to implement a new relationship, where the content was adapted to the business partner in question. The parties started to meet every second week followed by once a month. The involved personnel came to know each other well, establishing a certain way of interacting with each other. The meeting routine was as such adapted to this particular relationship. The change in the contact pattern in 2003 accordingly changed the interaction, as the new manager brought his particular characteristics into the meetings. From hereon, the price negotiations were basically the only formal meetings held, although some user meetings took place when required. In addition there were informal contacts. The development was rather similar to the developments in WWD's other new supplier relationships. The frequency of the meetings would, therefore, decline after the relationship had been successfully implemented.

Supplier C on the other hand was interested in continuing the frequent meetings, as this was considered important in order to keep a good relationship. In several of their other customer relationships, regular meetings were held. Hence, the meeting routine with WWD, in terms of few meetings was rather specific to this particular relationship. On WWD's part the meeting routine with Supplier C was unique in the sense that it only had one such relationship. However, a similar meeting routine was established in the relationship with the new logistics provider. Meetings with the new logistics provider were held frequently in the beginning, leaving less time for Supplier C. It is likely that the meetings routine with the two logistics service providers were quite similar on WWD's part, however, they would

presumably differ in terms of the way the parties interacted and the atmosphere of the respective relationships.

The routines at the commercial level between WWD and Supplier C and the organisational resources involved in them, might be considered both standard and specific to this particular relationship. The same was true for the operational routines and the way they combined various physical and organisational resources. When it concerns WWD's part of the routines, the booking, delivery, and invoicing/payment routines were from the beginning conducted in a relatively similar way as with the former logistics providers employed by WWD, utilising the same resources. Similar routines and resources were also likewise used to a large extent in the relationship with the new logistics provider. In that sense they were standard. However, there were some adaptations made to each of these respective providers' routines and resources.

Supplier C offered their customers tailored operational solutions. Though the routines in these customer relationships involved some of the same resources combined in similar sequences, the various routines were adapted to each customer. If we take the booking and delivery routines, for example, Supplier C organised the transport of goods from all WWD's centres to the various destinations. This included co-ordination of resources that were not necessarily involved in other of Supplier C's customer relationships. Furthermore, concerning the booking, this routine was specifically adapted to WWDC in terms of time schedules. The delivery routine was adapted in terms of the transport solution employed, the destinations, and the documents accompanying the goods. Chemicals were in the category "dangerous goods" and required special documentation and handling. Different countries had also different requirements for how such goods should be packed and documented. In addition to the deliveries per se, the information flow was also different. For example, every Friday afternoon, WWDC received a report about the bookings and the actual deliveries for the past week. This routine was specific to this particular relationship, and had been established due to problems in the beginning of the relationship.

When it comes to the invoicing/payment routine, it was agreed in the initial contract that Supplier C should send the invoices to the respective WWD offices booking the goods and that WWD would pay within 30 days. WWDC would receive an invoice at the end of the week from Supplier C for each container booked that week. This was specific to this particular relationship. Earlier WWDC paid for shipments from the production facility and to the destination sites. However, this now changed. In some countries it was considered advantageous for the local WWD office to arrange the

delivery from the port to the warehouse itself. Hence, Supplier C in Norway would now arrange the deliveries from WWDC to the port in Houston only and b accordingly e paid only for that. Despite this change, the invoicing/payment routine was rather standard. Supplier C had similar routines with other customers, and WWD used the same routine with their new logistics provider.

According to the above, we see that the routines in the relationship between WWD and Supplier C and the resources deployed in them were both standard and specific to this particular relationship. While at times WWD and Supplier C and their suppliers and customers used the same resources in similar routines, routines were modifications in order to make this particular relationship and its processes work satisfactorily. This means that WWD and Supplier C were connected in several ways, and that the relationship was characterised as a high-involvement relationship. However, with the arrival of the new responsible manager at WWD and WWD's employment of the new logistics provider, it seems reasonable to argue that the relationship with Supplier C became more standard and at one hand the bonds and involvement between the two actors weaker. Nevertheless, since the entrance of the new provider meant that Supplier C had to cut costs, more discussions were needed with WWD to enable this. Hence, on the other hand, the entrance of the new provider would in fact imply that the involvement in the relationship was still high, though it is reasonable to expect that the trust and commitment somehow were affected negatively.

10.2.3 Connectedness to other relationships

The last relationship characteristic that we shall use to analyse the relationship between WWD and Supplier C, is the connectedness of the relationship to other relationships. Earlier it was pointed out that there were several other relationships that were important to the focal relationship in this case, some of the most important ones being the relationships between WWD's and Supplier C' local offices. One of these relationships, however, did not work well. As a result, WWDC continued with their old logistics provider for this location. Similarly, Supplier C's relationships with sub-suppliers in the US were not successful, resulting in WWD not using Supplier C as planned for the deliveries from Houston to the local hubs in the US. WWD's relationship with their new logistic provider may similarly be considered somewhat negative. However, it might also benefit the relationship between WWD and Supplier C just as Supplier C's other customer relationships may be beneficial to the relationship. For example,

Supplier C developed its Customer Management Program (CMP) based on experience gained from co-operating with other customers. Though WWD was eventually not interested in implementing this program, Supplier C still used some elements of the program in the relationship. Supplier C and the new provider participated together in some of the same meetings with WWD. Solutions developed in one relationship, could hence be used in the other and vice versa. In addition, the two providers might also come to share experiences concerning some of the resources they both used, such as the local agent, and to discuss how to use these better. Hence, as some of the examples shown above influenced the relationship negatively, the latter connections could actual contribute positively to the relationship between WWD and Supplier C.

10.3 Characteristics of learning in the relationship

If we look at the routines and resources in the relationship between WWD and Supplier C during the periods before and after the change, it may allow us to see how learning has been reflected in the relationship. The following questions will aid this investigation: What learning processes have been involved in the evolution of the routines? Where has this learning taken place? What have been the triggers of the changes? We shall also take a closer look at the imprints of these changes and the learning involved, as well as look at the implications for learning from the change in the relationship.

10.3.1 Changes in the routines

Price negotiation routine

The price negotiation routine in the relationship between WWD and Supplier C may as previously mentioned, be considered both standard and adapted to this specific relationship. The first negotiations were based on earlier experiences gained by WWD and Supplier C from their other logistics relationships. As such the two parties' existing knowledge and routines were now exploited in this new inter-organisational routine. The content was, however, different from that in WWD's negotiations with former providers. The new negotiations were conducted centrally and concerned distribution of all WWD goods worldwide. They were much more extensive and contained

more variety than the earlier ones. For Supplier C it was quite similar. It had few agreements as extensive as this one with other customers. As such, we may say that the first price negotiations, though based on exploitation of existing knowledge, also involved inter-organisational exploration of new possibilities.

The price negotiation routine changed in various ways over the years. First of all an important resource involved in this routine was replaced in 2003. This happened as WWD's corporate function was taken away and a procurement manager made responsible for the relationship instead of the former corporate logistics manager. The new manager brought with him his specific characteristics and introduced new elements into the routine and hence possibilities for learning. While the quality and quantity of the logistics services provided by Supplier C had been the main focus earlier, emphasis was now put on the costs of these services. Though Supplier C suggested ways to reduce prices beyond merely lowering costs on existing solutions, WWD was not very interested. They preferred instead price reductions in terms of exploiting existing solutions. Focusing on price was a general trend within WWD. The company faced difficult times, and all units had to save money. Benchmarking, in particular related to price, was an important means in this respect. Hence, we may say that learning outside the immediate routine, that is off-line learning by WWD centrally, triggered the change in the price negotiation routine between WWD and Supplier C. In addition and highly related to the increased focus on price, the new manager wanted the parties to negotiate twice a year. This provided the possibility to refine and exploit the existing routine.

Finally, as we have seen, the introduction of the new relationship resource in terms of WWD hiring the second logistics provider also changed the price negotiation routine between WWD and Supplier C. As such, WWD's exploration resulted in changes in the routine. The negotiations became even more frequent, and the content changed as the negotiations were now based on additional information and possibilities for benchmarking.

In summary, we may say that the initial price negotiations were a result of WWD and Supplier C learning together by combining and exploiting existing knowledge in the new inter-organisational routine. However, these changes in the routine were primarily a result of WWD's explorative behaviour in terms of replacing the initial contact person, increased focus on price, and introducing a new relationship. This learning took place both on-line (by the procurement manager) and off-line (WWD centrally). The triggers to these changes were as such both off-line search processes, as well as dissatisfaction with the existing price negotiation routine itself. Based on

the price negotiation routine and the information and knowledge provided by this routine, inter-organisational exploitation took place.

Meeting routine

The meeting routine in the relationship between WWD and Supplier C stemmed from the need to co-ordinate the parties' respective resources and operational routines. Similar to the price negotiations, the implementation of the relationship was a relatively standard routine, based on earlier experiences by both parties in establishing new relationships. It was highly recognised by the parties that the relationship would require a great deal of attention in the beginning, necessitating frequent meetings. Hence, we may say that WWD and Supplier C exploited their existing knowledge, and as a result developed an inter-organisational meeting routine. In addition to this learning, the routine was further reinforced by the experiences gained during the implementation of the relationship and by carrying out the routine itself. There were many problems in the beginning, and the need to meet was urgent. We may, therefore, say that the on-line learning contributed to reinforcing and refining the routine.

In the beginning of the relationship, the meeting routine was characterised by inter-organisational exploration as the parties sought to find the best possible solutions for the co-operation. Although this learning was based on the parties' existing knowledge and resources, and was as such exploitative, new ways of combining the resources were discussed and decided upon. Most solutions were usually decided at the commercial level, while the implementation was conducted in co-operation with the operational staff. After a while the meetings decreased in frequency. The relationship was perceived implemented, and there was no need to meet as frequently as every second week. Instead the parties met once a month to share information and knowledge about the business, and also to solve remaining problems in the operational processes. With the new procurement manager taking over the responsibility for the relationship, there was yet another reduction in the number of meetings. In addition, this new manager added another focus to the relationship, changing the content of the meetings. The formal meetings were from now on primarily conducted in relation to the price negotiations, and the focus was accordingly on price issues. The main reason for the decrease in frequency was that the relationship was considered successful. WWD also found these formal meetings too time consuming. The parties were in regular contact by phone and e-mail anyway. In addition, when WWD hired the second logistics provider, they spent a considerable

amount of time implementing this new relationship. Less time was consequently left to the relationship with Supplier C.

In summary, we may say that the change in the frequency of the meeting routine was primarily because of satisfaction with the current state of the relationship. This differs from what is often seen as the main cause of changes in routines, that is, dissatisfaction, which may also explain why the content of this routine changed. The drop in the frequency of the routine may be related to its function. The routine itself was based on the exploitative behaviour of the two parties. However, this constituted an important arena for learning, allowing both exploitative and explorative behaviour. When the parties first met, the main focus was on how to improve WWD's existing routines, hence exploiting existing solutions. However, the meetings also invited new ideas, based on Supplier C's suggestions and brainstorming by both parties looking for alternative solutions. After a while, the parties had decided their strategy, which required further refinement of the routine in order to create stability. This exploitative behaviour was one reason for the reduced frequency in the meeting routine.

The meeting routine can be seen as a high-level routine as it facilitated changes in operational routines. More precisely, this routine may be considered as an arena where high-level routines was conducted and further developed. For example, in the beginning of the relationship the parties established the meeting routine based on earlier experience. The parties used their existing intra-organisational knowledge for implementing new relationships. In addition, the first meetings concerned the processes involved in the distribution from WWDC to the various destinations only. Based on the experiences gained from this first location and the standard operating procedures developed for this particular site, the routines for the other main centres were implemented. Hence, we may say that WWD and Supplier C developed a relationship-based knowledge for implementing these routines, facilitated by the meeting routine. This would also concern specific ways in which the parties solved future problems.

Booking routine

During the initial meetings between the various corporate staff members from each of the parties, including the key contacts, the overall booking routine in the relationship between WWD and Supplier C was discussed and agreed upon. It was decided that the new routine would be based on WWD's present booking system, which most of the centres employed. The routine was described in the standard operating procedures developed for the

relationship. In addition, specific manuals were developed for each centre and each destination together with the operational staff. The centres thus had their own adapted versions of the general booking routine. WWDC, for example, had an existing booking routine with its former logistics provider, reflecting its specific production and selling pattern. This was now transferred to the relationship with Supplier C, with some adjustments in order to comply with Supplier C's existing routines and resources.

The establishment of the booking routine is an example of exploitative learning in the sense that WWD's existing booking system was used as the basis for the new inter-organisational booking routine. It was a relatively standard way of booking, and Supplier C was able to use their existing resources in handling these orders. As notice earlier we may say that the establishment of a new inter-organisational routine will always contain exploration, as new heterogeneous resources are combined. The heterogeneous aspect of these resources means that the combinations will also always be new. However, if we look at the booking routine in this case, the sub-routines and resources involved were very standard. The way they were combined into the overall inter-organisational booking routine was also standard. Hence, we may say that exploitative rather than explorative learning took place. Although it may seem that Supplier C was the one having to adapt to WWD's existing booking system, the learning process was also inter-organisational. Commercial and operational staff from both parties jointly discussed and developed the manuals for each of the centres. As this learning took place outside the immediate performance of the routine, we may say that it was an off-line process.

The operational staff at WWDC and Supplier C had not worked together earlier, but based on the written manuals the booking routine was implemented. An on-line learning process took place as the parties engaged in the routine. The respective operational staff at WWDC and Supplier C had to learn about each other, and find ways to make the routine efficient and stable. This included learning about the way the counterpart performed the routine and learning about the respective resources involved by both parties in the routine. The operational staff at Supplier C, for example, had to familiarise themselves with WWDC's booking pattern, which was further based on the buying patterns of chemicals of other WWD offices' and their customers. On WWDC's part, they had to learn to relate to a new agent employed by Supplier C in the local port. Even though Supplier C had a contract with this agent, WWDC arranged for the collection of the goods with this agent on a daily basis. One of the main matters that the parties had to agree on was the time scheduling of the booking. The existing manuals did not cover this in enough detail. In order to co-ordinate with the other

business unit resources, including the agent and the shipping companies, WWDC and Supplier C had to agree on which days the booking should take place and the time of day. In addition, it was also important to agree on the time of the booking confirmation. This turned out to be a trial and error process, which finally resulted in a specific time-schedule for the booking routine.

The booking routine remained very stable after the parties agreed on the timing. Only minor improvements were made to solve the various problems that occurred, such as establishing a sub-routine for the booking reports. The routine was, therefore, perceived very satisfactory. In the beginning of the relationship, the intention was to develop a common Electronic Data Interchange (EDI) platform, implying that all communication between WWD and Supplier C, including orders, would be transmitted via EDI links. This was a central issue in the overall standard operating procedures. Supplier C had already a well-established system, which could be adapted to WWD. A project group was established in order to look at the possibilities. However, when WWD re-organised, they dissolved the project. WWD did not want to dedicate any more resources to this matter. Hence, the idea was never carried out, leaving this alternative unexplored. After this time, the learning processes involved in the booking routine remained exploitative.

The booking routine changed to some extent when WWD decided to hire the second logistics provider. The new provider was given the responsibility for all deliveries to the Far East, as WWD found that it was cheaper than Supplier C on these locations. This resulted in a decrease in the number of locations handled by Supplier C and hence fewer bookings. The change was not as such caused by dissatisfaction with the routine itself. Rather it was triggered by an increased emphasis on price and benchmarking at WWD, and consequently WWD's intra-organisational explorative behaviour. The remaining bookings in the relationship between WWDC and Supplier C were not affected to any large degree, and the change was merely of a quantitative type. On WWDC' part the variation increased, as it now had to relate to two different providers, bringing different experiences into the relationship relating to the bookings.

Delivery routine

Similar to the booking routine, the overall delivery routine in the relationship between WWD and Supplier C was a result of the initial discussions between the parties at the commercial level. The new routine was based on a combination of WWD's and Supplier C's existing routines and resources. It

was nevertheless different from WWD's routines with former providers and Supplier C's routines with other customers, respectively. This was first of all related to the extent of the delivery routine, and the fact that it would be global in character. Furthermore, for Supplier C, WWD's products required different handling in addition to distribution to locations all over the world. The chemicals, for example, were in the category of "dangerous goods", and such products required special treatment. Supplier C operated a different network of various local offices, agents, shipping companies, and road carriers than those of WWD's former logistics providers. This meant that the routing might differ, in terms of which lines were used and to which ports the goods was distributed. It follows from this that although the new routine was built to a large extent on existing routines and resources, and as such an exploitation of these, both parties introduced new and different resources into the relationship.

The responsible managers at WWD and Supplier C together with operational staff members discussed the various solutions and ways to combine new and existing resources. Accordingly, both exploitative and explorative learning processes took place in the initial discussions between WWD and Supplier C about the deliveries. This simultaneously exploitive and explorative off-line learning process resulted in an overall delivery routine, which was described in the standard operating procedures. This was further distributed to the various centres, which would make their own versions of it. Specific manuals were made for each of the centres and the various destinations, involving local representatives. Now a more on-line exploitative behaviour would follow, implementing and adapting the agreed upon solutions.

WWDC was the first main centre to implement the new delivery routine with Supplier C. The experiences gained from these first deliveries were further used when implementing the routine at the other centres. There were several problems with the deliveries in the beginning. Though WWDC and Supplier C seemed to get along well, the communication between some of the local offices was not good. Apart from the operational staffs themselves, the key contacts at WWD and Supplier C were often involved in solving the problems. Though the intention was for the operational problems to be solved by the operational staff members themselves, it was considered necessary, at least in the beginning, to also involve the commercial contacts. Both WWD and Supplier C investigated their respective parts of the overall routine, looking for bottlenecks. It soon turned out that the information flow was inadequate, and efforts to improve it were made.

Throughout the years, the delivery routine was further improved and modified in various ways, primarily in a similar exploitative manner as the

initial problems. Examples of such changes were modifications of sub-routines such as the handling of complaints and time schedules. The changes were triggered by dissatisfaction with the routine, and solved both on-line and off-line. However, after the CL unit at WWD was removed, the operational staff members at the various sites most often handled the problems themselves.

