A CRITICAL EVALUATION OF SERVICE INNOVATION PROCESSES

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ABSTRACT

Outsourcing is increasing the complexity of a firm's service network. As a phenomenon, outsourcing is well researched but it is seldom regarded as innovative practice. We know little about outsourcing from a social-process view. Transforming in-house manufacturing to making use of external suppliers and their services implies a change of logistics related process. Then, outsourcing is influenced by other types of service innovations in the network, such as third party logistics firms'. Logistics firms' ambition is to adapt and exchange innovative services. With that background we argue that we know little about outsourcing based on a social process view on innovation in which it is possible to account for a deeper understanding by following the action (Hoholm 2009). The innovative capability in a network is decisive to its development and research about service innovations in business to business networks is needed.

We aim to explore and analyse the co-development of a third party logistics services with production services in an outsourcing process.

The development is studied in a qualitative, long-term process study. The analysis draws on and extends the applicability of an innovation model (Hoholm 2009), with its ambition to "follow the action", into business to business service networks research. We discuss findings related to the outsourcing process that develops in a path ascribed by its actor-network. Interactions and confrontations come about because of involved contrary forces such as competing objectives and incremental/rational vs. strongly motivating decisions. Understanding development is an important implication because projects often develop into a path far from the innovative ideas. The dynamics and complexity cannot be managed but coordinated for a certain development and in this case situational knowledge improves the ability to guide development. Thus, the outsourcing process transforms use of own production to use of another parties service in which the outcome relates to how logistics services codevelop. It is an innovation that develops in a rational way explained by an incremental process involving its actor-network and its reflection. Governance, social situatedness, and performative output are pivotal to logistics innovation processes involving logistics firm's service development.

Keywords: Outsourcing, practice, third party logistics, service innovation, supply chain management.

INTRODUCTION

Outsourcing is a phenomenon, which has been widely recognised in practice as well as in theory. The outcome of outsourcing affects strategic development and leads to changes in internal and external relations, which mean that it will affect the organisation in the long-term and also in its day-to-day operations (Moses 2009). The theoretical literature has explained outsourcing with variable-based as well as contextual studies in order to learn of its properties and the nature and adherent problems and opportunities (Moses 2009). However, outsourcing not only affects strategic development it also is a part of the development. Actually, it is an innovative idea where sometimes logistics (integrated transport, warehousing and distribution) is the content of outsourcing and sometimes logistics influences the outsourcing process. The situation of the outsourcing process; the context is important in order to understand the development.

Logistics service innovation has gained a foothold in logistics and supply chain management literature as a perspective of what strategic value logistics providers can deliver, for example, in an outsourcing process (Grawe 2009). The value is related to capability to foster innovations in firms and in supply chains. Some argue that successful firms' focus is rather on the processes they use to be innovative than on the innovations themselves (Flint, Larsson, Gammelgaard, and Mentzer 2005). Social aspects of logistics innovation are often downplayed. Actors respond to and interpret a dynamic environment, continuously reflecting on their interpretations, the interpretations of others, and responses by others to their actions (i.e., innovations). The innovation processes are characterised by uncertainty and controversy, in particular in the interaction between the mobilising of actors-networks and the exploration of knowledge that is needed to move the innovation towards realisation (Hoholm 2009). A practice lens, such as Hoholm's, opens up the study of an innovation process as situated within a network of interconnected processes. The Flint et al. model of innovative processes has a focus on the organizations' innovative capability while the Hoholm model focuses on the innovation development.