Similar to the booking routine, the delivery routine changed due to the introduction of WWD's new relationship with the second logistics provider. As a result of this off-line explorative learning process at WWD centrally, the number of deliveries handled by Supplier C was reduced. WWD's increased focus on price also resulted in an additional change in the routine. For some locations, Supplier C would only arrange the delivery to the destination port and not all the way to the local WWD office. It was assumed that the local WWD offices were more capable of obtaining better prices due to their knowledge of the local market. Again intra-organisational exploration at WWD changed the inter-organisational delivery routine. More variations in WWD's experiences were hence provided, as new locations for learning were created. These were used in the benchmarking of Supplier C's service of port-to-door distribution for other destinations as well.

Invoicing/payment routine

The invoicing/payment routine in the relationship between WWD and Supplier C was standard and very stable. Similar to the booking and delivery routines, this routine was discussed and decided upon on a commercial level based on the two parties' former routines. As such the routine was established by exploiting existing routines and resources. The overall routine was described in the standard operating procedures and in the specific manuals for each of the centres. Invoices would be consolidated and sent weekly. However, the various centres and their respective Supplier C counterparts were free to decide the time scheduling themselves.

At WWDC, the standard operating procedure was followed carefully, and few adaptations were made. The same operational staff members at each company involved in the other operational routines also handled the invoicing/payment routine. These persons knew each other well, and the co-ordination between them, necessary for this routine, worked properly. One thing that the parties had to decide upon was how to handle discrepancies between the invoices, the actual deliveries, and the payments. The invoices might, for example, sometimes be incorrect, or a container was left behind in a port. The parties agreed that if payment already had taken place, a credit

note would be issued. To the extent that the invoicing/payment routine actually changed, this was in an exploitative, on-line way, as the operational staff aimed at improving and refining the existing routine and the resources involved. However, similar to the booking routine, the routine was supposed to be handled via EDI links. This would have represented a substantial change, at least for WWD, who had never used its ERP-system resource in such a manner. It would have triggered an explorative learning process, if WWD had joined Supplier C in this effort. However, as was noted earlier, it was never carried out in practice.

Concerning the arrival of the new logistics provider, the invoicing/payment routine between WWD and Supplier C itself was hardly affected. The change was merely in terms of a reduction in the number of invoices from Supplier C and the amount of money paid. Similar to the other operational routines, the reduction in number can be considered as a result of WWD's explorative behaviour, rather than dissatisfaction with the routine itself.

In this section we have looked at how the various routines in the relationship between WWD and Supplier C and the resources used have evolved, based on the questions posed in the beginning of this section. We have identified various learning situations, and seen how and why they have occurred. In the next section, a further analysis of the imprints and implications of the various change and learning processes in the relationship will be presented.

10.3.2 Implications of changes in the routines and the change between relationships

The way the various routines and resources in the relationship between WWD and Supplier C have changed throughout the years may be further analysed in terms of where the imprints of these processes may be found. Are they local to the individual routine, or have they propagated to other routines within or outside this focal relationship? In the following section a further analysis based on these questions is provided. Furthermore we shall also investigate what implications for learning we may expect following from the change between relationships.

Imprints of changes and learning in the routines

The price negotiation routine in the relationship between WWD and Supplier C changed both in frequency and in content over the years. During this

period, WWD in general increased their price focus, and accordingly their supplier relationships were affected. The changes in frequency and content in the price negotiation routine in the relationship between WWD and Supplier C was related to this price focus. However, this concerned most of WWD's other negotiation routines as well. The propagation of these changes was not due to the specific routine in the relationship between WWD and Supplier C, but was a result of WWD's strategy. Nevertheless, the changes and learning in this particular routine may be seen as having direct implications for other routines both within and outside this focal relationship. For example, it was noted by Supplier C that the increased price focus left little stability to the relationship, hence affecting the operational routines in various ways. Supplier C had to find new ways of reducing costs in order to comply with WWD's demands and also be able to compete with the new provider. This was primarily accomplished by making the operational routines more efficient. What happened during price negotiations also affected WWD's relationship with the new provider. If Supplier C was unable to offer competitive prices and service, WWD would consider the new provider's offer instead. This meant that the routines in the relationship between WWD and the new provider were likely to be affected by the price negotiation routine in the relationship between WWD and Supplier C.

Similar effects can be identified in the meeting routine. The meeting routine was used to create changes in other routines in the relationship. Especially in the beginning, the meetings had significant effects on the operational routines. It was noted earlier that relationship-based knowledge was created and used during these meetings, which had further implications for how the two business partners co-operated. WWD also used this knowledge in the relationship with its new logistics provider. Hence, what was learned in the meeting routine in the relationship between WWD and Supplier C was transferred to WWD's new relationship and routines with the new provider. When we look at the changes in the meeting routine itself, relating to frequency and content, we may also identify some implications outside the immediate routine. Given that price became increasingly important in these meetings from 2003, and also that the formal meetings now primarily concerned price negotiations this resulted in the cutting of costs becoming the main focus. While Supplier C suggested various alternatives to existing solutions, WWD has been mostly concerned with making existing operations more efficient. However, the price pressures and reduction in the number of meetings provided less time to discuss improvements and ways of extending the relationship. Hence, finding solutions to reducing costs or searching for synergy effects was hampered.

As to the operational routines in the relationship between WWD and Supplier C, some of the changes and the learning in these were primarily local to the particular routine, while others affected other routines within and outside the relationship. The booking routine was very stable throughout the years. However, in the beginning there were adjustments made, such as the establishment of a booking report sub-routine, and how complaints and discrepancies in the invoices were handled. These adjustments were primarily local to the individual overall routines, while other adaptations in the routines had implications for other routines. The time of booking, for example, influenced the time of pick-up of the goods. The delivery routine similarly changed due to experiences gained. One of the most pertinent changes was initiated in recent years. It concerned the replacement of a door-to-door solution by a door-to-port solution for various locations. This implied that rather than delivering all the way to WWD's local office, Supplier C was now only responsible for delivering to the port of a specific area. The local offices themselves would arrange the last leg of the delivery. This change implied that new relationships and routines had to be established between WWD's local offices and local agents. Hence, the changes in the delivery routine in the relationship between WWD and Supplier C had implications for routines in other relationships, in terms of changes and new learning possibilities. The final operational routine, the invoicing/payment routine, did not change to any large degree, and adjustments were made locally to this particular routine. For example, the parties agreed that discrepancies between an invoice and the actual delivery would be handled by creating a credit note. This was perceived as the most efficient solution to the problem.

Learning implications of the change between relationships

What implications for learning can be identified from the change in this case, relating to WWD employing an additional provider? We may assume that since Supplier C's position as a sole provider of logistics services to WWD was now over, past, present and future learning in the relationship between WWD and Supplier C were also affected.

One of the main drivers for the change may be attributed to WWD's increased focus on price and benchmarking. When the procurement manager replaced the logistics staff in the relationship, he brought with him a different perspective to the relationship. He, for example, regularly used benchmarking, which had become a routine among the procurement managers at WWD. This affected the relationship with Supplier C in various ways. Firstly, it affected the routines involved in the relationship. For

example, the content of the interaction in the meeting routine between the two parties changed. The meetings between the parties were earlier focused on developing the relationship and improve the business. The two parties cooperated extensively. However, though the matter of ensuring efficiency of the processes was still on the agenda, price was more dominant in the following discussions. Supplier C noted that this left little stability to work with the existing solutions, as these had to change continuously in order to reduce costs. As such, the content of the meeting routine changed in terms of what was discussed and what type of information was being exchanged, hence affected future learning.

The increased focus on price and benchmarking resulted in WWD's employment of the second logistics service provider, which accordingly affected the relationship with Supplier C'. From being a sole provider of the logistics services to WWD, Supplier C now had to compete with another provider. When WWD was adding a second provider, despite having enjoyed a successful relationship with Supplier C it is likely that Supplier C's motivation for learning decreased. On the one hand it could very well increase as well, as Supplier C now knew that WWD continuously compared their services and prices with those of the new provider. Hence Supplier C was encouraged to suggest improvements to existing solutions and also alternative solutions for reducing prices. One suggestion was, for example, that they would handle all of WWD's logistics, including warehousing and distribution, and not only the transportation. Supplier C knew that they were not the cheapest choice; however, they argued that they could provide the best total service package. However, WWD was not very interested in these suggestions. Firstly, WWD perceived their logistics as being the company's core competences. Hence, leaving all logistics to Supplier C would affect the company's identity. Furthermore, it would also involve a complete change in the existing resource structures that had been built over years. Given these consequences, WWD was mostly interested in exploiting the existing solutions in the relationship with Supplier C.

Supplier C was interested in investing in the relationship with WWD despite being replaced by the new provider on several destinations. Supplier C wanted to keep the relationship with WWD, and by offering new and improved solutions they sought to compete with the new provider. However, we may expect that there would eventually be a trade-off in this respect. If the new provider kept taking over more of the destinations, Supplier C's motivation might be lessened. The resource investments could hence quickly appear wasted. Supplier C might as such be reluctant to engage in further adaptations and knowledge development in the relationship with WWD. This was acknowledged by WWD, and it was, therefore, perceived important

to let Supplier C' keep a share of approximately 80% of the total distribution. Otherwise it was feared that Supplier C might lose interest. WWD was also afraid that this might affect the agreed upon prices.

Establishing the new relationship with the second service provider occupied a lot of WWD's resources, and less time and resources were left for the relationship with Supplier C. Even though the frequency in the formal meetings between WWD and Supplier C had been reduced over the years, the introduction of the new provider resulted in even fewer meetings being held. This had presumably some implications for the learning between the parties at the commercial level. As the meetings between WWD and Supplier C declined in frequency, important learning arenas were taken away, reducing further possibilities for learning. However, the reduction in the number of meetings and presumably reduction in learning also left more time for each of the parties to actually gain experiences from existing routines. Firstly, this stability provided possibilities to benefit from past learning. In addition, more accurate feedback about the appropriateness of the existing solutions was gained, which could be used as a benchmark for evaluations of the routine. Nevertheless, despite the reduction in meetings per se, the price negotiations increased. In order to cope with WWD's increased price pressures, Supplier C had to continuously make improvements in the existing routines in order to increase the efficiency. As Supplier C noted, this left little peace and stability for the relationship.

The operational routines were also affected by the change. The booking, delivery, and invoicing/payment routines were based on past experiences of both an exploitative and explorative nature. They embedded as such relationship-specific knowledge. Some of these routines were terminated because of the change. This meant that the learning processes leading to the specific use and combination of the resources involved in these routines were wasted. The change influenced, for example, the unit resources involved in the operational routines and the relationship between them. The local offices and agents of both companies in the Far East were highly involved in the routines that were now being terminated. They had developed sub-routines and knowledge of how to handle these specific deliveries. For WWD's local offices the new agreement meant that new routines and knowledge had to be developed, and thus new arenas for learning occurred. This was also the case when considering a door-to-port solution instead of door-to-door solution only. This implied that WWD's local offices would have to communicate and negotiate with local transport providers, and consequently learn how to co-ordinate and adapt rather than being instructed by WWD centrally. For Supplier C in the Far East, the learning efforts leading to the existing routines were now to some extent

wasted. However, similar to WWD's offices, they could also use this knowledge in their relationships with other customers.

In the above section we have analysed the implications of the change and learning processes in the relationship between WWD and Supplier C. Firstly, we looked at the imprints of the evolution processes in the routines. We saw that most of the changes and learning in the routines in the relationship between WWD and Supplier C had implications for other routines within and beyond the particular relationship. Some of these implications were merely related to changes in other routines, while others required and triggered learning in other routines and in other relationships. Learning implications of the change itself were further identified. The change in the relationship between WWD and Supplier C, following from WWD's new relationship with an additional provider, had various implications for learning in the relationship. These were related to both the form and content of the commercial routines, as well as the termination of operational routines and resource interfaces involved in these.

10.4 Discussion

In this chapter the relationship between WWD and Supplier C has been further analysed. The various routines described in Chapter 9 were investigated based on the research issues proposed in Chapter 4 and related to resources and learning. Firstly, the relationship between WWD and Supplier C was analysed in terms of the three relationship characteristics identified earlier. We saw that the relationship had gone through several periods of development, switching forth and back between maturity and development. Focus was further put on the "type of relationship" characteristic, by first identifying the resources used and combined in the routines before and after the change. Next, the connections between the parties were looked at, in particular analysing the routines and the various resource interfaces deployed in them related to degree of adaptation. This further provided an introduction to looking at learning in the relationship, as it showed the kind of knowledge and learning these routines were based on. Learning in the relationship between WWD and Supplier C was analysed by investigating how the routines and the resources deployed in them had evolved all through the years. Finally, the implications of the change and learning processes in the relationship both relating to the evolution of the routines and the change incident following the addition of the new logistics provider, were discussed.

What does this case analysis tell us? The case contributes to a further understanding of business relationships by identifying and analysing the inter-organisational routines and the resources and resource interfaces involved. This further provides a basis for understanding the learning processes in a relationship, and how the different relationship characteristics influence the learning processes. This case illustrates, for example, that relationships go through various stages of development, and that while some parts of the relationship, either commercial or operational, may be characterised as mature, other parts are going through developing stages. This influences learning, showing that explorative learning seems to be more active in developing stages and that in mature stages learning is more concerned with enhancing stability and efficiency in the relationship. In this case we see that the various routines in the relationship and the resources utilised were specific to this relationship, though they were based on past experiences with former providers. The relationship was a high-involvement one, characterised by close connection and adaptation of the routines and resources. In addition, strong actor bonds were established. However, with the new responsible manager from WWD, a stronger emphasis was put on price. In addition, the focus on price resulted in WWD hiring a new logistics provider. WWD used much the same resources and similar routines in the new relationship, and the routines consequently became more standard. It may also be argued that as WWD was hiring a second logistics provider, they signalled a lower degree of trust and commitment in the relationship with Supplier C. We may also expect that this further contributed to weakening the bonds between the parties, and influence Supplier C's trust and commitment negatively.

The case illustrates the importance of various resources and the combination of these when it comes to learning in a relationship. As noted above, the key contacts, representing the business units in the relationship, influenced both the form and the content of the learning. The importance of the physical resources is also evident in this case. Looking at WWDC, for example, the various resources involved in the distribution of chemicals provided certain conditions for the type of routines being established and also the possibilities for learning and changing the routines. As to the chemicals, these products required specific ways of distribution. In addition, the location of the plant and the various ports were important. Furthermore, if the goods was being shipped to Brazil, for example, certain local regulations needed to be followed. Together the above shows that what can be accomplished is highly conditional on the physical resource structures. This is also reinforced by the knowledge investments made in existing structures. We also see that many of the routines in the relationship between WWD and Supplier C made use of existing resources, combined in both standard and adapted manners. This

understanding of routines and resource interfaces provides an understanding of why the routines, at least when first implemented, primarily change in an exploitive way.

In summary, one of the most important lessons learnt from this case is that learning in a relationship is related to the context of the focal relationship. Much of the learning in the relationship between WWD and Supplier C following the change related directly or indirectly to the new relationship. The change affected future learning, as new information and information channels were established. In addition, it triggered an un-learning process in terms of the routines and resource interfaces that were terminated. In addition, this analysis shows that learning in relationships is not always deliberate. WWD's learning, in terms of benchmarking and the new relationship, forced various learning processes in the relationship between WWD and Supplier C. For example, the existing solutions had to be improved in order to reduce costs. This learning may be considered as "forced" upon Supplier C. The case shows in fact that learning in relationships takes place in at least two different ways. Firstly, learning in a relationship may be triggered by one of the parties posing learning requirements upon their counterpart, resulting in changes in the overall inter-organisational routine or in this party's sub-routines. Secondly, the parties may together engage in a joint learning process resulting in changes in the routines in the relationship.

Chapter 11. Discussing the main findings

11.1 Introduction

The aim of this thesis has been to investigate one type of learning across firm boundaries, i.e. learning in ongoing relationships between customers and suppliers in industrial settings, by linking the concepts of learning, business relationship, and routines. In Chapter 4, the possibilities of connecting business relationships and learning through the means of routines were discussed. This theoretical discussion was based on insights from the IMP perspective of business relationships and networks, and the adaptive perspective of organisational learning. The discussion resulted in some specified research issues for how to approach learning in business relationships. Together with the insights provided by the empirical discussion in Chapter 3, these issues were applied in the case study. This chapter offers an overview of the main findings from the three sub-cases. Firstly, we shall briefly recapitulate what each of the sub-cases illuminates relating to learning in business relationships, and look at the findings in an overall perspective. Next, we shall see how these findings together contribute to shed light on four different learning situations, which have appeared as important throughout this study.

11.2 What have we learned?

Each sub-case in this study has been described and analysed in two rounds. The first round was based on insights gained from the empirical discussion in Chapter 3. This chapter presented an empirical example of the relationships between WWD and a new Chinese supplier. It revealed five different inter-organisational routines that seem important for the functioning of an industrial exchange relationship. The first analyses of the cases aimed at giving an overview of the relationships, by investigating the routines involved. The cases were centred on a major change in the respective relationships, and how this affected the routines. The routines were as such investigated in two periods, before and after the change.

The second round of analyses was based on insights from the theoretical discussion in Chapter 4. In this chapter, learning in business relationships was related to specific relationship and learning characteristics. These

characteristics were further used to see how learning was reflected in the three relationships. Furthermore, the second round of analyses looked at the implications of changes in the routines, including those following the specific change incident, for resources and learning in the relationships.

What have we then been told about learning in business relationships, based on the three sub-cases and the respective analyses? Each of the cases offers insights into the phenomenon, which are both specific to the particular case, as well as more common features of all three cases. The main findings from each of the analyses were presented in the discussion sections at the end of the respective sub-cases. In the following we shall briefly recapitulate these findings.

The first case revisited

The first sub-case concerned the relationship between WWD and Supplier A. The relationship had been influenced by different changes, such as changes in contact persons and changes in the operational routines over the years. However, it was considered stable and mature at the beginning of the 21st century. Then changes occurred. WWD staff at the IDC in Rotterdam complained about late deliveries and of products out of stock. This was confirmed by Supplier A's low score on WWD's performance evaluations. Consequently, an intensive period of problem solving and learning took place. Although many of these efforts helped, hence creating stability again to some parts of the relationship, a continuous problem-solving process took place as new challenges occurred. This was not only related to problems, however, but also the fact that WWD decided to replace Supplier A on substantial parts of the total product range. Hence, this relationship went through cycles of maturity and development throughout the years, involving learning of different types.

According to both WWD and Supplier A, the relationship was characterised by relatively standard routines, using the same resources in a similar way as with other suppliers and customers, and there was little formal contact in the recent years. The relationships could, therefore, be viewed as a low-involvement relationship. However, the parties knew each other well, and the connections were established through years of interaction and adaptations. Both parties recognised that the actor bonds were close in the early years of the relationship, but that in recent years they became weaker. In 2002, increased attention was given to the relationship, resulting from a need to improve and tighten the connections between the parties. Because of this need and the following attempts of adapting the interfaces, it may be

argued that this relationship was by no means a low-involvement relationship. However, the learning was mostly in terms of exploiting existing solutions.

As to connections to other relationships, the relationship between Supplier A and WWD's was connected to other relationships in terms of other relationships posing opportunities and constraints to the relationship. For example, Supplier A's relationship with its largest customer contributed to ideas about alternative ways of conducting the relationship with WWD, such as using direct deliveries. However, WWD was not very positive to these suggestions. Furthermore, WWD's relationships with customers were a driving force behind the improvement efforts made to ensure adequate stock levels and hence, WWD's own delivery performance towards customers. Finally, WWD's new relationship with the Chinese supplier had important implications for its relationship with Supplier A, and these two relationships thus became connected. Accordingly learning in one of the relationships did also affect the other relationship. One example is WWD and Supplier A developing a new safety solution on the gas distribution systems and hence preventing the Chinese supplier to supply these products to WWD.

If we take a closer look at the learning characteristics of the relationship in this case, some of the most interesting findings are related to the triggers of learning. The case illuminates, for example, the importance of dissatisfaction with existing routines as a main trigger. This is reflected in the adjustments that took place from 2002 of the various operational routines. On-line experiences by WWD's operational staff members resulted in major dissatisfaction with the operational routines, which was further reinforced by WWD's performance evaluation routine. These problems were primarily solved off-line, i.e. by the responsible managers at the commercial level. Another interesting issue illuminated in this case is the interrelatedness between the routines. Many of the efforts to improve the delivery routine, for example, were affected by and affecting other operational routines. In addition, it clearly shows the relatedness between commercial and operational routines, hence illustrating how off-line learning works as triggers to learning and changes in operational routines. The break in the relationship itself and consequently the changes in the routines were also triggered by explorative off-line learning behaviour at WWD. This involved an increased use of the benchmarking routine together with the new sourcing strategy, implying sourcing from low cost countries.

Furthermore, this case demonstrates that learning is not always deliberate and voluntary. There are several examples of changes in the routines in this relationship that occurred as a result of one of the parties' initiatives. One

example is that Supplier A had to adapt to the break in the relationship with WWD, initiated by the latter. Another example is related to Supplier A's learning with their sub-supplier and the Czech production unit, which resulted in a specific delivery schedule. In order to establish an efficient delivery routine with WWD, a change in days of shipment was needed. Hence, WWD had to adapt to Supplier A's learning. These examples illustrate that one party's learning often have profound implications for the other party. The learning can result in both changes and needs of learning in the inter-organisational routine, as well as in various intra-organisational sub-routines of this routine.

The second case revisited

The second sub-case in the study concerns the relationship between WWD and Supplier B. By 2003, the relationship had reached a stable and mature stage, both at the commercial and operational levels. The relationship was considered as very good, including high involvement from both parties. In particular, the contact persons at the commercial level had established close bonds, and although the operations were considered relatively standard, there were several attempts of improving and extending them, both in an exploitive and explorative manner. Changes occurred, however, with the loss of the original key account manager at Supplier B. The stability at the commercial level was disrupted by the introduction of several new contact persons at Supplier B. Accordingly, the bonds between the parties weakened, although the operations remained more or less the same. Hence, we may say that the degree of involvement in this relationship became reduced, at least concerning trust and commitment at the commercial level. In addition, this affected another relationship to which the relationship between WWD and Supplier B was connected. The two parties had a joint purchasing agreement, where they would buy together from a supplier of welding consumables via a professional purchasing company. This agreement was terminated, and though it cannot be fully attributed to the deterioration as such, it was acknowledged that the situation could have had another outcome if the relationship between WWD and Supplier B had worked better.

This case is particularly interesting because it illustrates the importance of different units, represented by specific individuals, for learning. It shows the importance of a meeting routine in a relationship for learning. A great deal of learning takes place off-line and the case shows that a break-down of the interaction at the commercial level influences upon the possibilities for learning. This further relates to another important issue. When considering learning, changes in physical resources and operational routines are often

emphasised. The case supports this idea. However, the commercial meeting routines are not only important means to change operational routines. These routines change themselves, due to on-line learning. In the relationship between WWD and Supplier B the change in the meeting routine resulted in attempts of explorative learning not being materialised, such as the proposed new distribution routine in Asia. To a large extent the operational routines remained as before, after the change in the commercial contact pattern, with a few exceptions. This may be attributed to the fact that an important arena for learning disappeared, and hence an arena for changing the operational routines.

This case further illustrates that learning is constrained in various ways. WWD was dependent on Supplier B, since no other supplier could provide the high-quality electrodes required. Instead of switching to a new supplier and thus providing extended possibilities for learning, WWD was to a large extent locked-in with what they eventually perceived as a dissatisfactory relationship with Supplier B. Furthermore, this case also illustrates that learning is not necessarily voluntary. Much of the learning resulting in various changes in the routines in this relationship resulted from initiatives by one of the parties, which the other party had to adapt to. An example of this is what happened when Supplier B decided to move the production of all electrodes to Hungary, and how this affected WWD, which in turn required them to move the production back to Sweden again. This shows that learning in a relationship may result in changes in the direct interaction between the parties, and also in changes in one or both of the parties' sub-routines.

The third case revisited

The final sub-case in this study concerns the relationship between WWD and Supplier C. From 2002 until 2005, Supplier C was WWD's sole logistics service provider. Following an intensive implementation period, the relationship was relatively stable by 2003 with good communication lines. However, changes took place when WWD's Corporate Logistics (CL) unit was removed in 2003 and a new procurement manager became responsible for the relationship. The new manager was naturally more concerned about price, which affected the form and content of the communication. This manager was also a driving force behind the establishment of WWD's relationship with the second logistics provider. It seems reasonable to say that while this relationship used to be a high-involvement relationship, this changed following the introduction of the new relationship, at least when it concerns commitment and trust between the two actors. Nevertheless, the connections between the remaining operational routines and resources

remained close, and it may seem that the parties got increasingly involved, as they aimed at making the operational connections more efficient through further adaptations.

This case illustrates the importance of different resources and combinations of resources in a relationship. Firstly, this relates to the involvement of different unit resources, represented by various individuals in a relationship. Their knowledge and motivation affect the learning in a relationship. Furthermore, the case illustrates the importance of existing physical resource structures for learning. What can actually be accomplished, in terms of learning and changing is dependant upon the physical resource structures. For example, WWDC's location, the ports, and the agents in the area affected how the routine was performed. The established structure consisted of many different routines and resources to be combined. On the one hand this prevented changes and learning in situations where the combinations had become rigid, and extensive knowledge investments were made in existing structures. On the other hand, changes in one resource or combination of resources often affected other related resources, creating dynamics in the routines. For example the switch from a door-to-door solution to a door-to-port solution in this case illustrates this point. The routines in the relationship between WWDC and Supplier C made use of a standard combination of resources, similar to WWDC's routines with former providers and Supplier C's established network. This may explain why the routines primarily changed in an exploitative way during the relationship.

Finally, this case illustrates how learning in a relationship is affected by the relationship context. Much of the learning in the relationship between WWD and Supplier C following the change was related directly or indirectly to WWD's new relationship. This was due to the new information channels established. The case also shows the "dangers" of learning and adapting to a specific relationship partner. Supplier C was replaced by the new provider on several locations, and the existing routines and resource interfaces involved in these locations were terminated. Hence, some of the learning was wasted. This further underlines that learning in relationships is not always deliberate. A company must often adapt to what its counterpart decides. Again, this case shows that learning in a relationship may be triggered by one of the parties posing learning requirements upon the counterpart, resulting in changes in the overall inter-organisational routine or in this party's sub-routines.

11.3 The findings in an overall perspective

In this section, the findings from the study will be considered in an overall perspective. Focus will be put on relating the findings to the learning characteristics, however, first we shall briefly summarise the findings relating to the main relationship characteristics. The three sub-cases show that when it concerns both relationship development stages as well as degree of involvement, it is difficult to give a relationship a specific characteristic. Instead, relationships seem to pass through different stages several times, involving periods with more intensive learning. In addition, some parts or levels (e.g. commercial and operational) of the relationships may be characterised by stability while other parts may be unstable and developing. The same is true when it comes to degree of involvement. For example, while the operational routines and resources involved in them may be considered as relatively standard and stable, there may be close actor bonds in terms of commitment and trust on the commercial level. In addition, problems occur “even” in standard routines, calling for learning and adaptations to make them work properly, although this learning is mostly in terms of exploiting existing routines and resources combinations. This indicates that there is no such thing as a low-involvement relationship. Finally, the case study shows that relationships are closely connected to other relationships, although not necessarily in a formalised and deliberate manner. Instead, the sub-cases in this study show how the involved parties’ other relationships with their customers and suppliers more indirectly pose possibilities and constraints on the relationships. Accordingly, the learning effects from these other relationships are not planned in any sense, relating to for example the suppliers collaborating in order to improve their supply to WWD.

If we look at the learning characteristics of the three cases in an overall perspective, we see that the cases reveal aspects of such learning being a joint feature of all the sub-cases, as well as aspects that are more specific to one of them. It was suggested in Chapter 4 that learning could be investigated in terms of certain dimensions, describing the learning process as either exploitative or explorative, and taking place either on-line or off-line. In addition it was also suggested that this learning would be triggered either by intra-organisational or inter-organisational initiatives. This latter dimension will be treated more thoroughly in the next section. The below figure illustrates examples from the sub-cases according to the learning dimensions; exploitative versus explorative and on-line versus off-line.

		Mode of learning	
		Exploitation	Exploration
Learning location	On-line	<i>Time scheduling of ordering/booking (Case 1 and 3), handling delivery problems and complaints (Case 3)</i>	<i>Establishing the relationships (Case 2 and 3), new units/persons in the price negotiation and meeting routines (Case 2 and 3)</i>
	Off-line	<i>Time scheduling of delivery (Case 1), Direct deliveries from Hungary to Rotterdam (Case 2), Directing the information flow and booking reports (Case 3)</i>	<i>Establishing the relationships (Case 2 and 3), new delivery solution (Case 3)</i>

Figure 11.1 Examples of learning in the three relationships

All the three sub-cases in the study include examples of both on-line and off-line exploitive and explorative learning. However, it is quite clear that learning in the relationships considered has primarily been relating to exploiting existing routines and resources. This learning has often been triggered by dissatisfaction with the existing routines, and aimed at re-establishing stable and efficient exchange flows. Only occasionally, more explorative learning has taken place. This has particularly occurred in the beginning of the relationships, when the parties have established the routines. Establishing new relationships between two different actors will always entail an explorative learning process, as routines and resources not combined earlier have to be connected. However, as the two last cases in this study show, the establishment processes also contain exploitation, as the parties' existing routines and resources are used as a basis for the new relationships. In addition, exploration has been enabled, as new persons have been involved in the interaction. Especially, we have seen new interfaces being created both in case 2 and case 3 following new managers becoming responsible for the relationships, hence affecting and changing the interaction and routines at the commercial level in various ways. Furthermore, the learning resulting in the most important changes in the relationships, has primarily taken place off-line, though often based on on-line experiences. This is particularly evident in the two first cases, where the responsible managers at the commercial level are highly involved in the problem solving. A similar situation existed in the third case, where WWD's

CL unit was highly involved in the implementation process and the following problem solving. However, with the replacement of this unit by the new manager, the local units and the operational staff would often solve the day-to-day problems themselves.

The routines and the resources used in the three relationships were considered relatively standard, and this may explain the apparently biased exploitive learning behaviour identified in the relationships. The parties, in particular WWD, aimed at exploiting existing combinations. When specific routines did not work satisfactorily, efforts were made to improve them. However, there were discussions about exploring new possibilities. The debate of the usefulness of directing all the goods from suppliers to WWD's internal and external customers via the IDC in Rotterdam is an example illustrating this issue. However, these often proved to be difficult to change, since the combinations were well established.

Finally, the cases have shown that triggers to learning and changes in a relationship may come both from joint learning processes as well as from one of the parties learning behaviour and initiatives, being communicated and shared with the relationship partner. One of the most important explorative learning behaviours was conducted by WWD, resulting in exploration and exploitation in their supplier relationships. An example from the first case is the new sourcing strategy, resulting in the break in the relationship with Supplier A. This new strategy was explorative in the sense that by sourcing from low cost countries, WWD changed their existing supplier base and solutions associated with it, such as directing all the goods via the IDC, and also its identify as a high-quality distributor.

The third case illustrates a similar example, when WWD first decided to employ a sole logistics provider and hence establish a partnership with Supplier C, and then employing two logistics providers instead. This had severe impacts on the relationship with Supplier C. Hence, the cases illustrate that in some situations one party's learning and suggestions are merely being communicated to the other party, however, resulting in modifications in various routines. At other times suggestions were thoroughly discussed in meetings between the parties, and solutions being developed jointly implemented as changes in the various routines. An example of the latter is the discussions between WWD and Supplier A relating to the delivery routine. Hence, the cases show that learning in business relationships may result in changes in the sub-routines, where resources at each party are directly interrelated, as well as in changes in intra-organisational sub-routines, involving resources at each party being

indirectly related to the other party's resources. This issue will be further elaborated upon in the next section.

11.4 Four different learning situations and imprints of learning

In the above section, we have looked at the main findings from each of the case analyses separately and also in an overall perspective, and have seen how they contribute to the understanding of learning in business relationships. In this section, the findings are further elaborated upon. One of the research issues emerging from the theoretical discussion concerned implications of learning and where imprints of learning are likely to be found. In this section, each of the three sub-cases will be related to four specific learning situations, illustrating this issue: (1) Learning in single routines in a business relationship; (2) Learning between routines in a business relationship; (3) Learning between internal and external routines, i.e. between intra and inter-organisational routines; and (4) Learning between external routines, i.e. between inter-organisational routines. In the following, each of these situations will be discussed, based on the findings from the case study.

Learning in single routines in a business relationship

The first learning situation in the case study relates to learning in single routines. In each of the three sub-cases we find some examples of changes and learning in individual routines, though there are not many. One example from the first case illustrating this learning situation is related to the invoicing/payment routine. Supplier A complained about WWD not paying within the agreed time frames. It turned out that there were many reasons for this. However, one means to improve the payments was that Supplier A would send specified invoices, including which products that were involved. Earlier, the staff members at WWD's financial department had to check this themselves, and it was very time-consuming.

An example from the second case illustrating this learning situation relates to the change in the delivery routine, following Supplier B delivering directly from Hungary to Rotterdam. This change implies that WWD's requirements, for instance relating to the packing of the pallets, had to be handled by the staff in Hungary instead of the staff at the warehouse in Belgium. Though this change affected the sub-routines at the Hungarian site, requiring the staff members to learn a new routine, this is part of the overall delivery routine. As such the change may be seen as local to the delivery routine.

In the third case, the parties established among others a booking report sub-routine, implying that Supplier C would report every Friday to WWDC on the bookings for the previous week, how much that was actually sent and the bookings the coming week. This was primarily in order to improve the information flow relating to the bookings in the relationship, and hence local to this particular routine. In addition, the parties also developed sub-routines for handling complaints about the deliveries and discrepancies in invoices. Finally, there is also an interesting hypothetical situation illustrating this learning situation in this case. In the beginning of the relationship between WWD and Supplier C, a project group was established to look at the possibilities of developing a common EDI (Electronic Data Interchange) platform. The project was terminated after a while, and as such no solution was reached. However, if such a system had been developed, it would have implied a change in the booking routine, as well as the invoicing/payment routine. Instead of manual booking and invoicing/payments, these routines would have been enabled by creating interfaces between the parties' electronic system facilities through EDI links, making them automatic. If this had been implemented, it would have implied severe changes within the two routines respectively.

If we look at these examples, what can be said about learning in single routines? Firstly, when trying to identify this learning situation in the three sub-cases, it turned out that there were in fact few examples of such a situation, at least concerning learning resulting in substantial changes. The changes that were identified were primarily minor adaptations. In addition, the examples where learning did not have direct implications for other routines revealed that they were at least often triggered by learning in other routines.

Learning between routines in a business relationship

Compared to the above situation, there are several examples in the three sub-cases of how routines in the different relationships are connected within the relationships and as such influence upon each other. Such connections can be identified between the operational routines, between the commercial routines, and between the operational routines and the commercial routines.

In the first case, the connections between the operational routines were particularly evident. For example, several of the solutions to the problems with the deliveries were directly linked to other operational routines in the relationships. One reason to the problems with the deliveries turned out to be that WWD and Supplier A were operating with different dates in their

respective systems. WWD used the date of arrival in Rotterdam as a basis for their evaluations, while Supplier A used the date of shipment from Malmoe on their confirmations. As such Supplier A would always be too late, and accordingly score low on the performance rates. The parties agreed that they should both use the date of arrival in Rotterdam on the confirmations and evaluations. Hence, this change had implications beyond the individual delivery routine.

Another means to improve the delivery routine was to make the ordering more predictable. It was among others decided that WWD would send orders twice a week instead of every third month. This enabled Supplier A to plan their stocks and hence deliveries better. Hence, we see that learning and problem solving concerning the delivery routine had implications for the ordering routine. Another example in this case illustrates the connection between the delivery routine and the payment routine. WWD would pay when the goods from suppliers were booked in at the IDC. However, the invoicing/payment routine did not work very well as the payments often exceeded the agreed 30 days, to Supplier A's dissatisfaction. Due to these problems and also closely related to Supplier A's low scores on the delivery performance rates, the reception routine at the IDC was modified. Instead of large shipments once a week, Supplier A would ship twice a week. This helped the warehouse staff at the IDC, making it easier to book in the goods immediately. This thus affected both the evaluations and the payments. The invoicing/payment routine improved to some extent; however, there was in addition a problem with the routing of the invoices within WWD.