Outsourcing aims for business model reconstruction (Kuratko and Audretsch 2009), it means an innovation process that are often relying on innovation of logistics. As an innovation process, it is reasonable to suggest that an outsourcing idea's development could be understood differently, i.e. by its situated development. Then, other types of questions become interesting in order to make the most of the innovation. For example, we know little about to what extent logistics innovation should be formally managed versus allowed to spontaneously emerge or even be informally managed (Flint et al. 2005)? And, what aspects of social interaction and relationships intrude upon the innovation process if logistics innovation is seen as a social process (Flint et al. 2005)? But also, where are the key obstacles to being innovative in the logistics context (Flint et al. 2005)? And finally, how are firms managing supply chain learning (Flint et al. 2005)? A deeper understanding of social aspects of logistics innovation processes is of special importance in supply chains that are dependent on third parties (Borgström, Cui, and Hertz 2008) and a practice lens is a means to deeper insights. In social science the practice lens has had a bandwagon effect, including advances in IMP literature (Kjellberg and Andersson 2001; Kjellberg and Andersson 2003; Mattsson 2003). In line with these suggestions, it is of interest to analyse strategic outsourcing in the manufacturing industry, in an attempt to extend the implications of the innovation process model (Hoholm 2009).

We aim to explore and analyse the co-development of a third party logistics services with production services in an outsourcing process. The analysis will draw on a model by Hoholm

(2009) of how an innovation process should be studied as interaction between processes of mobilisation and exploration in a (although interconnected and heterogeneous).

The continuation of the paper starts in a theoretical explanation first of logistics innovation and then of the innovation process model. Thereafter, a qualitative case study of a Swedish outsourcing project is explained, described and analysed. Finally, we will explain the outcome of the specific project but also methodological implications of a practice theory of logistics innovations.

SERVICE INNOVATION

In logistics innovation processes, logistics providers' value is to foster related innovations in firms and in supply chains. Coordination processes to be innovative is essential (Flint et al. 2005). The broad Schumpeterian definition of innovation that Flint et al. (2005) adopt embraces that innovation can occur within product development, services, processes, or any social system. "Innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers 1995:11). Flint et al. mean by logistics innovation any logistics related service from the basic to the complex that is seen as new to a particular audience, and innovations might improve operational efficiency or innovations might better serve customers.

A service network performs service activities that work in combination with other firms' service activities (Morgan, Deeter-Schmelz, and Moberg 2007) and the outcome is dependent on what happens in "real time". Different types of services are described as consumption services, instrumental services, semi-manufactured services, and component services (Wynstra, Axelsson, and Valk 2006). The consumption service does not directly affect the performance of the buying company's primary processes (e.g. office cleaning services). The instrumental service directly affects how the buying company's primary processes are performed but are not delivered to end-customers (e.g. information and communication technology services used to support flight). The semi-manufactured service is used as an input by the buying organization for particular offerings for final customers (e.g. weather forecasts which influence flight schedules). If the service is directly delivered to end customers of the buying company, it is a component service (e.g. baggage handling). Wynstra et al.'s (2006) categorization is, however, developed in order to analyze the everyday production and consumption of services as opposed to the initial purchasing and negotiation phases. It represents, based on objectives, capabilities and interfaces a somewhat "static" conceptualization; a further refinement would include process-related variables in the description of differentiated interaction patterns (Wynstra et al. 2006).

The processual conceptualization of logistics innovation includes such variables. The interest of Flint et al. (2005) was on externally-focused innovations for customer service. Their study of logistics innovations was based on perceptions of leaders (logistics service provider firms and logistics business functions) and involved seven organizations. It resulted in a model of activities in logistics innovation processes including: (1) setting a stage for innovation; (2) identifying clues to shifts in what customers' value; (3) negotiating, clarifying, and reflecting upon insights; and (4) managing inter-organizational learning (Figure 1). What is of specific interest to this paper is that Flint et al., engage the social aspects of innovation and highlights the role of interactions and reflexivity among the innovating actors as much as innovation stages and innovations themselves.

Social aspects in logistics and supply chain management literature are often downplayed. Flint et al. (2005) specifically discuss logistics innovation as inspired by actors responding to and interpreting a dynamic environment, continuously reflecting on their interpretations, the interpretations of others, and responses by others to their actions (i.e., innovations). This is in line with Hoholm's dissertation regarding the contrary forces of innovation (Hoholm 2009).