We find a similar example in the second sub-case. Supplier B also complained about late payments from WWD. From WWD's side this was attributed to the difficulties with booking in the goods because the pallets would contain different types of electrodes. This delayed the reception work. Hence, in order to cope with these difficulties, it was decided that Supplier B would pack only one type of electrode on each pallet. Hence, because of the search for solutions of the problems with the payments, the delivery routine was changed again, leading to improvements in the former routine.

In the third case there are also several examples of this learning situation. For example, the booking and delivery routines were closely related in the sense that the time scheduling of these two routines was highly co-ordinated. Throughout the years following the establishment of the relationship, the parties modified these routines to match those of the other. Booking was done on specific days and time of the day, so that the goods could be picked up and delivered according to the time schedules of the various sub-routines, i.e. the time of departure of the feed carrier and the shipping lines.

Another link between the routines in the different relationships relates to the connection between the routines at the commercial level. In all the relationships considered the price negotiation and meeting routines eventually became blurred, and at least affected each other to a great extent. In the first case, the price negotiations and the meeting routine affected each other in several ways. WWD was open about their search for alternative suppliers in the Asian market, and this affected the discussions and content in the meetings between the parties. In the second case, the two routines at the commercial level eventually turned into one routine. Following the change in the contact pattern and the price pressures in the markets, the communication between WWD and Supplier B declined in frequency and soon concerned price only. Though prices were supposed to be agreed for three years, continuous price negotiations took place from 2004. The negotiations hence came to comprise the interaction at the commercial level. A similar trend occurred in the third case, when the procurement manager became responsible for the relationship instead of a logistics manager. Hence, the cases show how the routines at the commercial level were highly related.

In addition, in all of the cases we find examples illustrating how the meeting routine worked as a high-level routine, thereby affecting the operational routines. Problems experienced on-line were discussed and solved off-line between the contact persons at the commercial level. The solutions found through off-line learning was then communicated to and implemented at the operational level. Hence, there was a tight coupling between the meeting routine and the operational routines. In the first case this is illustrated by the efforts made to improve Supplier A's delivery performance. Although these problems were often experienced on-line, the responsible managers at the commercial level primarily solved them off-line. In addition, we also find in the cases that the changes in the price negotiation routine affected the operational routines. WWD was open about their search for new suppliers in the Asian market in the negotiations with Supplier A. This knowledge encouraged Supplier A to improve their delivery routine even further.

In the second case, there are also several examples of how the meeting routine worked as a high-level routine aimed at improving the operational routines. An interesting issue in this case is that the changes in the meeting routine itself following from the change at the commercial level did not affect the operational routines to any large extent. However, indirectly, the delivery routine was affected, as it is likely that the atmosphere in the relationship as well as the price issue, influenced upon WWD's decision to employ another supplier for the Flankline project. In addition to the delivery routine, we may also assume that what happened with the flow of

communication also influenced the decision to terminate WWD and Supplier B's joint purchasing project. Although this was also due to WWD's new sourcing strategy, directing its purchasing efforts towards the Asian market, it is likely that if there had been a better contact at the commercial level between the parties, another solution would have been sought. Hence, we see that learning in the routines at the commercial level affected the operational delivery and purchasing routines.

In the third case, there are also examples of this learning situation. In the beginning of the relationship between WWD and Supplier C, the problems with the information flow relating to both the booking and the delivery routines were solved off-line in the meetings at the commercial level. As soon as the implementation problems were solved and the operational routines worked properly, however, the frequency of the meeting routine declined. Consequently, an important arena for learning disappeared. The quantitative changes in the meeting routine were due to satisfaction with the operational routines. Another example in this case is how the meeting routine changed in a qualitative manner, as price became the main content of these meetings. Firstly, the meeting and negotiation routines turned in one period into one routine. Secondly, the increased price focus also affected the operational routines in that Supplier C had to find ways of improving the existing delivery routines. In addition, the choice of a door-to-port solution instead of a door-to-door solution was a result of this change in content towards a stronger focus on price.

In this section, some of the examples of how learning in routines in a relationship affects other routines in the relationships have been presented. These examples are only a few of those identified in the three sub-cases. All the cases provide example of operational routines being connected, and how learning and modifications in one routine often affected other routines. These changes were furthermore often triggered by learning in the commercial routines between the parties, working as high-level routines. This interrelatedness between the routines created dynamics in the relationships, which may be one explanation why relationships seem to go through various stages of stability and development.

One interesting aspect in the second case, relating to this learning situation, is that the operational routines were quite stable, despite the changes in the commercial routines. The loss of the original key account manager at Supplier B and the increased price focus resulted in a reduced frequency of the meetings. As such an important learning arena disappeared, and with a few exceptions, there were not many attempts made to improve the operational routines. This was also because these routines were working

satisfactorily. On the other hand, the change in the meeting routine in the third case, relating to WWD and Supplier C being occupied with price discussions, resulted in several efforts to improve the efficiency in the operational routines on Supplier C's part. Hence, the changes in commercial routines had different effects on the operational routines in these two cases. One explanation may be that while the operational routines in the relationship between WWD and Supplier B were standard and well established, the same routines in the relationship between WWD and Supplier C were unique to this specific relationship. Hence, while there were few real options of improving the routines in the first relationship, there were more alternatives in the latter case.

Learning between internal and external routines

The study shows that inter-organisational routines are comprised by many different sub-routines at each party in a relationship, necessary for performing the overall inter-organisational routine. In addition, there are routines that are merely intra-organisational. These are not necessarily required for performing any of the inter-organisational routines, but influence upon them. In this section, the learning situation, which concerns how learning in such intra-organisational and inter-organisational routines affects each other, is elaborated upon.

One example of this learning situation, which may be identified in all of the three sub-cases, is how WWD's intra-organisational benchmarking routine triggered changes and learning in the inter-organisational routines in the relationships. The benchmarking routine and the new sourcing strategy had implications for all the relationships considered in this study. In the relationship with Supplier A, for example, WWD was increasingly benchmarking Supplier A's offer with those of Asian producers. This finally resulted in the break in the relationship, following WWD finding a substitute supplier for some of the products. As such, WWD's experiences from the SWOP project, manifested in the benchmarking routine had profound impact on the relationship with Supplier A and the routines involved. The same happened in the relationship between WWD and Supplier B, when WWD decided to replace the blue range of electrodes with the Flankline products, supplied by a Chinese supplier. This did not change the routines in the relationship between WWD and Supplier B as such, except in quantitative terms, but it hampered the possibilities of establishing new operational routines between the parties in Asia. Finally, WWD's benchmarking routine also influenced the relationship between WWD and Supplier C. First of all it changed the content in the meeting routine between the parties. Secondly, it

resulted in WWD employing an additional logistics service provider in 2005. This resulted in Supplier C losing the business on the Far East locations, and hence the operational routines established for these locations being terminated.

These examples show that learning in intra-organisational and inter-organisational routines is often connected. In particular, WWD's intra-organisational benchmarking routine proved to influence upon its supplier relationships and the routines involved. All the suppliers in the three cases were replaced by other suppliers on substantial parts of the total volumes, resulting in qualitative and quantitative changes in the routines between the three suppliers and WWD. While the meeting routines changed in both content and frequency in all three sub-cases, the operational routines changed more in quantitative ways, for example in terms of a reduction in the number of deliveries.

Another example of this learning situation is how WWD's performance evaluation routine at the IDC in Rotterdam influenced upon the relationship between WWD and Supplier A. This routine was not necessary for the overall delivery routine in this relationship, and was as such an intra-organisational routine. Based on a more thorough assessment of the results from these evaluations in 2001, WWD discovered that Supplier A was not performing very well. Extensive efforts to improve the performance, as well as problem solving followed, resulting in changes in both the commercial and operational routines in the relationship.

In addition to WWD's intra-organisational routine influencing the inter-organisational routines in the three relationships, there are also several examples in the cases of how inter-organisational learning affected the various intra-organisational sub-routines. In the second case, one example of this learning situation is the incident in the beginning of the relationship relating to the problems with the quality of the electrodes. Following intense discussions, WWD and Supplier B finally discovered that the electrodes were not produced in the same way as before. When Supplier B moved the production from Sweden to Hungary some of the knowledge was lost. However, despite the reasons for the problems being identified, WWD requested that the production be moved back to Sweden, hence re-implementing the production in Sweden. In the following years, Supplier B tried to convince WWD that with new knowledge such problems would not occur again and that it would, therefore, be safe to produce the high-quality electrodes in Hungary. However, WWD reacted negatively to this suggestion. This example shows how learning in the inter-organisational meeting routine affected an intra-organisational routine, i.e. Supplier B's

production routine. Although the change in the intra-organisational routine was moving the production back to Sweden, the new knowledge could have changed the production routine in Hungary, leaving imprints of this learning not only in new routines but also in the products. This routine may be considered as a sub-routine to the overall delivery routine in the relationship between WWD and Supplier B, however, it is also an important intra-organisational routine at Supplier B, hence illustrating this learning situation.

Learning between external routines

This learning situation refers to situations where learning in different inter-organisational routines affects other routines in other relationships. There are many examples of this learning situation in the three sub-cases. In the first case one example of this situation relates to the overall delivery routine in the relationship between WWD and Supplier A. The problems in the delivery routine and different solutions were discussed in detail in meetings between the parties. One solution, emerging from these discussions, was to change the dates of shipment of the goods from Malmoe to Rotterdam to correspond with Supplier A's deliveries from the Czech production company and the Norwegian sub-supplier, producing the goods for WWD. Another solution to the problems in the delivery routine was to improve the communication and delivery routine between Supplier A and the Czech company. Supplier A would, for example, keep 2 months of stock for WWD. This had implications for Supplier A's sub-suppliers, especially the Czech sister company, which was responsible for replenishing the stocks in Malmoe. Accordingly, learning in the meeting routine between WWD and Supplier A affected the delivery routines between Supplier A and its suppliers, i.e. the Czech production company and the Norwegian sub-supplier and vice versa. In addition, the reason why the delivery routine had to be improved in the first place was that WWD often ran out of stock of these products, which further had negative effects on the deliveries and routines with their customers, resulting in complaints from the customers.

The first case also illustrates how the routines between Supplier A and its different service providers have affected the delivery routine between WWD and Supplier A. At the end of 2004, Supplier A changed logistics service provider. The new one was more flexible and willing to pick up the goods later in the afternoon of the shipment day. This had been a problem with the former provider, which required the shipment to be ready by noon. Supplier A now had more time to pack, making it easier to complete the orders from WWD. This was because it was now possible to include goods that were arriving from Supplier A's sub-suppliers the same day in the shipment to

WWD. Thus, the delivery routine between Supplier A and its service provider contributed to improving the delivery routine in the relationship between Supplier A and WWD.

Yet another example from the first case illustrates a potential connection between routines in different relationships and implications of learning in one relationship for the routines in another relationship. Supplier A had a close relationship with its largest customer, and would like to utilise this knowledge in the relationship with WWD as well. With the other customer, Supplier A was electronically linked, so that orders could be sent automatically. In addition, Supplier A delivered directly to their customer's customers. Supplier A had positive experiences with routine, and offered WWD the same service. However, although WWD and Supplier A started to discuss the possibilities of direct deliveries, these were never carried out for the industrial products. Hence, Supplier A was not able to use their resources and experiences from the relationship with their other customer in the relationship with WWD.

Finally, learning in the relationship between WWD and Supplier A relating to the delivery problems, may also be seen as influencing the establishment of WWD's relationship with the new Chinese supplier and consequently the routines in this relationship. However, on the other hand, WWD experienced some problems in this new relationship both relating to late deliveries and difficulties with reaching an agreement with the Chinese supplier on the gas distribution systems. This resulted in WWD continuing to buy from Supplier A for a longer period than expected and also in further discussions between WWD and Supplier A concerning a new technical solution to the safety requirement of the gas distribution systems. Hence, these two relationships affected each other in various ways. In addition, relating to this is Supplier A's acknowledgement that even if the improvements of the operational routines in the relationship with WWD seemed wasted after the arrival of the Chinese supplier, this would still benefit not only WWD on the remaining business, but also other customers, since the similar routines and resources were used to handle the different customers.

In the second case, an example of this learning situation is related to the increased focus on price in the relationship between WWD and Supplier B. Firstly, Supplier B experienced increased price pressure from its steel suppliers, making the relationships with these suppliers very unstable. This further influenced upon the relationship with WWD, increasing the focus on price and hence changing the price negotiation routine and the content of the meeting routine. Secondly, this encouraged WWD to search for an alternative supplier of the blue range of electrodes, and finally establishing

the relationship and accordingly new routines with a Chinese supplier. Hence we see that the relationships between Supplier B and its steel suppliers influenced the relationship between Supplier B and WWD, resulting in various experiences and hence finally resulting in the relationship between WWD and the new Chinese supplier of electrodes.

This learning situation is also well illustrated in the third case. One of the main reasons why the relationship between WWD and Supplier C was first established was because of Supplier C's other relationships. Supplier C had access to an extensive distribution network through its relationship with Deutsche Post, enabled by various delivery routines within this network. Hence, Supplier C's learning in the relationship with Deutsche Post was used in establishing the delivery routines in the relationship with WWD. Another example from this case illustrating this learning situation is related to the change in the delivery routine. WWD's decision to go for a door-to-port solution instead of a door-to-door solution had implications for the routines in different relationships. The change in the delivery routine between WWD and Supplier C influenced upon the relationships established to enable further deliveries from port to door. This concerned both Supplier C's existing relationships with brokers and the local WWD offices' new relationships with brokers. Supplier C having problems with establishing proper relationships and routines with sub-suppliers in the US, also influenced the delivery routine between WWD and Supplier C, and finally resulted in Supplier C being excluded from handling goods within the States.

Finally, the relationship between WWD and Supplier C was highly influenced by WWD establishing the relationship with the new logistics provider. These relationships were closely connected, and learning in the routines in one of the relationships would often have implications for the other relationship. For example, knowledge gained during the price negotiation routines in the respective relationships influenced the other relationship. Because the new provider was able to offer better prices on the Far East deliveries compared to Supplier C, the latter lost this business, hence resulting in the termination of the delivery routines for these specific destinations. In addition, learning in the meetings between the parties relating to how to improve the operational routines in one relationship would often be transferred to the other relationship. This was for instance related to the two providers utilising many of the same resources when handling the goods from for example WWDC, and within Norway.

As we see, there are many examples in the cases illustrating how learning and changes in the routines in one relationship propagate to other routines in other relationships, triggering changes and requirements for learning. This

further shows that a key characteristic of the relationships was their connections to other relationships. These connections were not facilitated or planned in any sense, but were more an inherent feature of the relationships. The examples in the first two cases, i.e. the relationships between WWD and Supplier A and between WWD and Supplier B, often related to learning between external routines that were sub-routines in the same overall routine. The delivery routine was one such example, where the changes were transferred to other relationships. Similar examples can be found in the third case. However, most important in this case is the connection between learning taking place in WWD's respective relationships with the two logistics service providers. Compared to the two other relationships, this learning takes place horizontally instead of vertically.

In this section we have looked at the three sub-cases and how they contribute to illuminating four different learning situations, which reflect implications of learning. An important lesson to be learned from the cases is that changes and learning in routines often propagate beyond the single routine. In some situations imprints of learning are found in other routines within the focal relationship. However, learning may also trigger changes and needs for learning in routines in other relationships. In a relationship there are both minor and more profound changes taking place, which further trigger changes and learning in and beyond the relationships. The cases show that learning in single routines takes the form of primarily small adaptations, while major changes have implications beyond the immediate learning location. Each of the cases shows important aspects of these learning situations, some being particularly evident in one specific case and others being common features in all cases. Table 11.2 illustrates examples from each case relating to the four learning situations and imprints of learning.

Table 11.2 Examples of imprints of learning in the three relationships

Learning situations	Case 1 Examples	Case 2 Examples	Case 3 Examples
In single routines in a relationship	Specifications of the invoices	The new delivery routine	Booking reports, handling of complaints and discrepancies in the invoices
Between routines in a relationship	Improvements of the delivery routine and effects on the ordering routine, the meeting routine affecting the operations	The connection between the meeting and the price negotiation routines	Establishing the booking routine according to the delivery routine, the meeting routine affecting the operations
Between internal and external routines	WWD's benchmarking routine affecting the routines in the relationship, changes in delivery routine affecting the evaluations	Supplier B moving production to Hungary	WWD's benchmarking routine affecting the routines in the relationship
Between external routines	Vertical connections between actors involved in the delivery routine, including WWD's customers and Supplier A's sub-suppliers	WWD's new relationship with Chinese supplier of Flankline products affecting the routines with Supplier B in quantitative ways, and further possibilities for new delivery routine in Asia	Horizontal connections between WWD's relationships with Supplier C and the new logistics provider

11.5 Summary

In this chapter, the main findings from the case study and the three sub-cases have been further elaborated upon and looked at in an overall perspective. Firstly, each of the sub-cases was revisited separately, illustrating the most important findings. Next, the cases were looked at in an overall perspective, identifying the similarities and differences between them according to the relationship and learning characteristics identified in Chapter 4. We saw that the sub-cases revealed many common features, among others the co-existence of different relationship development stages and degree of involvement of the various parts of the relationships and also how the relationships changed over time. The relationships in the three cases differed in terms of involvement, where the relationships between WWD and Supplier B and between WWD and Supplier C used to be high-involvement relationships and the relationship between WWD and Supplier A entailed less involvement. However, while the former two relationships changed and to some extent included less involvement (at least relating to trust and commitment), the latter relationship was characterised by extensive learning processes in the later years, hence entailing much involvement in order to make the connections tighter. When it concerns the learning characteristics, the cases had many common features. Though there were examples of attempts of explorative learning in all cases, particularly in Case 2 and Case 3, learning was mostly exploitative, utilising existing routines and resource combinations. Furthermore, another common feature of the cases is that solutions to problems experienced on-line were usually solved off-line and then implemented on-line. The changes in the routines following from this learning were both quantitative, i.e. changes in volumes and frequency, and qualitative, i.e. changes in the content.

In the last part of the chapter, the sub-cases were related to four different learning situations, reflecting imprints of learning. The cases illustrate that learning in relationships seldom stays local to a single routine and the resources involved, but instead propagates to other routines within the relationship or to other routines in other relationships. In the first case the implications of adaptations in one operational routine, in terms of strengthening the resource interfaces, for other operational routines were clear. In addition, all the cases show how routines at the commercial level worked as high-level routines triggering improvements and changes in the operational routines. Furthermore, a feature common to all the cases was the connection between learning in internal and external routines. In particular, WWD's benchmarking routine proved to influence upon all of the three relationships in this study, resulting in various changes and needs for

learning. Finally, the implications of learning and changes in one relationship for other relationships were illustrated by both vertical connections between relationships (e.g. in the first case between WWD's customers, WWD, Supplier A, Supplier A's sub-suppliers, and other customers) and horizontal connections (e.g. in the third case between WWD's relationships with the two logistics providers). In the next and final chapter, the theoretical and empirical implications of these findings will be discussed.

Chapter 12. Final remarks

12.1 Introduction

The aim of this thesis has been to reach a further understanding of learning across firm boundaries, by focusing on learning in ongoing relationships between customers and suppliers in industrial settings. In the previous chapters, this phenomenon has been investigated based on the three concepts of learning, business relationships and routines, and the connection between them. The overall theoretical research question guiding this study has been: How may routines be used as a link between learning and business relationships, in order to investigate and understand learning across firm boundaries? Furthermore, based on this question a more empirical question was derived: How is learning reflected in business relationships when routines are in focus? In this chapter, the theoretical and practical implications of the main findings from the study are discussed, followed by implications for future research. The chapter ends with concluding remarks and a brief summary of the thesis.

12.2 Implications of the study

Several theoretical and practical implications can be identified from the theoretical discussion and the empirical findings in this study. In the following sections some of the most important topics to which the study contributes are discussed. These include: (1) Implications of relationship characteristics for learning, (2) The role of routines in learning, (3) Modes of learning, (4) The networked nature of learning, and (5) The relative nature of learning. The last two of these topics in particular reveal the implications of taking an IMP approach to learning in relationships.

Relationship characteristics and learning

The understanding of business relationships in this thesis has been based on insights from the IMP research tradition, and in particular the industrial network approach. What implications does this view of relationships have for the understanding of learning? Firstly, a main assumption within this tradition is that “no business is an island”, meaning that companies interact

and learn in relation to other companies. However, it is widely recognised in the IMP tradition that exchange relationships differ according to specific dimensions, and this is likely to affect learning in the relationships. In the theoretical discussion in Chapter 4, three relationship characteristics were identified as being particularly interesting concerning learning.

The first relationship characteristic was related to the relationship development stage model, presented in Ford (1980) and in Ford et al. (2003). The basic assumption underpinning this model is that relationships go through different stages, ranging from exploration and development in the beginning of a relationship to maturity and stability as time goes by. Learning is an important feature of the first stages. This characteristic was found in the relationships in the study in this thesis as well. Both in the second and the third case, the establishment of the relationships entailed extensive learning processes, where the parties had to learn about each other and adapt the routines and the resources involved in order to make the relationships work. Following this intensive implementation period, the relationships stabilised in some sense. However, there were still adaptations required. A similar finding is derived from the first case, where an apparently stable relationship entered into a period of extensive learning and development.

In the relationship development model it is recognised that some relationships never go through all the different cycles, while others go through the different stages several times (Ford et al. 2003). A similar point is made by Hallén et al. (1991), who argue that parties in a relationship make adaptations to bring about initial fit between their needs and capabilities, but in addition, adaptation is also necessary in ongoing relationships due to changing conditions. The findings in this thesis support this latter point. All of the three relationships considered went back and forth between development and stability. Furthermore, they showed that also in times of stability the relationships entailed learning and adaptations.

The second relationship characteristic considered in this study was related to type of relationship. Exchange relationships between customers and suppliers in industrial settings have been characterised according to involvement (Araujo et al. 1999; Gadde and Snehota 2000; Ford et al. 2003). In a high-involvement relationship there are close connections between the actors and the involved activities and resources in terms of commitment and trust, co-ordination, and adaptations. A low-involvement relationship, on the other hand, entails standardised interfaces and weak connections. It is reasonable to assume that learning is more evident in high-involvement relationships. Firstly, close connections between the three layers of

substance indicate that learning has taken place. In addition, such connections further facilitate learning (Bångens 1998; Bångens and Araujo 2002). According to Araujo et al. (1999), high-involvement relationships entail joint learning, which provides opportunities for innovation. However, as these authors remark, learning is also present in low-involvement relationships. Instead of being related to innovativeness, however, this learning often relates to productiveness.

The findings in this thesis indicate that the term low-involvement relationship is to some extent inadequate. As long as there is a relationship, meaning that there is more than one transaction, there is always high involvement present. For example, the relationship between WWD and Supplier A may at first glance seem as a low-involvement relationship. There was not much contact between the parties beyond problem solving, and in an overall perspective, standardised routines and resource interfaces were used. Nevertheless, when taking a closer look at the relationship, we see that making the connections in routines and resources closer through adaptations was an important means to solve problems. These learning processes were primarily related to re-establishment of stability and efficiency in the exchange flows, and as such related to productive learning. However, both the need of this learning, as well as the results of it indicates a higher degree of involvement than first estimated. What was apparently a relationship with low involvement entailed in periods much involvement in terms of effort spent in connecting the routines and resources of the two parties.

In the second sub-case we have similar findings. Though the relationship between WWD and Supplier B also involved relatively standard routines and interfaces, the relationship was initially characterised by high involvement. The bonds were strong between the parties and attempts of innovative learning were pursued. However, with the break in the contact pattern at the commercial level, the bonds weakened, including less commitment and trust between the parties. Nevertheless, the operations remained fairly unchanged. What this case shows is that different parts (e.g. commercial or operational level) of the relationship may entail different degrees of involvement, and that a relationship may change in terms of involvement in different periods. The relationship between WWD and Supplier C was similarly also a high-involvement relationship in the beginning of the relationship, with much emphasis on establishing close connections between the two parties. However, the bonds on the commercial level weakened following the appointment of a new manager at WWD and WWD's new relationship with the second logistics provider. The latter resulted in less commitment and trust in the relationship, however at the same time it also triggered a need for

working closer together in order to change the operational routines and hence decrease costs. In the beginning of the relationship, the learning efforts had been directed towards both exploitive and explorative learning while later learning was primarily concerned with exploiting existing solutions.

These findings illustrate that learning takes place in all types of relationships whether they are characterised by high or low involvement. However, it seems reasonable to say that different types of relationships involve different types of learning, in terms of exploitation and exploration. The findings here, therefore, commence with the theory. However, at the same time this study illustrates a need for varying the high-involvement and low-involvement terms. For example, the relationship between WWD and Supplier A may in an overall perspective be considered as a low-involvement relationship. However, dependencies existed between the parties, and this was reflected in the needs for continuous problem solving and improvements in the connections between them. Hence, though the relationship made use of standard routines and resource interfaces, there were still dependencies forcing the parties to learn to solve occurring problems. The same was evident in the two other relationships. We may, therefore, say that dependencies and involvement exist even though there are standard interfaces involved, and that this requires a need for continuous learning. Later in this chapter this idea is further elaborated and linked to the relative nature of learning.

The final relationship characteristic considered in this thesis was related to connections to other relationships. According to Håkansson et al. (1999), learning in a business relationship is highly related to the connections of each party with other actors. In particular, co-operation between suppliers was found to facilitate learning, from which both the suppliers as well as their joint customers could benefit. In the three sub-cases in this thesis, none of the suppliers in the respective relationships engaged in any formal co-operation with WWD's other suppliers in order to generate learning benefiting the involved parties. However, there were many examples in the three cases of how different relationships influenced each other indirectly, in terms of learning in one relationship triggering changes and needs for learning in another. This issue will, however, be further discussed in the section about the networked nature of learning.

What are the practical implications of these relationship characteristics and their relation to learning? The case study showed that relationships may pass through different stages of relationship development several times, and that stable and mature relationships may very well enter into a period with much

development due to external and internal triggers. For example, in the relationship between WWD and Supplier A, both parties considered the relationship stable, and there was no need for much attention. However, when this relationship was first given attention as a result of both complaints from the operational staff and low scores on the performance ratings, this resulted in a period of intensive efforts towards improvement and learning. The recognition by one of the interviewees that “this shows that business as usual is not necessarily good business”⁴⁵ illustrates the need for firms to monitor their relationships carefully. Although a relationship has lasted for years and apparently seems stable, a need of re-direction and improvements may still occur. This was referred to in the literature review in Chapter 4 as the problem of institutionalisation, where dissatisfactory routines are not questioned because they have become state of the art (Ford et al. 2003).

The importance of monitoring even stable and apparently well-functioning relationships also relates to different types of relationships. Although relationships with apparently low involvement are likely to (and should) require less attention than high-involvement relationships, they still need monitoring and improvements of the interfaces. In fact this case study shows that although varying degrees of involvement can be identified in relationships, and that some relationships may have relatively standardised routines and resource interfaces, there are few relationships that can actually be considered as low-involvement relationships. Interviewees recognised both the relationship between WWD and Supplier A and the relationship between WWD and Supplier B, as being standard, but still requiring frequent communication and involvement. For example, something was clearly wrong when there were no longer meetings or communication between the parties. Hence, for firms engaged in such relationships it means that although relationships may and in fact should differ in terms of involvement, they nevertheless require attention and learning in order to work properly.

Modes of learning

In Chapter 4 we saw that the literature often distinguishes between different learning processes, relating to the degree of change. March (1991) and Levinthal and March (1993) have distinguished between learning aimed at exploiting existing knowledge, including refinements and routinisation, and learning aimed at exploring new knowledge, including experimenting and creating variety. Learning is hence a means to provide stability and productivity as well as change and innovation. Although a balance between

⁴⁵ Interview no. 2 in Appendix 1

these has been emphasised, explorative learning has often been considered more valuable, as it provides a chance for companies to be competitive. This follows from a focus on the importance of being flexible and able to learn and adapt to changing circumstances.

A similar emphasis has been found in the inter-organisational learning literature. Such learning is considered highly innovative and explorative in character, as it allows for the sharing of different experiences between the learning parties (Holmqvist 2003). This may be attributed to the fact that most of the studies of inter-organisational learning have focused on collaborations between autonomous partners, set up for a deliberate purpose of learning. It is likely that exploration is facilitated by the fact that there is such a clear objective, in addition to different experiences enabling new knowledge to be generated. It may consequently be argued that all inter-organisational learning is explorative as it builds on the combination of different experiences and knowledge.

Despite the distinction between exploitation and exploration, several authors acknowledge that the difference between these two learning processes is not so evident in practice (Crossan et al. 1999; Easterby-Smith et al. 2000; Holmqvist 2003; 2004). As Holmqvist (2004) remarks, exploitative behaviour and explorative behaviour are closely related as dissatisfaction with one type of behaviour, triggers the other. In addition, Holmqvist also stresses that inter-organisational collaborations may very well entail exploitative behaviour. When the parties in a relationship learn about each other, joint learning through repeated co-operation and homogeneity in experiences is created.

The study in this thesis illustrates a similar point. It shows that exploitative learning instead of explorative learning characterised the relationships studied, at least after implementation. In the last two sub-cases, we see that exploration was common in the beginning of the relationships. This may be attributed to the differences in experience and resources that each of the parties brought with them into the relationships. Furthermore, heterogeneity was also introduced later by experiences each of the parties had in other relationships. However, during the years to follow exploitive learning was more common. This may be attributed to the fact that homogeneity in the experiences had developed. Furthermore, it is reasonable to assume that this is more evident in exchange relationships than in formal collaborations, since the parties in exchange relationships interact frequently through the different inter-organisational routines. These routines embed inter-organisational experiences, and further allow for joint experiences and learning.

One of the reasons why learning in the relationships studied in this thesis is relatively exploitative in character may be WWD's reluctance to change. However, a just as plausible reason may be that WWD employed standardised solutions, using the same resources in similar ways with most of its suppliers. The aim was to utilise the existing knowledge to reduce costs in terms of physical and human resources. This resulted in an exploitive learning behaviour, where changing routines were triggered by a need to re-establish efficiency. The problem was, of course, the risk WWD was facing by employing inappropriate routines, leading to a competency trap (see for example Levinthal and March 1993). This was also recognised by WWD themselves, and explorative attempts of changing the delivery routine, for example, in terms of direct distribution were discussed. However, this proved to be difficult because of the investments in terms of adaptations in the existing resource structure. As we remember from the literature study, Håkansson and Waluszewski (2002) referred to this as the *heaviness* of resources.

As noted earlier, WWD engaged in explorative learning as well, such as the establishment of supplier relationships in China. This had profound implications for the relationship with Supplier A, and partly for the relationship with Supplier B. However, exploitative learning in order to improve existing routines and resources characterised the relationships in this current study. This may also be attributed to the fact that such relationships were primarily set up with the aim of exchanging products, information and money, compared to learning alliances, where the aim is to exchange knowledge. This is not to say that innovation and explorative learning do not take place in exchange relationships. However, compared to formal learning collaborations the conditions are often different, as well as the object of learning. It may be that instead of focusing on change and innovation, learning in exchange relationships is focused on creating stability and productivity in the exchange processes.

Another issue relating to different modes of learning is what exploitation and exploration actually mean. In this thesis we have used changes in routines as a reflection of learning. In addition, based on the IMP research tradition, these routines were described in terms of the resources used and combined in them. Accordingly, exploitative learning has been used about refinement of existing routines, in terms of improving the use and combination of existing resources, while explorative learning has referred to the establishment of new routines through the introduction of new resources or alternative use and combination of resources. In the literature study in Chapter 4 it was argued that what makes the industrial network approach particularly interesting is that it reveals implications of learning and changes in physical

resources in addition to human and organisational resources. This may be related to the emphasis by some of the researchers within this tradition on technological development (see for example Håkansson and Waluszewski 2002). However, in this study it appears that learning is primarily identified in routines, that is to say, in the combination of different resources. Although there are examples from the cases of imprints of learning in physical resources, for example in the products, most of the examples concern learning reflected in how physical and organisational resources are combined.

An additional feature of learning that is illuminated in all of the three sub-cases is the importance of organisational resources, both the different units and the relationships between them. The units are represented by individuals that together perform routines and use resources. Their knowledge and motivation highly affect the learning processes. A reason for this focus on the combination of resources and the importance of organisational resources may be attributed to the focus of the study and the relationships involved. The relationships considered in this study are not traditionally thought of as knowledge intensive relationships. Though there are examples of technological developments in the cases, such as the solution to the new safety requirement for the gas distribution systems supplied by Supplier A to WWD, the central focus in this study as well as in the relationships themselves, has been on the day-to-day exchange processes. This may also be a reason why most of the learning identified in the cases has been characterised by exploitation.

As to the practical implications of these findings, this study suggests that firms have to be conscious about their learning behaviour and they should strive for a balance between exploitative and explorative learning. Explorative behaviour is important in order to create variety in experiences and hence facilitate new possibilities for creating knowledge. However, this knowledge must be exploited in order for the company to benefit from the investments. Exploitative learning is important, because it provides stability and efficiency. Nevertheless, firms that only employ exploitation may be trapped in inappropriate routines, reinforcing behaviour and routines not beneficial to the firms. This relates again to the problem of institutionalisation, which was considered in an earlier section. Hence, both types of learning are important for firms to prosper and stay competitive.

One example from the sub-cases in this study illustrating the problem of the balancing between exploiting existing routines and exploring new routines was the discussion about direct deliveries. Most of the goods from Supplier A and Supplier B went through WWD's IDC in Rotterdam, from where it

was distributed to the internal and external network of customers. It was highly recognised that although distributing the goods via a central unit was initially beneficial because most of WWD's customers and suppliers were based in Europe, globalisation of today's markets contributed to questioning the value of this routine. Nevertheless, although WWD had several discussions both internally and with the suppliers, it proved to be difficult to change the established practice. This was both relating to economic structures and resource structures. Hence, we may say that because of past learning and investments resulting in this specific distribution pattern, and further learning reinforcing it, WWD seemed to be trapped in what appeared to be a dissatisfactory routine. This example illustrates two important points. Firstly, it shows the importance for firms to openly debate and question their existing routines and also to assess whether they fulfil current and future requirements and expectation. Secondly, although firms actually recognise a need for change, the established structures may be difficult to change, and require substantial efforts and management.

The role of routines in learning

The above discussion about exploitative and explorative learning is related to the role of routines in learning. The link between routines and learning has been widely recognised in the organisational literature. For example, Levitt and March (1988) argue that organisational learning is encoded in routines. Learning results in the generation and change of routines, as well as being further accumulated within routines, as problems emerging in the performance of the routines require further refinement. In some situations explorative learning results in radical changes in routines, while in other situations exploitative learning contributes to refining and reinforcing existing routines. The performance of routines is self-reinforcing as organisations become more proficient by repetition, and hence keeping their current focus. This may, however, lead to inertia and competency traps, if organisations keep re-producing and learning routines that are not appropriate (Levinthal and March 1993). This further relates to the idea of routines as the genes of an organisation, leading to re-production (Nelson and Winter 1982). Recent studies have opposed this view, showing that with a performative perspective on routines, their inherent capacity of change is revealed. Feldman (2000) and Feldman and Pentland (2003) argue that actors performing the routines are important sources of variety. Hence, the traditional notion in evolutionary theory of sources of variations leading to change is extended.

In addition to triggering learning while being performed, some routines also work as drivers for change in other routines, providing flexibility and change. These have been called high-level routines (Zollo and Winter 2002). Furthermore, the development of such high-level routines as well as operational routines (low-level routines), takes place through on-line and off-line learning processes, that is to say, within and outside the immediate performance of the routine. Despite the interest in routines and the connection between routines and learning within organisations, the organisational learning literature contains few studies of routines in an inter-organisational setting. Usually, when routines are considered between firms, it is primarily in terms of knowledge-sharing routines aimed at facilitating learning (e.g. Dyer and Singh 1998; Dyer and Nobeoka 2000). An exception is Holmqvist (1999, 2003, 2004), who have studied inter-organisational behavioural rules in new product development.