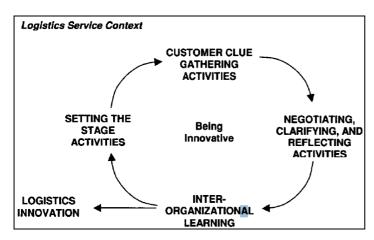


Figure 1A Logistics innovation process (Flint et al. 2005:127)

Hoholm uses the methodological and analytical tools of actor-network theory in the study of an innovation process from idea to commercialisation, and 'followed the actors' as they strived to move the innovation towards realisation. Hoholm suggests that innovation processes are characterised by uncertainty and controversy, in particular in the interaction between the mobilising of actors-networks and the exploration of knowledge. Thus, the mobilisation is in line with Flint's et al. (1), (2), and (3) aspects of the innovation process and the knowledge exploration is in line with Flint's et al. learning aspect. The value of Hoholm's findings in this discussion is that his study takes on a practice lens, which includes that uncertainty and controversy increase by the fact that the innovation process is situated within a network of interconnected processes. Thus, the innovation process is interconnected to other processes (Hoholm 2009) and also cyclical with the activities of settling, understanding, developing and learning (Flint et al. 2005). The Flint et al. model of innovative processes is compatible with the Hoholm model but where the former has a focus on the organizations innovative capability the latter focus on the innovation development. In addition, the Flint et al. model seems to be a typical process model (Pettigrew 1997) while the Hoholm model is a process model based on practices (see e.g. Gherardi 2009; Schatzki 2000).

Flint's et al. (Flint et al. 2005) call for more research on, among others, to what extent should logistics innovation be formally managed versus allowed to spontaneously emerge or even be informally managed? And, what aspects of social interaction and relationships intrude upon the innovation process if logistics innovation is seen as a social process? But also, where are the key obstacles to being innovative in the logistics context? And finally, how are firms managing supply chain learning? Thus, these questions address, in turn, governance of the logistics innovation process, social situatedness of the process and social output. For these kinds of questions it is especially appropriate to use the methodological and analytical tools of practice theory, such as actor-network theory or social practice theory of learning and organizational development (Gherardi 2009; Hoholm 2009; Orlikowski 2000; Perrota forthcoming). A deeper understanding of social aspects of logistics innovation processes is of special importance in supply chains that are dependent on third parties (Borgström et al. 2008).

The idea and development of strategic outsourcing might be more or less planned and the raison d'être might be ambiguous (Mintzberg 1994; Mintzberg and Waters 1985). The outcome of the logistics innovation process might be seen as indeterminate as Hoholm characterised it by uncertainty and controversy from the interacting actor-networks/knowledge exploration. Yet, experience of different developments seems fruitful in order to learn how to go about with future strategic outsourcing processes. Actually, Hoholm suggests that there is a need for testing and tuning the model of innovation processes in more settings; partly be tested at more "strategic levels", such as the development of strategy, and partly within other industries. The discussed innovation model is developed under the umbrella of practice based studies. In social science the practice lens has had a bandwagon effect, including advances in IMP literature (Kjellberg and Andersson 2001; Kjellberg and Andersson 2003; Mattsson 2003). In line with these suggestions, it is of interest to analyse strategic outsourcing in the manufacturing industry.

AN ANALYTICAL SCHEME OF INNOVATION PROCESSES

The actor-network approach has been applied to a variety of settings in research since the early work on the laboratory by Latour (1987). The approach has successfully been used to understand how creation and change such as new ideas, new markets or new products are developing (Czarniawska 2004; Helgesson, Kjellberg, and Liljenberg 2004) showing how interpretations, translations, negotiations and conflicts are influencing technology, economic and social development. In this study the actor-network approach has been applied to the innovation process.

Theoretically we are to a large extent building on a recent model developed by Hoholm (2009) in his doctoral thesis about the development of innovation processes based on a rich empirical study (see figure 2). An outcome of Hoholm's study is an analytic scheme for studying and analyzing industrial innovation processes in terms of the practice of industrial innovation, which we will describe and explain in order to apply it to our case of innovation process. The model corresponds well with Wynstra et al.'s (2006) call for a more dynamic conceptualization of services in that it is based on interactions.