The study in this thesis has looked at inter-organisational routines that are important for the functioning of exchange relationships. Some of the connections in a relationship are routinised in order to provide stability and efficiency in the exchange processes (Håkansson and Snehota 1995). Routinisation is based on the involved parties' learning about each other and how to co-ordinate and adapt the involved activities and resources (Håkansson and Johanson 2001; Harrison and Bygballe 2006). The routines that were identified in this study included routines for price negotiations, meetings, ordering, delivery and invoicing/payment and are, as we see, different from the traditional view of inter-organisational routines.

Although each of the routines was treated as one routine, they all consisted of different sub-routines. Some of these involved resources from each party directly relating to the parties, while others involved resources from each party more indirectly connecting them. Hence, while some of the sub-routines were considered as merely intra-organisational routines, others were treated as sub-routines of an overall inter-organisational routine. For example, the suppliers' production routines were primary intra-organisational routines. The buying company, WWD, did not use the products in any further production processes, and only distributed the products further to its customers. If WWD had used these products as inputs in their own production processes, we could have talked about an inter-organisational production routine. However, in this study the suppliers' production was an intra-organisational routine, which was instead considered as an important sub-routine in relation to the overall delivery routine. The recognition of routines as consisting of several sub-routines has been made by other researchers as well (see for example Nelson and Winter 1982; Feldman 2000; Narduzzo et al. 2000; Araujo and Mota 2004).

This study illustrates the role different routines play for learning in relationships. The operational routines allow for on-line experiences, which sometimes lead to changes in the routines. Other times these experiences are used as a basis for off-line learning, where problems are discussed and solved in meetings between people not directly involved in the routine. These meetings have themselves proved to be routinised. Hence, they allow for off-line inter-organisational learning, and may be considered as high-level routines. However, while such routines have often been used in the literature to refer to routines that are deliberately set up with a learning and change objective, the meeting routines in this study are primarily triggered because of a need to re-establish stability and efficiency in the exchange processes. Hence, as we see, the findings from this study support the distinction between operational and high-level routines, in addition to acknowledging that learning takes place both on-line and off-line.

What are the practical implications of the role of routines for learning? One of the most important implications is that learning is not only involved in the establishment of routines, but also an inherent aspect of the continued performance of the routines. This dynamic aspect of routines has been highly recognised in recent studies of routines (e.g. Feldman 2000). Routines change as people performing them reflect on the outcome of their actions, that is to say, through on-line learning. In addition, a routine may also change due to learning taking place outside the routine, referred to as off-line learning. This implies, that firms must be aware of these continuous on-line learning processes. Organisational members performing the routines may make modifications in the routines that are not obvious to the rest of the firm. Hence, problems may occur relating to personnel turnover. There were several examples from this study illustrating this problem. Furthermore, organisational staff may also modify the routines into a direction, which is not necessarily beneficial for the firm or its relationships in an overall perspective.

The sub-cases in this study also showed that although there were examples of on-line learning in terms of minor modifications in the routines, the most profound changes resulted from off-line learning at the commercial level. This indicates that the commercial level is an important learning arena, and that parties in a relationship should facilitate interaction at this level. As we learned from the second case in this study, a breakdown in the communication at this level may affect a relationship negatively. It also contributes to illustrate the importance of well-functioning communication between the organisational and commercial levels. Although problems were primarily solved off-line in the relationships, these were often based on on-line experience, where the problems were actually identified. This means

that for interaction and learning to occur at the commercial level in a relationship, it requires that the communication between the levels internally work properly. Another interpretation of this situation is that perhaps too much depends on what happens at the commercial level. It may as such be useful for firms to balance the involvement of the responsible managers at the commercial level and the responsibility given to the operational staff members actually performing the routines.

The networked nature of learning

In the above sections, we have compared the main findings of this study to existing theories, and shown how learning is likely to be reflected in business relationships. In this section, we shall look closer at a main feature of such learning, derived from these findings, centring on the interrelatedness between routines and accordingly the networked nature of learning. In Chapter 11, four learning situations were considered, relating to connections between routines and the propagation of learning: (1) learning in single routines, (2) learning between routines in a relationship, (3) learning between internal and external routines, and (4) learning between external routines. In the adaptive perspective of organisational learning, learning in single routines has been the main focus (e.g. Levitt and March 1988). Learning situations that concern the effects of such learning for other routines and relationships have been given little attention in this literature. However, when applying an industrial network approach to the study of learning in business relationships, the implications from learning beyond the original learning location are revealed. This relates to the assumption that a business relationship has effects not only for each of the parties and the dyad itself, but also on the network in which the relationship is embedded (Håkansson and Snehota 1995). The findings from this study support this view. Even though there are examples of learning that stays local to the different routines, most of the examples illustrate that learning in one routine triggers either merely changes or needs of learning in other routines, both within and between relationships. For example, the sub-cases show the close connections between learning in the operational routines in a relationship as well as how learning in the high-level meeting routine affects these operational routines. The cases also illustrate how changes and learning in the routines in one relationship affect other relationships.

Furthermore, the findings from this study illustrate the connection between intra-organisational and inter-organisational learning. Research on learning within and between organisations has been performed mostly independently, being conceptualised as either intra-organisational or inter-organisational

(Holmqvist 2004). Holmqvist (2003, 2004) has questioned this distinction, arguing that intra-organisational learning is a pre-requisite for inter-organisational learning and inter-organisational learning is internalised within the firm. These processes are linked in mutual learning-loops. In this thesis, similar findings to Holmqvist's (2003, 2004) have been made, providing support for the idea of the interrelatedness between intra- and inter-organisational learning. There are several examples from the case study of learning taking place as WWD and the suppliers met to discuss problems in the exchange flow. This was primarily based on experiences made intra-organisationally within each of the companies. As such, intra-organisational on-line experiences were often the basis for the inter-organisational learning. This was, for example, evident in the cases where new relationships were established. Some times intra-organisational learning would also be merely communicated to the relationship partner, transferring this knowledge without further discussions or joint learning. This may be equated to a teaching process, as identified by Håkansson and Waluszewski (2002) and Håkansson et al. (2001). This knowledge became nevertheless inter-organisational, as it would often change the inter-organisational routines in the relationship. In addition, it would sometimes trigger other inter-organisational learning processes.

The study in this thesis also shows that inter-organisational learning is often internalised by each of the parties. However, unlike Holmqvist (2003, 2004), who centres on knowledge being made intra-organisational again, this study illustrates how inter-organisational knowledge and learning are manifested in inter-organisational routines. These routines consist of sub-routines, which may be seen as being primarily intra-organisational. However, as the sub-routines are closely inter-related in the overall inter-organisational routine, changes within these will often affect the latter and be noticeable for both parties. Hence, we may talk about the changes in intra-organisational sub-routines as constituting inter-organisational knowledge. Finally, findings from this study also suggest that in addition to these inter-organisational routines being triggers of learning and change, intra-organisational routines are also important drivers of learning. Though the study focused on inter-organisational routines, some routines within each party appeared to have profound implications for the different relationships. Particularly WWD's benchmarking routine resulted in substantial changes in the inter-organisational routines with suppliers. This further illustrates how various routines trigger learning in other routines.

These findings contribute to questioning the view of learning as being positive and planned, which is often emphasised in the organisational learning literature (Huysman 1996). In addition, learning is also often

considered productive. However, as this study shows, this may not always be true. Several examples in the study illustrated how one of the parties had to adapt to the other party's requirements and learning. Teaching was highly involved in these processes, often in terms of WWD urging the suppliers to improve the various sub-routines of an overall routine. We also saw that learning was a natural part of the day-to-day interaction practices between the firms instead of being a special and discontinuous process. This finding is more in line with assumptions about interaction and learning held in the industrial network approach than in "traditional" theories of inter-organisational learning. In addition, this study also shows that learning is not always positive. For example, learning in one relationship may prove to have negative effects on another. One example that may illustrate this is when WWD decided to go for an additional logistics service provider, forcing Supplier C to terminate the established routines for the Far East destinations, and hence to unlearn these routines and the involved resource combinations. Hence this study supports the adaptive perspective of learning, which acknowledges that learning may sometimes be inappropriate and negative (Levitt and March 1988; Levinthal and March 1993), and further contributes to this idea by illustrating that what is positive learning in some routines and relationships may not be beneficial in an overall perspective.

An important practical implication of the fact that learning often propagates, meaning that it stays seldom local to where it was initiated, is that companies have to be aware of the effects of their internal and relationship-based learning efforts. Learning leads to changes or needs for learning in other routines and in other relationships. The study reveals several examples of the implications of the networked nature of learning. Firstly, WWD's internal learning relating to the new sourcing strategy and benchmarking routine proved to have some profound implications for the form and content of several of its supplier relationships and also for its customers. For the suppliers it meant, for example, that they had to compete with other suppliers and hence forced changes in their offers to WWD. For customers, it meant that they had to use products, which were produced in China, and which they traditionally had been reluctant to buy. Furthermore, there are also examples of learning in some of the relationships that had implications beyond the focal relationship. For example, Supplier A's routines with its Czech sister company proved to be negative for its relationship with WWD, as they did not work satisfactory.

Given these examples, firms in a relationship must not only be conscious about the effects internally, but also be aware of the implications of learning and changes in routines for other relationship partners and actors connected to either of the two relationship parties.

The relative nature of learning

The findings from the study and the discussions in the previous sections reveal that a central feature of learning in business relationships is that learning is directed towards specific relationship partners. In the literature on inter-organisational learning, the focus has primarily been on how knowledge gained and created with relationship partners may benefit the companies in general and also be transferred to other situations (e.g. Hamel 1991; Larsson et al. 1998). The findings in this study suggest a need to give a nuance to this view. The current study also shows how knowledge gained in one relationship is used in another relationship or situation, such as the improvements of the delivery routine in the first case, where Supplier A acknowledged that this learning may benefit its other customers. However, several examples from this study illustrate that learning is often relationship specific. This contributes to questioning the idea and possibilities of generalisation of relationship learning (see for example Håkansson and Johanson 2001).

In an earlier section, the degree of involvement was discussed. It was argued that also in relationships with relatively low involvement, routines are changed in terms of tying the connections between the resources through adaptations in order to make them work properly for a specific partner. All the three sub-cases in this study illustrate that ostensibly standardised routines and interfaces also require learning and adaptations to work in different relationships. This is because business partners differ in terms of the resources they possess. There is, therefore, always a need for learning how to use and combine the involved parties' resources. This learning constitutes extensive investments, and is accordingly linked to an anticipation of a long-term perspective of the relationship. In this respect, changing relationship partners implies that prior learning investments are often lost, and furthermore that new investments have to be made. This is in line with Hallèn et al. (1991), who claim that investments made in inter-firm adaptations often cannot be transferred to other relationships. Given this assumption, previous learning can in fact hamper the establishment of new relationships, because each of the parties have developed routines with other relationship partners that are not suited for the new relationship. Hence, there is a need for unlearning, which means that the parties in a new relationship may often have to start from the beginning in order to make a new relationship work.

An important theoretical implication of this finding is that the literature and research on inter-organisational learning should include a broader perspective of such learning. This relates to what was considered in an

earlier section about learning as being merely positive and productive. When learning is directed towards specific partners, as illustrated in the cases in this study, other relationships may be affected negatively. This means that learning in a relationship may not be beneficial in an overall perspective, in terms of being optimal for the total network of relationships in which the focal relationship is embedded.

What are the practical implications of this feature of learning in business relationships? Since learning is directed towards specific relationship partners, it is not possible to merely copying existing routines across relationships, though these are considered as standard. A relationship requires extensive learning investments. In order to legitimise such investments, these must be considered in terms of a long-term relationship. It further means that companies must be aware of the costs of switching relationship partners. Much of what has been learned in former relationships is not necessarily easily transferred to a new relationship partner. In most situations unlearning is required before a new extensive learning process may take place in order to establish a new relationship. Furthermore, since learning is directed towards specific relationship partners, the parties also risk the chance that learning may lead to sub-optimisation of one relationship at the expense of the involved parties' other network relationships. It may, of course, be difficult for companies to have a total overview of their network and be able to evaluate whether different learning efforts are beneficial in an overall perspective. Nevertheless, this point illustrates the importance of such evaluations.

12.3 Implications for future research

The study in this thesis offers several avenues for future research. Firstly, the study may be continued, by extending the applications of the findings. For example, the theoretical framework applied to investigate learning in business relationships in this study may be applied when studying other relationships between customers and suppliers in industrial settings. This may show whether this framework captures the most important learning processes in a useful way, and also provide further refinement. Future research may also include a broader concept of the routines that are involved in learning in business relationships. While this thesis has concentrated on behavioural routines, looking at cognitive rules might also be interesting in order to understand learning in business relationships.

Another interesting possibility for future research is to look at the economic and strategic implications of learning. Economic implications relate to the benefits and costs of learning. We have in this thesis referred to learning as changes in routines and resource combinations. This may be related to the concept of *resourcing* introduced in Jahre et al. (2006). Most resourcing efforts are financially driven because they aim at improving performance in some way. Furthermore, such efforts have financial implications because they affect the interfaces of a resource and hence its value (Awaleh et al. 2006). If we consider learning in terms of resourcing, similar arguments can be made. Economising efforts have proved to be an important driving force underlying much of the changes in routines and adaptations in resources in the cases in this current study, aimed at lowering costs and creating additional value.

However, another important finding from this study is that learning is also costly. This has for example, been reflected in the establishment of new relationships, which have proved to entail extensive learning investments. In this respect a further investigation of the economic implications of learning must take into consideration the costs, relating to the time and investments made in the learning compared to the increased benefits of the learning. In addition it is important to look at the question of “economising for whom?” As Awaleh et al. (2006) remark, it is unlikely that there is a common view of the benefits and costs associated with economising. Furthermore, the economising is seldom distributed equally between the parties. An important issue becomes to what extent companies are able and willing to include the understanding of the economic effects of learning, not only within their own companies but also for their relationship partners. How may companies contribute to reducing costs, not only for themselves, but also for relationship partners and the overall network? Future research should take this notion into consideration when looking at the economic implications of learning.

As to strategic implications, future research may investigate the implications of the findings in this study for companies’ behaviour towards relationship partners and handling of business relationships. As such it could contribute to issues dealt with in previous research within the IMP tradition focusing on the management of business relationships (e.g. Ford et al. 2003). For example if we look at two of the findings in this study relating to the networked and relative nature of learning, it is likely that this feature of learning has profound implications for both the purchasing and marketing strategies of the companies in a relationship. Firstly, how shall companies relate to and handle suppliers? Shall standardisation be strived for or shall each relationship be treated as unique? To what extent shall or must

companies involve suppliers in their learning and strategy efforts? In a similar way it may be asked how companies shall handle customers. One central issue in this respect is how far a supplier should go in terms of adaptations to a specific customer.

What is important, whether it concerns the purchasing or marketing side, is how companies handle the fact that their learning efforts have implications outside their own company or a dyadic relationship. How do companies involve directly or indirectly their relationship partners when making strategic learning efforts? Do they discuss their strategies with suppliers and customers? Do they include an evaluation of the consequences of learning on other actors to which they relate? What type of problems do companies actually face when it concerns strategic learning? Furthermore it could also be asked whether or not relationships partners include an evaluation of the implications of their learning efforts on other actors to which they are connected. In a future study of the strategic implications of learning, these questions could be a starting point.

12.4 Concluding remarks

This thesis has informed and expanded our understanding of learning across firm boundaries, by applying a combination of insights from the IMP research tradition and an adaptive perspective of organisational learning. While the former tradition has contributed to understanding the context and implications of learning, the latter has been used to understand how learning processes actually take place. The study has provided insights into an inter-organisational learning phenomenon, which current approaches to such learning do not take into account, that is to say, learning in ongoing relationships between customers and suppliers in industrial settings. In addition, it has contributed to the IMP research tradition by providing insights into a central, but as yet not in-depth studied aspect of the interaction processes between companies; *learning*.

The study has shown that one way of approaching learning in business relationships is through the means of routines. Routines structure many of the exchange processes between firms, and helps co-ordinate the resources involved. The routines and the resources deployed in them are changed and adapted through learning, triggered by sources internal and external to the relationship. This learning often propagates to other routines both within the internal relationship as well as to other relationships to which the parties are connected. Based on these findings, the study has revealed how learning is

reflected in business relationships when routines are in focus, and provided an answer to the overall theoretical research question posed in Chapter 1: How may routines be used as a link between business relationships and learning in order to investigate and understand learning across firm boundaries?

12.4.1 Summary

The thesis started out with presenting two empirical examples, which were argued to be examples of learning across firm boundaries. The first example illustrated how parties in a business relationship establish routines in order to make a new exchange relationship work, and how this process is often dependant on one of the parties learning and adapting to the other party's requirements. The other example showed how relationship partners aim at establishing efficient and stable exchange flows through joint problem solving and adaptation. These examples differ from the traditional research on learning between firms, which has primary focused on strategic alliances, partnerships, and learning networks set up for the deliberate purpose of transferring and creating knowledge. The study in this thesis has investigated learning across firm boundaries from a different angle, looking at learning in ongoing relationships between customers and suppliers in industrial settings.

Both of the empirical examples underlined the role of routines in exchange relationships, and how learning in such relationships often relates to improvements and changes in routines. Based on this recognition and preliminary theoretical insights, it was argued that one way of investigating learning in business relationships was by means of routines. Furthermore, the concepts of routines, business relationships, and learning were, therefore, further discussed. A brief presentation of the contemporary research of learning between companies was also given. Based on this introduction, the following overall research question for this study emerged: How may routines be used as a link between learning and business relationships in order to investigate and understand learning across firm boundaries? Based on this question, an overall empirical question was derived: How is learning reflected in business relationships when routines are in focus? This question was further specified into two sub-questions: (1) How do companies use routines in business relationships? (2) How is the use of such routines affecting and affected by learning?

In Chapter 2, the methodology applied in the study was outlined. Firstly, the background for the choice of theme and the research setting was presented.

Next, arguments for choosing a qualitative single case study were given, together with a discussion of this type of research design. A description of the data collection methods and the construction and analyses of the three sub-cases was also provided. In addition, an evaluation of the study followed, centred on a discussion of the quality and credibility of the study. Finally, the companies in the study were presented.