In the model by Hoholm the innovation processes is conceptualized as a dual process: Partly, as a process of knowledge exploration: And, partly as a process of mobilizing actor-networks (see Figure 2). Knowledge exploration is an iterative process where propositions of the history, the present and the future are "aired" and changed. There are tensions between the believed innovation promise and the realities of the development process, which are not solved by consistence among them but by the "reality" i.e. what actually happens. This is formed by involved parties over time (some actors are influential in one phase but less influential in another), involved technologies (how these are combined and utilized in this innovation process and in other related processes, and by economic relations (a low cost budget, for example). Mobilising actor-networks typically involves politics and presenting, convincing, forcing and negotiating. It is in the mobilising actions that the innovation promise is formulated and re-formulated.

Staging of innovation processes is the initiation caused by a happening, a question, an incidence or a plan. It is an idea that comes from entrepreneurial boundary-spanning in creating something new. The objectives might be to improve operational efficiency or better serving the customers; it depends on the problematisation and the first small-scale mobilisation of resources.

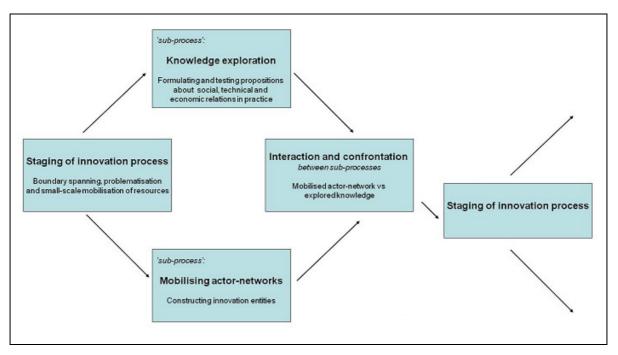


Figure 2 An interactive process model of how to study innovation processes as interaction between processes of mobilisation and exploration in an innovation process Source: Adapted from Hoholm 2009:238

After the staging there is the problem of how to mobilise the time, space, actors and resources needed to start the exploration and realisation of the innovation. The innovators repeatedly need to mobilise support and more resources from their partners or find new partners. Thus, mobilising actor-networks is a pragmatic process of making use of involved parties and resources in order to expand the actor-network and the access to further resources. The question of "what is in it for me" is revisited. It is an ongoing construction of meaning and arguments in order to produce mobilising power over resources and decisions.

Simultaneously, knowledge exploration is ongoing whether the ideas hold in reality. The ideas are propositions that need reformulation and tests based on the mobilised actor-network. The mobilised actor-network has social, technical and economical relations that impact the development. The knowledge exploration is a two step process of creatively imaging relations and testing these in practice. This testing changes the innovation, often in unforeseen ways, and therefore an aspect of exploration is uncertainty.

The processes of mobilisation of actor-networks and exploration of knowledge sometimes interact and confront each other. Hoholm (2009) exemplifies when allies in the actor-network start getting impatient, the exploration process may be confronted for its lack of progress or its departure from the original idea. Similarly, discoveries and knowledge generated in the exploration process may challenge the mobilised actor-network and change their interests and participation. Both ways in which such interactions and confrontations come about and their results is actually revealing some of the dynamics of innovation processes; the parts of where new meaning are negotiated, choices have to be made and new directions of action are taken (Hoholm 2009).

Mobilising actor-networks and knowledge exploration have different outcomes in the innovation process. Exploration/knowledge creation tends to increase uncertainty with new promises and possibilities while the mobilisation tends to reduce uncertainty as reality unfolds. The mobilisation is directed towards aligning interests and reducing risk, whereas

exploration is directed towards formulating and testing propositions about reality (Hoholm 2009:249). The innovation process involves these two sub-processes that are based on opposing logics and thereby often conflict and challenge each other. For example, in order to enrol allies in the continued innovation process it is necessary to converge the idea on a number of aspects, and this will create a "lock-in" for the remaining process. The "lock-in" holds the exploration of the project within its limits. New elements (human or non-human) that are enrolled and mobilised influence the development.