Chapter 3 presented an empirical example of two companies establishing an exchange relationship. The example revealed five different inter-organisational routines, which proved to be important for the co-ordination and functioning of a business relationship. These were routines for price negotiating, meetings, ordering, delivery and invoicing/payment. Furthermore a discussion about the three concepts of learning, business relationships and routines and the connection between them followed, resulting in some refined empirical questions. The empirical example and these questions formed a further basis for the following case study.

In Chapter 4, a literature study was presented, where the concepts of learning, business relationships and routines were further discussed based on insights from the IMP research tradition and the adaptive perspective of organisational learning. A theoretical framework for how to investigate and understand the connection between learning and business relationships by the means of routines emerged from this discussion. It was argued that while the adaptive perspective of organisational learning can inform us about how learning actually takes place, applying an industrial network approach to the study of learning reveals that implications of such learning may propagate outside the local setting in which it was first initiated. The framework was illustrated by some research issues, focusing on certain relationship and learning characteristics.

In Chapter 5-10, the three sub-cases were presented and analysed, based on the insights from the empirical discussion in Chapter 3 and the research issues emerging from the theoretical discussion in Chapter 4. The findings from the study were summarised and discussed in an overall perspective, and according to different learning situations in Chapter 11. Finally, this chapter has discussed the theoretical and practical implications of the study, in addition to suggesting and discussing implications for future research.

References:

- Adler, P. S., B. Goldoftas and D. I. Levine (1999). Flexibility Versus Efficiency? A Case Study of Model Changeovers in the Toyota Production System. *Organization Science*, 10 (1): 43-68.
- Alchian, A. A. and H. Demsetz (1972). Production, Information, Costs, and Economic Organization. *The American Economic Review*, 62 (777-795).
- Araujo, L. (1998). Knowing and Learning as Networking. *Management Learning*, 29 (3): 317-336.
- Araujo, L., A. Dubois and L. E. Gadde (1999). Managing Interfaces with Suppliers. *Industrial Marketing Management*, 28 (497-506).
- Araujo, L. and J. Mota (2004). *Routines, "Learning-by-Using" and Networks: the Case of Aircraft Maintenance*. Paper presented at the 20th IMP conference in Copenhagen
- Argyris, C. and D. A. Schon (1978). *Organizational Learning*. London: Addison-Wesley Publishing Company.
- Astley, G. W. (1984). Towards an Appreciation of Collective Strategy. *Academy of Management Review*, 9 (3): 526-535.
- Awaleh, F., P. Engelseh, L. E. Gadde and G. Persson (2006). Economizing through Business Relationships. In M. Jahre, L. E. Gadde, H. Håkansson, D. Harrison and G. Persson. *Resourcing in Business Logistics - The Art of Systematic Combining*. Malmö: Liber & Copenhagen Business School Press. p. 170-211
- Axelsson, B. and G. Easton (1992). *Industrial Networks: A New View of Reality*. London: Routledge.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17 (1): 99-120.
- Becker, M. C. (2004). Organizational Routines: A Review of the Literature. *Industrial and Corporate Change*, 13 (4): 643-677.
- Berger, P. and T. Luckman (1967). *The Social Construction of Reality*. London: Penguin Books.

Brown, J. S. and P. Duguid (1991). Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. *Organization Science*, 2 (1): 40-57.

Burrell, G. and G. Morgan (1998). *Sociological Paradigms and Organizational Analysis*. 10. Aldershot: Ashgate.

Bångens, L. (1998). *Inter-Firm Linkages and Learning*. Doctoral Dissertation, Department of Industrial marketing, Chalmers University of Technology.

Bångens, L. and L. Araujo (2002). The Structures and Processes of Learning. A Case Study. *Journal of Business Research*, 55 (571-581).

Cohen, M. D. and P. Bacdayan (1996). Organizational Routines are Stored as Procedural Memory: Evidence From a Laboratory Study. In M. D. Cohen and L. S. Sproull. *Organizational learning*. Thousand Oaks: Sage Publications. 403-429

Cohen, M. D., R. Burkhart, G. Dosi, M. Egidi, L. Marengo, M. Warglien and S. G. Winter (1996). Routines and Other Recurring Action Patterns of Organizations: Contemporary Research Issues. *Industrial and Corporate Change*, 5 (3): 653-698.

Cohen, M. D. and L. S. Sproull (1996). *Organizational Learning*. Thousand Oaks: Sage Publications.

Cohen, W. M. and D. A. Levinthal (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35 (128-152).

Cohendet, P. and P. Llerena (2003). Routines and Incentives: The Role of Communities in the Firm. *Industrial and Corporate Change*, 12 (2): 271-297.

Conner, K. R. and C. K. Prahalad (1996). A Resource-Based Theory of the Firm: Knowledge versus Opportunism. *Organization Science*, 7 (5): 477-501.

Cook, K. S. and R. M. Emerson (1978). Power, Equity and Commitment in Exchange Networks. *American Sociological Review*, 43 (5): 721-739.

- Crossan, M. M., H. W. Lane, R. E. White and L. Djurfeldt (1995). Organizational Learning: Dimensions for a Theory. *The International Journal of Organizational Analysis*, 3 (4): 337-360.
- Crossan, M. M., H. Lane and R. E. White (1999). An Organizational Learning Framework: From Intuition to Institution. *Academy of Management Review*, 24 (522-537).
- Cyert, R. M. and J. G. March (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Dawson, P. (1997). In at the Deep End: Conducting Processual Research on Organisational Change. *Scandinavian journal of management*, 13 (4): 389-405.
- Dodgson, M. (1993). Organizational Learning: A Review of Some Literatures. *Organization Studies*, 14 (3): 375-394.
- Dubois, A. (1994). *Organising Industrial Activities - An Analytical Framework*. Doctoral Dissertation, Industrial Marketing, Chalmers University of Technology.
- Dubois, A. and L. E. Gadde (2002). Systematic Combining: An Abductive Approach to Case Research. *Journal of Business Research*, 55 (553-560).
- Dubois, A. and L. Araujo (2004). Research Methods in Industrial Marketing Studies. In H. Håkansson, D. Harrison and A. Waluszewski. *Rethinking Marketing: Developing a New Understanding of Markets*. West Sussex: John Wiley & Sons Ltd. p. 207-227
- Dyer, J. H. and H. Singh (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review*, 23 (4): 660-679.
- Dyer, J. H. and K. Nobeoka (2000). Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal*, 21 (345-367).
- Easterby-Smith, M. (1997). Disciplines of Organizational Learning: Contributions and Critiques. *Human Relations*, 50 (9): 1085-113.
- Easterby-Smith, M., M. M. Crossan and D. Nicolini (2000). Organizational Learning: Debates Past, Present and Future. *Journal of Management Studies*, 37 (6): 783-796.

- Easton, G. (1995). Methodology and Industrial Networks. In K. Möller and D. Wilson. *Business Marketing: An Interaction and Network Perspective*. Norwell, Mass.: Kluwer Academic Publishers. p. 411-492
- Edmondson, A. C., R. M. Bohmer and G. P. Pisano (2001). Disrupted Routines: Team Learning and New Technology Implementation in Hospitals. *Administrative Science Quarterly*, 46 (685-716).
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14 (4): 532-550.
- Eisenhardt, K. M. and J. A. Martin (2000). Dynamic Capabilities: What are They? *Strategic Management Journal*, 21 (1105-1121).
- Feldman, M. S. (2000). Organizational Routines as a Source of Continuous Change. *Organizational Science*, 11 (6): 611-629.
- Feldman, M. S. and A. Rafaeli (2002). Organizational Routines as Sources of Connections and Understandings. *Journal of Management Studies*, 39 (3): 309-331.
- Feldman, M. S. (2003). A performative Perspective on Stability and Change in Organizational Routines. *Industrial and Corporate Change*, 12 (4): 727-752.
- Feldman, M. S. and B. T. Pentland (2003). Reconceptualizing Organizational Routines as a Source of Flexibility and Change. *Administrative Science Quarterly*, 48 (94-118).
- Fiol, C. M. and M. A. Lyles (1985). Organizational Learning. *The Academy of Management Review*, 10 (4): 803-813.
- Ford, D. (1980). The Development of Buyer-Seller Relationships in Industrial Markets. *European Journal of Marketing*, 14 (5/6): 339-354.
- Ford, D., H. Håkansson and J. Johanson (1986). How Do Companies Interact? *Industrial Marketing and Purchasing*, 1 (1): 26-41.
- Ford, D. (1990). *Understanding Business Markets. Interaction, Relationships, Networks*. London: Academy Press.

Ford, D., L. E. Gadde, H. Håkansson and I. Snehota (2003). *Managing Business Relationships*. Second. Chichester, West Sussex: John Wiley & Sons Ltd.

Gadde, L. E. and I. Snehota (2000). Making the Most of Supplier Relationships. *Industrial Marketing Management*, 29 (4): 305-317.

Gittell, J. H. (2002). Coordinating Mechanisms in Care Provider Groups: Relational Coordination as a Mediator and Input Uncertainty as Moderator of Performance Effects. *Management Science*, 48 (1408-1426).

Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91 (3): 481-510.

Grant, R. M. (1996). Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration. *Organization Science*, 7 (4): 375-387.

Halinen, A., A. Salmi and V. Havila (1999). From Dyadic Change to Changing Business Networks: An Analytical Framework. *Journal of Management Studies*, 36 (6): 779-795.

Hallèn, L., J. Johanson and N. Seyed-Mohamed (1991). Interfirm Adaptation in Business Relationships. *Journal of Marketing*, 55 (April): 29-37.

Hamel, G. (1991). Competition for Competence and Interpartner Learning within International Strategic Alliances. *Strategic Management Journal*, 12 (83-103).

Harrison, D. and L. Huemer (2005). Boundaries, Inter-Organisational Routines and Change. Paper presented at the 21st IMP conference. Rotterdam.

Harrison, D. and L. E. Bygballe (2006). Learning and Routines in Resourcing. In M. Jahre, L. E. Gadde, H. Håkansson, D. Harrison and G. Persson. *Resourcing in Business Logistics - the Art of Systematic Combining*. Malmö: Liber and Copenhagen Business School Press. p. 145-169

Hedberg, B. (1981). How Organizations Learn and Unlearn? In P. C. Nystrom and W. H. Starbuck. *Handbook of Organizational Design*. New York: Oxford University Press. p. 3-27

- Hertz, S. (1996). Drifting Closer and Drifting Away in Networks. Gradual Changes in Interdependencies of Networks. In D. Iacobucci. *Networks in Marketing*. Thousand Oaks: Sage Publications. p. 179-204
- Holmen, E. (2001). *Notes on a Conceptualisation of Resource-Related Embeddedness of Interorganisational Product Development*. Doctoral Dissertation, Department of Marketing, University of Southern Denmark.
- Holmqvist, M. (1999). Learning in Imaginary Organizations: Creating Interorganizational Knowledge. *Journal of Organizational Change Management*, 12 (5): 419-438.
- Holmqvist, M. (2003). A Dynamic Model of Intra- and Interorganizational Learning. *Organization Studies*, 24 (1): 95-123.
- Holmqvist, M. (2004). Experiential Learning Processes of Exploitation and Exploration Within and Between Organizations: An Empirical Study of Product Development. *Organization Science*, 15 (1): 70-81.
- Huber, G. (1991). Organizational Learning: Contributing Processes and the Literatures. *Organization Science*, 2 (1): 88-115.
- Huysman, M. (1996). *Dynamics of Organizational Learning*. Doctoral Dissertation, Department of Information Systems, Vrije Universiteit.
- Håkansson, H. (1982). *International Marketing and Purchasing of Industrial Goods: An Interaction Approach*. Chichester: Wiley.
- Håkansson, H. (1987). *Industrial Technological Development. A Network Approach*. London: Croom Helm.
- Håkansson, H. (1989). *Corporate Technological Behaviour. Co-operation and Networks*. London: Routledge.
- Håkansson, H. and I. Snehota (1990). No Business is an Island: the Network Concept of Business Strategy. *Scandinavian Journal of Management*, 4 (3): 187-200.
- Håkansson, H. and J. Johanson (1992). A Model of Industrial Networks. In Axelsson B. and G. Easton. *Industrial Networks: A New View of Reality*. London: Routledge. p. 28-34

- Håkansson, H. (1993). Networks as a Mechanism to Develop Resources. In P. Beije, J. Groenewegen and O. Nuys. *Networking in Dutch Industries*. Leuven-Appeldorn: Garant. p. 207-223
- Håkansson, H. and I. Snehota (1995). *Developing Relationships in Business Networks*. London: Routledge.
- Håkansson, H., V. Havila and A. C. Pedersen (1999). Learning in Networks. *Industrial Marketing Management*, 28 (443-452).
- Håkansson, H., M. Huysman and A. von Raesfeld Meijer (2001). Inter-Organizational Interaction and Organizational Teaching. In H. H. and J. J. *Business Network Learning*. Amsterdam: Pergamon. p. 17-32
- Håkansson, H. and J. Johanson (2001). Business Network Learning - Basic considerations. In H. Håkansson and J. Johanson. *Business Network Learning*. Amsterdam: Pergamon. p. 1-13
- Håkansson, H. and D. Ford (2002). How Should Companies Interact in Business Networks? *Journal of Business Research*, 55 (133-139).
- Håkansson, H. and A. Waluszewski (2002). *Managing Technological Development*. New York: Routledge.
- Jahre, M., L. E. Gadde, H. Håkansson, D. Harrison and G. Persson (2006). *Resourcing in Business Logistics - The Art of Systematic Combining*. Malmö: Liber and Copenhagen Business School Press.
- Johanson, J. and L.-G. Mattson (1987). Interorganizational Relations in Industrial Systems: A Network Approach Compared with the Transaction-Cost Approach. *Int. Studies of Mgt. & Org.*, XVII (1): 34-48.
- Kim, D. H. (1993). The Link between Individual and Organizational Learning. *Sloan Management Review*, 35 (37-50).
- Knight, L. (2002). Network Learning: Exploring learning by interorganizational networks. *Human Relations*, 55 (4): 427-454.
- Lane, P. J. and M. Lubatkin (1998). Relative Absorptive Capacity and Interorganizational Learning. *Strategic Management Journal*, 19 (461-477).

Lane, P. J., J. E. Salk and M. A. Lyles (2001). Absorptive Capacity, Learning, and Performance in International Joint Ventures. *Strategic Management Journal*, 22 (1139-1161).

Larsson, R., L. Bengtsson, K. Henriksson and J. Sparks (1998). The Interorganizational Learning Dilemma: Collective Knowledge Development in Strategic Alliances. *Organization Science*, 9 (3): 285-305.

Latour, B. (1986). The Powers of Association. In J. Law. *Power, Action and Belief*. London: Routledge and Kegan Paul. p. 264-280

Lave, J. and E. Wenger (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Lawrence, P. R. and J. W. Lorsch (1967). *Organization and Environment: Managing Differentiation and Integration*. Boston, Mass.: Harvard University.

Levinthal, D. A. and J. G. March (1993). The Myopia of Learning. *Strategic Management Journal*, 14 (Special Issue: Organizations, Decision Making, and Strategy): 95-112.

Levitt, B. and J. G. March (1988). Organizational Learning. *Annual Review of Sociology*, 14 (319-340).

Lillrank, P. (2003). The Quality of Standard, Routine and Nonroutine Processes. *Organization Studies*, 24 (2): 215-233.

Lundvall, B-Å. (1992). Introduction. In B-Å. Lundvall. *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter Publisher. p. 2-19

March, J. and H. A. Simon (1958). *Organizations*. New York: John Wiley.

March, J. and J. P. Olsen (1975). Uncertainty of Past - Organizational Learning Under Ambiguity. *European Journal of Political Research*, 3 (2): 147-171.

March, J. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2 (1): 71-87.

Miles, M. B. and A. M. Huberman (1994). *Qualitative Data Analysis*. Thousand Oaks: Sage Publications.

- Miner, A. S. (1991). Organizational Evolution and the Social Ecology of Jobs. *American Sociological Review*, 56 (772-285).
- Narduzzo, A., E. Rocco and M. Warglien (2000). Talking About Routines in the Field. In G. Dosi, R. Nelson and S. G. Winter. *The Nature and Dynamics of Organizational Capabilities*. New York: Oxford University Press. p. 27-50
- Nelson, R. R. and S. G. Winter (1982). *An Evolutionary Theory of Economic Change*. New York: Harvard University Press.
- Nelson, R. R. (1991). Why Do Firms Differ, and How Does It Matter? *Strategic Management Journal*, 12 (Winter Special Issue): 61-74.
- Nelson, R. R. and B. N. Sampat (2001). Making sense of institutions as a factor shaping economic performance. *Journal of Economic Behaviour & Organization*, 44 (31-54).
- Nelson, R. R. (2003). On the Uneven Evolution of Human Know-How. *Research Policy*, 32 (909-922).
- Nonaka, I. and H. Takeuchi (1995). *The Knowledge-Creating Company*. Oxford University Press.
- Patriotta, G. (2003). *Organizational Knowledge in the Making: How Firms Create, Use, and Institutionalize Knowledge*. New York: Oxford University Press.
- Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods*. 3. Thousand Oaks: Sage Publications.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. 3rd ed. published in 1995. New York: Oxford University Press.
- Pentland, B. T. and H. H. Reuter (1994). Organizational Routines as Grammars of Action. *Administrative Science Quarterly*, 39 (484-510).
- Pettigrew, A. M. (1997). What is a Processual Analysis? *Scandinavian Journal of Management* 13 (4): 337-348.
- Polanyi, M. (1958). *Personal Knowledge: Towards a Post-Critical Philosophy*. London: Routledge and Kagan Paul.

Powell, W. W. (1998). Learning From Collaboration: Knowledge and Networks in the Biotechnology and Pharmaceutical Industries. *California Management Review*, 40 (3): 228-240.

Prahalad, C. K. and G. Hamel (1990). The Core Competence of Corporation. *Harvard Business Review*, 68 (79-91).

Reynaud, B. (2000). The Properties of Routines: Tools of Decision Making and Modes of Coordination. In P. P. Saviotti and B. Nooteboom. *Technology and Knowledge. From the Firm to Innovation Systems*. Cheltenham: Edward Elgar Publishing. p. 249-262

Ritter, T. and D. Ford (2004). Interactions Between Suppliers and Customers in Business Markets. In H. Håkansson, D. Harrison and A. Waluszewski. *Rethinking Marketing: Developing a New Understanding of Markets*. West Sussex: John Wiley & Sons. p. 99-116

Ryle, G. (1949). *The Concept of Mind*. London: Hutchinson House.