In logistics and supply chain management innovation processes this innovation process cannot be isolated from other innovation processes in house or in the supply network. It is evolving with a set of interconnected and interacting processes that mutually are influencing each other. Hoholm explains how these sometimes are translating the other into one's own actor-network, sometimes are interests aligned and sometimes one idea development takes over and even betray another. The process model (Figure 2) is a simplification as it depicts one innovation process. At work, this process is situated in networks of interconnected innovation processes, where for example, the knowledge exploration in one gives an idea to another innovation process, influence the knowledge exploration in another process, and the mobilising process in yet another.

Also of especial importance logistics and supply chain management innovation processes is that Hoholm (2009:292) argues that new user-producer relationships are hard to establish during innovation, and they will be fragile due to a lack of tangled interests and resources. Thus, there might be little commitment from the new user. New allies might drop the innovation without warning and without risking much but mobilising established relations would imply a clear advantage for the development.

EMPIRICAL DESCRIPTION OF OUTSOURCING TO CHINA

Method and case company

Before we go into the case we will describe the background of the outsourcing and describe how the research project is performed.

The study

Our research project was initiated in 2007, and the empirical description is based partly on real-time and partly on historical accounts. We followed the project from 2007-2009. In 2007 the focal company launched new A and B models and the sales peaked, which continued until the financial crisis in October 2008 when the sales dropped dramatically and lots of lay-offs was executed.

Our learning about the development is from interviews in Sweden and in China with involved parties. The involved parties have given different perspectives in the interviews. The data is interpreted in a way to make sense and add insights to development of the process. During the study interactions with involved parties has provided valuable reflections of the interpretations. The majority of our empirical material relates to the supply side of our focal company, i.e. transporters, third party logistics providers, the supply network, and the focal company's purchasing function and the selection of these has been purposeful in order to facilitate the explorative purpose. The case is one specific outsourcing project. In many other case studies it is common to set an unit of analysis, in our methodological approach it is rather a question of following the action in the process (Kjellberg and Andersson 2003). The interviews equal approximately 30 hour's interaction that is transcribed. In addition,

secondary material as interviews in newspapers, journals, and master/bachelor thesis give insight to development in broader terms, such as press releases about product launch, layoffs, comments upon market, analysis of logistics as well as of competences. Managers involved both in marketing, purchasing, product development, logistics as well as and production were interviewed taking part not only in Sweden but also in China. Furthermore interviews were not only with the focal firm but also with suppliers and suppliers' suppliers. We also made company visits of offices, warehouses, factories in Sweden and in China in several stages. The explorative purpose of the inductive study is facilitated by these multiple sources, because new and refined questions can be added (see also Flint et al. 2005) and theoretical literature can be brought in over time in an abductive way (Alvesson and Sköldberg 2008). The data is situational and not entirely reproducible because the development process changes with the situation. Instead the insights and theoretical implications are possible to refine in other studies. In relation to Langley's (1999) evaluation of different process analyses; our approach has moderate to high accuracy, in relation, e.g., to a narrative or a grounded theory approach that remain more deeply rooted in raw data. The conceptualizations are theory-laden rather than simply representations, and the generality is moderate (until tested on more data).

The interpretation and analysis of the material has been done in four steps. A first analysis is done already in the interview situation where the respondents were asked to develop some answers that we thought were interesting regarding the outsourcing idea, development, and implementation. The second is refining the transcription by comments to the protocols and discussions in the research team. The third step is the writing of two cases and illustrating the cases in the next section. The fourth analysis depends on the theoretical framework used which in this paper is outsourcing from an innovation perspective that is confronted with the logistics service provider's service development. Both represented specifically by the conceptual model of innovation processes (Hoholm 2009). In reality, much more complexity exists, and making the case description to be a "good" story is important in order to facilitate reflections. Interpretative theorizing is taking surprises from the field material seriously (Alvesson and Kärreman 2007) and the "good" story aims to create understanding of the social elements. Thereafter, a reflection facilitates a further analysis of the outsourcing case as a service innovation process.

Case - focal company background

Our focal company is an OEM that makes exclusive consumer machines. The branded machines (brand A and brand B) are well-known for being technically advanced and for its high quality. Consumers buy it to be expert users; they often invest also in training in techniques, additional options and equipment, which is an important income stream to the OEM. Our focal company is a market oriented company that has some experience of low cost country sourcing. The former owner, Invest Kapital (a pseudonym), acquired brand B to achieve synergies, such as in production, between the brands A and B.

A focused product development of a common platform for brand A and brand B opened up the possibility to scale advantages in production. In 2004, the management team of our focal company decided to offshore production of components to China, which they perceived as an innovative idea for reducing costs. Both brand A's and B's product base is the platform. Producing the platforms at one site facilitates cost advantages by economy of scale in production, and even more so in a low cost country. The platform and components were already produced in an east-European low cost country but moving the production to China seems to provide even lower costs to the increased volume. In this phase of off-shoring, the

OEM was developing a Chinese supply network via an employee that had moved to China, it was acquired by Next Investor (a pseudonym). The new owner extended its portfolio of brand C, a mass-produced low cost machine, with the brand A and the brand B. Brand C is mass-produced in many sites globally and mass-distributed and one of the sites were, maybe as expected, in China. There were few synergies between A/B and C. In 2007, C-Worldwide decided to use their existing production facilities in China, in order to leverage the ongoing outsourcing process.

Case – logistics service provider background

Logistics service provider (LSP) is a global company. It has long experience to provide international transport and logistics services. Its global network covers Europe, Asia, North America, South America as well as Africa. Specifically, it has established over 20 daughter companies in China. The major operations are based in Shanghai, Hongkong and Taiwan. LSP's core business is to provide cargo transport and integrated logistics services to its clients all over the world. It is specialized in worldwide solution in air and ocean freight. LSP also provides various value-added services and tries to ingrate these services to its service package.

LSP in Sweden handles a lot of different tasks for their customers. It can be storage of goods, handle of return goods, value-added service and overall with the purpose of creating value to their customers. To take care of the physical handling of goods is a big part of the daily activity at LSP. Furthermore, LSP also has administrative tasks, ordering, delivery control, quality ensuring, invoice control, custom, spedition, coordinating transport. LSP tries to know the prerequisites of what type of service the customer wants. It can be a wide range of activities that the customer wants LSP to do and also a wide range of products. The orders can be both small and big.

LSP has a combi-terminal close to OEM. It has a big capacity and it is therefore presumed a certain size of the mission taken. It has to be a certain synergy to have the customer in the combi-terminal and therefore they usually say no to small customers. But they also look at the overall picture and analyze the potential of the customer to grow in the future. LSP can start with a small part of activities that are seen as small in the overall picture. These activities can expand over time or has the potential to expand over time. LSP in Sweden also takes some potential customers into consideration if other parts of the LSP are working with the customers. Taking into consideration the situation on the market today they are more opened to customers and customer's requests. LSP's customers are in the foundation directed towards storage. The customers have a need to store their goods somewhere. That's why they need LSP. LSP has foreseen the challenges to provide customized logistics service packages. As many clients are going global, LSP also needs to develop localized service offerings.

LSP provides warehousing and related services at OEM's central warehouse in Sweden. It also provides international freight transport service to OEM and its major suppliers. When OEM starts to outsource from China in 2007, LSP's daughter company and representative offices in China are also recommended to OEM's local Chinese suppliers. LSP has been providing logistics services to OEM for many years. The relationship between OEM and LSP is very stable. Both parties are dedicated into the relationship. They expect to work as partners in the foreseeable future.