Selnes, F. and J. Sallis (2003). Promoting Relationship Learning. *Journal of Marketing*, 67 (80-95).

Shrivastava, P. (1983). A Typology of Organizational Learning Systems. *Journal of Management Studies*, 20 (1): 7-28.

Snehota, I. (1990). *Notes on a Theory of Business Enterprise*. Doctoral Dissertation, Department of Business Studies, Uppsala University.

Teece, D. J., G. P. Pisano and A. Shuen (2000). Dynamic Capabilities and Strategic Management. In G. Dosi, R. Nelson and S. G. Winter. *The Nature and Dynamics of Organizational Capabilities*. New York: Oxford University Press. p. 334-362

Tsoukas, H. and E. Vladimirou (2001). What is organizational knowledge? *Journal of Management Studies*, 38 (7): 973-993.

Tsoukas, H. and R. Chia (2002). On Organizational Becoming: Rethinking Organizational Change. *Organization Science*, 13 (5): 567-582.

Uzzi, B. (1997). Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness. *Administrative Science Quarterly*, 42 (35-67).

Von Corswant, F. (2003). *Organizing Interactive Product Development*. Doctoral Dissertation, Department of Operations Management and Work Organization, Chalmers University of Technology.

Wedin, T. (2001). *Networks and Demand. The Use of Electricity in an Industrial Process*. Doctoral Dissertation, Department of Business Studies, Uppsala University.

Weick, K. (1979). *The Social Psychology of Organising*. Reading, Mass: Addison-Wesley.

Yin, R. K. (1994). *Case Study Research. Design and Methods*. London: Sage Publisher.

Zollo, M., J. J. Reuer and H. Singh (2002). Interorganizational Routines and Performance in Strategic Alliances. *Organizational Science*, 13 (6): 701-713.

Zollo, M. and S. G. Winter (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, 13 (3): 339-351.

Appendix 1. Interviews

Interview	Date	Company	Interviewee	Topic
1	08.10.02	WWD	Corporate procurement manager	Supplier relationships
2	23.01.03	WWD	Corporate procurement manager	Supplier relationships
3	20.02.03	WWD	Procurement manager	Supplier relationships in particular Supplier A and B
4	20.02.03	WWD	Corporate logistics manager	Relationship between WWD and Supplier C
5	19.03.03	WWD	Logistics co-ordinator	Relationship between WWD and Supplier C
6	27.05.03	WWD	Procurement manager	Supplier A and B
7	06.06.03	WWD	Corporate procurement manager	Supplier relationships
8	11.09.03	WWD	Procurement manager	Supplier relationships
9	27.10.03	WWD	Product engineer	Welding products
10	12.11.03	WWD	Stock planner	Operations
11	12.11.03	WWD	Stock planner	Operations
12	12.11.03	WWD	Expeditor	Operations
13	12.11.03	WWD	Supervisor incoming goods	Operations
14	12.11.03	WWD	Network supply co-ordinator	Operations
15	14.11.03	WWD	Supervisor forwarding	Operations
16	14.11.03	WWD	International distribution manager	Operations

17	14.11.03	WWD	Procurement manager	Supplier relationships
18	18.05.04	WWD	Procurement manager	Switch of Supplier A to Chinese supplier
19	28.05.04	WWD	Procurement manager	Switch of Supplier A to Chinese supplier
20	08.06.04	WWD	Procurement manager	Switch of Supplier A to Chinese supplier
21	16.09.04	WWD	Procurement manager	Switch of Supplier A to Chinese supplier
22	04.10.04	WWD	Procurement manager	Relationship with Supplier B
23	08.10.04	WWD	Project manager	Operations
24	26.10.04	WWD	Product engineer	Welding products
25	28.10.04	WWD	Product manager	Welding products
26	08.11.04	WWD	Procurement manager	Supplier relationships
27	12.01.05	WWD	Procurement manager	Supplier relationships
28	18.01.05	WWD	Stock planner	Switch of Supplier A to Chinese supplier
29	03.03.05	WWD	Procurement manager	Relationship between WWD and Supplier C
30	07.03.05	WWDC	Logistics manager	Relationship between WWDC and Supplier C
31	10.05.05	WWD	Procurement manager	Supplier relationships
32	15.06.05	WWD	Procurement manager	Relationship between

				WWD and Chinese supplier
33	06.09.05	WWD	Procurement manager	Supplier relationships
34	09.08.05	WWDC	Logistics manager	Relationship between WWDC and Supplier C
35	14.03.03	Supplier A	Sales manager	Relationship between Supplier A and WWD
36	27.05.03	Supplier A	Sales manager, product manager, order handling staff	Relationship between Supplier A and WWD
37	18.11.04	Supplier A	Sales manager	Relationship between Supplier A and WWD
38	20.01.05	Supplier A	Sales manager	Relationship between Supplier A and WWD
39	16.02.05	Supplier A	Logistics manager	Relationship between Supplier A and WWD
40	19.05.05	Supplier B	Product manager/Key account	Relationship between Supplier B and WWD
41	20.04.05	Supplier C	Managing director, shipping manager, booking staff	Relationship between Supplier C and WWD

Appendix 2. Supplier meetings

Meetings	Date	Companies	Location	Topic
1	30.10.02	WWD-Supplier A	WWD' s HO (Oslo, Norway)	Annual supplier meeting
2	31.10.02	WWD-Supplier B	WWD' s HO (Oslo, Norway)	Annual supplier meeting
3	27.11.02	WWD- Supplier A	WWD' s HO (Oslo, Norway)	Unresolved issues from meeting in October
4	27.05.03	WWD- Supplier A	Supplier A' s HO (Malmoe, Sweden)	Unresolved issues from autumn 2002
5	04.11.03	WWD- Supplier A	WWD' s HO (Oslo, Norway)	Operational issues
6	13.11.03	WWD- Supplier B	WWD' s IDC (RTM, Netherlands)	Commercial, technical and operational issues
7	17.03.04	WWD- Supplier B	WWD' s HO (Oslo, Norway)	Price negotiations
8	16.02.05	WWD- Supplier A	Supplier A' s HO (Malmoe, Sweden)	Settling the business

Appendix 3. The NETLOG case structure

A FACILITY CASE

0) Background

In most cases it is necessary to give some background to the case – to place the facility and its situation in its general context, for example in terms of ownership etc.

1) Description of the focal resource - the facility

Describe the main features of the facility. The space is limited so the description must focus on the most important characteristics of the facility as a logistics resource.

In the previous version the following dimensions were suggested

- investment/capacity
- complexity
- integration
- set up time

These are examples. They might not be the most relevant dimensions in all cases.

Add other dimensions in accordance with the characteristics of the specific facility.

2) Interfaces with resources of the same type – the facility vs. other facilities

Describe in which way the facility is related to other facilities. In the previous version there were no dimensions suggested for this analysis. This analysis takes its point-of-departure in the dimensions discussed in 1) above. The central issue to cover concerns how the facility is linked to other facilities, for example in terms of:

- activity links
- technical connections
- adaptations
- capacity balance

Again, these are suggested dimensions.

3) Interfaces with other resources

The space available is limited and we need to be selective. For each of the three types of interfaces start the description by briefly indicating how many connections that are really important; from one or a few to many. Then describe a limited number of these important interfaces. Once we suggested no more than three, but depending on the situation four or five might occasionally be necessary.

a) Facility vs. Products

This description includes the interfaces of the facility with:

- the products that are important for the facility
- the products for which the facility is important

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the product makes use of
- the contribution of the facility to the value of the end-product
- how much, and in which ways, is the product marked by the facility
- how much, and in which ways, is the facility marked by the product

b) Facility vs. Business units

This description includes the interfaces of the facility with:

- the business units that are important for the facility and
- the business units for which the facility is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the business unit makes use of
- the share of the turnover for the business unit that the facility accounts for
- how much, and in which ways, is the business unit marked by the facility
- how much, and in which ways, is the facility marked by the business unit

c) Facility vs. Business relationship

This description includes the interfaces of the facility with:

- the business relationships that are important for the facility
- the business relationships for which the facility is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the business relationship makes use of
- the facilities share of the business relationship (difficult to estimate – try)
- how much, and in which ways is the business relationship marked by the facility
- how much, and in which ways is the facility marked by the business relationship

4) Concluding remarks

In this section we bring up the most important things from the analysis in 1-3 – short.

Furthermore, we need to come back to one issue that we seem to have lost on the way. When we started the project we talked about ‘contradictions’ in the usage of resources – i.e. the ‘best’ development of each of the four resource elements discussed seldom follow the same track, which imposes problems when resource combinations are to be changed. In some of the cases we have talked about including a discussion of ‘potential’ interfaces.

Irrespective of whether this is done or not we think this final section should include a short discussion of the dynamics of resource combining, for example developing one of the resources in one way might prohibit the development of another.

Maybe, ‘tensions’ is a better word for it.

The need for this discussion of tensions is most important in cases that primarily are described in structural terms. Some cases are more problem-oriented and then these tensions are included in the case description.

A PRODUCT CASE

0) Background

In most cases it is necessary to give some background to the case – to place the product and its situation in its general context, for example in which applications it is used.

1) Description of the focal resource - the product

Describe the main features of the product. The space is limited so the description must focus on the most important characteristics of the product as a logistics resource.

In the previous version the following dimensions were suggested

- price, price variation over time
- design/technical features
- standardization/adaptations

These are examples. They might not be the most relevant dimensions in all cases.

Add other dimensions in accordance with the characteristics of the specific product.

2) Interfaces with resources of the same type – the product vs. other products

Describe in which way the product is related to other products. In the previous version there were no dimensions suggested for this analysis. This analysis takes its point-of-departure in the dimensions discussed in 1) above. The central issue to cover concerns how the product is linked to other products, for example in terms of:

- technical connections
- adaptations
- used by the same customer
- delivered by the same supplier

Again these are suggested dimensions.

3) Interfaces with other resources

The space available is limited and we need to be selective. For each of the three types of interfaces start the description by briefly indicating how many connections that are really important; from one or a few to many. Then

describe a limited number of these important interfaces. Once we suggested no more than three, but depending on the situation four or five might occasionally be necessary.

a) Product vs. Facilities

This description includes the interfaces of the specific product with:

- the facilities that are important for the product
- the facilities for which the product is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the product make use of
- the contribution of the facility to the value of the end-product
- how much, and in which ways, is the product marked by the facility
- how much, and in which ways, is the facility marked by the product

b) Product vs. Business units

This description includes the interfaces of the specific product with:

- the business units that are important for the product
- the business units for which the product is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the product's share of the turnover of the business unit
- the business unit's share of the total product cost
- how much, and in which ways, is the product marked by the business unit
- how much, and in which ways, is the business unit marked by the product

c) Product vs. Business relationship

This description includes the interfaces of the specific product with:

- the business relationships that are important for the product
- the business relationships for which the product is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the relationship's share of the product's costs or revenues
- the product's share of the business relationship (difficult to estimate – try)
- how much, and in which ways, is the product marked by the business relationship
- how much, and in which ways, is the business relationship marked by the product

4) Concluding remarks

In this section we bring up the most important things from the analysis in 1-3 – short.

Furthermore, we need to come back to one issue that we seem to have lost on the way. When we started the project we talked about ‘contradictions’ in the usage of resources – i.e. the ‘best’ development of each of the four resource elements discussed seldom follow the same track, which imposes problems when resource combinations are to be changed. In some of the cases we have talked about including a discussion of ‘potential’ interfaces.

Irrespective of whether this is done or not we think this final section should include a short discussion of the dynamics of resource combining, for example developing one of the resources in one way might prohibit the development of another.

Maybe, ‘tensions’ is a better word for it.

The need for this discussion of tensions is most important in cases that primarily are described in structural terms. Some cases are more problem-oriented and then these tensions are included in the case description.

A BUSINESS UNIT CASE

0) Background

In most cases it is necessary to give some background to the case – to place the business unit and its situation in its general context.

1) Description of the focal resource - the business unit

Describe the main features of the business unit. The space is limited so the description must focus on the most important characteristics of the business unit as a logistics resource. In the previous version the following dimensions were suggested

- strategy
- competence
- experience
- size

These are examples. They might not be the most relevant dimensions in all cases.

Add other dimensions in accordance with the characteristics of the specific business unit.

2) Interfaces with resources of the same type – the business unit vs. other business units

Describe in which way the business unit is related to other business units. In the previous version there were no dimensions suggested for this analysis. This analysis takes its point-of-departure in the dimensions discussed in 1) above.

The central issue to cover concerns how the business unit is linked to other business units, for example in terms of:

- business exchange
- technical interaction and learning
- connections to other business units
- common ownership

Again these are suggested dimensions.

3) Interfaces with other resources

The space available is limited and we need to be selective. For each of the three types of interfaces start the description by briefly indicating how many connections that are really important; from one or a few to many. Then

describe a limited number of these important interfaces. Once we suggested no more than three for each type of resource, but depending on the situation four or five might occasionally be necessary.

a) Business unit vs. Facilities

This description includes the interfaces of the specific business unit with:

- the facilities that are important for the business unit
- the facilities for which the business unit is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the business unit make use of
- the facility's share of the business unit (difficult to estimate – try)
- how much, and in which ways, is the business unit marked by the facility
- how much, and in which ways, is the facility marked by the business unit

b) Business unit vs. Products

This description includes the interfaces of the specific business unit with:

- the products that are important for the business unit
- the products for which the business unit is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the product's share of the turnover of the business unit
- the business unit's share of the total product cost
- how much, and in which ways, is the product marked by the business unit
- how much, and in which ways, is the business unit marked by the product

c) Business unit vs. Business Relationships

This description includes the interfaces of the business unit with:

- the business relationships that are important for the business unit
- the business relationships for which the business unit is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the business unit's share of the relationship (100% for dyadic partners)
- the relationship's share of the business unit's total turnover (difficult to estimate – try)
- how much, and in which ways, is the business unit marked by the business relationship

- how much, and in which ways, is the business relationship marked by the business unit

4) Concluding remarks

In this section we bring up the most important things from the analysis in 1-3 – short.

Furthermore, we need to come back to one issue that we seem to have lost on the way. When we started the project we talked about ‘contradictions’ in the usage of resources – i.e. the ‘best’ development of each of the four resource elements discussed seldom follow the same track, which imposes problems when resource combinations are to be changed. In some of the cases we have talked about including a discussion of ‘potential’ interfaces. Irrespective of whether this is done or not we think this final section should include a short discussion of the dynamics of resource combining, for example developing one of the resources in one way might prohibit the development of another.

Maybe, ‘tensions’ is a better word for it.

The need for this discussion of tensions is most important in cases that primarily are described in structural terms. Some cases are more problem-oriented and then these tensions are included in the case description.

A BUSINESS RELATIONSHIP CASE

0) Background

In most cases it is necessary to give some background to the case – to place the business relationship and its situation in its context, e.g. something about the firms in the dyad

1) Description of the focal resource - the business relationships

Describe the main features of the business relationships. The space is limited so the description must focus on the most important characteristics of the business relationship as a logistics resource. In the previous version the following dimensions were suggested:

- volume
- time, history
- frequency
- number and type of persons involved
- contract
- matching of plans

These are examples. They might not be the most relevant dimensions in all cases.

Add other dimensions in accordance with the characteristics of the specific relationship.

2) Interfaces with resources of the same type – relationship vs. other relationships

Describe in which way the business relationship is related to other business relationships. In the previous version there were no dimensions suggested for this analysis. This analysis takes its point-of-departure in the dimensions discussed in 1) above.

The central issue to cover concerns how the business relationship is linked to other business relationships, for example in terms of:

- interdependencies
- communality of actors
- connections to other relationships
- joint actions

Again these are suggested dimensions.

3) Interfaces with other resources

The space available is limited and we need to be selective. For each of the three types of interfaces start the description by briefly indicating how many connections that are really important; from one or a few to many. Then describe a limited number of these important interfaces. Once we suggested no more than three for each type of resource, but depending on the situation four or five might occasionally be necessary.

a) *Business relationship vs. Facilities*

This description includes the interfaces of the specific business unit with:

- the facilities that are important for the business relationship
- the facilities for which the business relationship is important

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the share of the capacity of the facility that the business relationships make use of
- the facility's share of the business relationship (difficult to estimate – try)
- how much, and in which ways is the business relationship marked by the facility
- how much, and in which ways is the facility marked by the business relationship

b) *Business relationship vs. Products*

This description includes the interfaces of the specific business relationship with:

- the products that are important for the business relationships
- the products for which the business relationship is important.

Try to describe the interfaces both in qualitative and quantitative terms. For example:

- the relationship's share of the product's costs or revenues
- the product's share of the business relationship (difficult to estimate – try)
- how much, and in which ways, is the product marked by the business relationship
- how much, and in which ways, is the business relationship marked by the product

c) *Business relationship vs. Business unit*

This description includes the interfaces of the business relationship with:

- the business units that are important for the business relationship
 - the business units for which the business relationship is important.
- Try to describe the interfaces both in qualitative and quantitative terms. For example:
- the business unit's share of the relationship (100% for dyadic partners)
 - the relationship's share of the business unit's total turnover (difficult to estimate – try)
 - how much, and in which ways, is the business unit marked by the business relationship
 - how much, and in which ways, is the business relationship marked by the business unit

4) Concluding remarks

In this section we bring up the most important things from the analysis in 1-3 – short.

Furthermore, we need to come back to one issue that we seem to have lost on the way. When we started the project we talked about 'contradictions' in the usage of resources – i.e. the 'best' development of each of the four resource elements discussed seldom follow the same track, which imposes problems when resource combinations are to be changed. In some of the cases we have talked about including a discussion of 'potential' interfaces.

Irrespective of whether this is done or not we think this final section should include a short discussion of the dynamics of resource combining, for example developing one of the resources in one way might prohibit the development of another.

Maybe, 'tensions' is a better word for it.

The need for this discussion of tensions is most important in cases that primarily are described in structural terms. Some cases are more problem-oriented and then these tensions are included in the case description.