Integration in involved supply chains and development of the outsourcing project

An outsourcing initiative to China is a decision that is well in line with other Swedish manufacturing firms' initiatives during the early 2000s. The change would obviously impact

both the existing supply chains and be a reason to design new supply chains. We will illustrate the scenario by describing the development: A first phase of the OEM's own initiative and a second phase with the initiative imposed by Next investor.

The first phase

The problematisation started in the focal company, who develops innovative customer oriented machines. The OEM's market function is thought of as important for future survival. The supply base and purchasing function in the focal company is historically not a strategic function beyond quality and delivery. Sourcing is mainly operational in its character. But, they do support the product development projects that are of more strategic importance by finding appropriate suppliers that manage their demands of quality and terms of delivery.

The focal company's new CEO would like to work with the supply base strategically in order to improve the time in the delivery process but above all time in the product-development process. He had experience of industrialising innovative technology products for lower costs from his earlier employment. The OEM's purchasing function worked to attain long term relationships with suppliers. Otherwise they have to invest and learn the new supplier their demands of quality and consistency in deliveries, which is an extensive task. In 2007, the OEM decreased the supply base to 150 out of previous 600 suppliers (whereof half in Europe and half outside). Approximately 100 of these suppliers have unique competences.

The objectives of the outsourcing were not stable. In the first phase, outsourcing as a greenfield investment differs from outsourcing via an owner's production site. Both aims to provide lower costs but the underlying structure and performance differ widely. The greenfield investment intended to outsource for lower costs. The plan was to take advantage of suppliers in China and gradually add more local suppliers and intermediates. They developed their outsourcing idea and coordinated by the supply manager in China, whose role was to coordinate and engage the suppliers as they communicated in a more effective manner with each other in operational issues. Additional transportation costs were identified as a challenge. Discussions with the OEM and their partner for transportation were ongoing. Often high cost modes of transportation were used because of the high value of the products and high demands on service level.

Production relates to other functions, such as purchasing and product development. The intent of local sourcing in China was challenged by bindings between our focal company's R&D and suppliers. R&D played an important role in continuously developing successful innovative customer solutions. The demands from the Swedish R&D are in many cases difficult to appreciate for a supply network in China. Some demands were implicit and difficult to interpret for different organisations in the two countries while others were developed over time in close cooperation with a local Swedish supplier. Our focal company viewed these long term relationships as difficult to change as it relates also to their uniqueness in the market.

Then, what we will see in the next phase, the outsourcing process changed in 2007 with the C Worldwide's decision to involve their Chinese production site. This seemed to be in line with the Chinese sourcing decision that our focal company already was working on. The difference is how the global outsourcing happened. Now, the Chinese production site of C Worldwide, i.e. a sister firm to our focal company, was used for production. The sister company were, as a high-volume producer, sceptical to the incoming low volumes and high technological demands of tolerances in the product. They were excellent in mass producing low-cost products, not in these high-end products. The platform was handled separated from the mass

production. So, by this outsourcing process another path than of widen their own supply network was at hand. The focal company had to cooperate tight with the sister in China to make sure the product should not change characteristics and instead of discussing low costs the focal company were troubled with politics of where to produce, what consequences would the production in China imply in terms of their market offer?

The next phase

The coordination, in order to make the outsourcing function, was extensive. The OEM's local representative moved back to Sweden to facilitate the production transfer. Personnel from the production sites visited each other in order to facilitate learning. The OEM had too little production capacity and the Chinese sister relieved the pressure to lower costs at the same time as increasing capacity. The Chinese sister became the responsible for the transferred production and the production knowledge might be seen as "handed over" in contrast to cocreating solutions with the sister and other Chinese suppliers. However, the sister was not willing to take active part in the development; they preferred to act in accordance with the specified demands on quality and precision. Transportation and logistics services were facilitated by the logistics service provider's local office in Shanghai. Transportation for the Chinese sister was managed by low cost modes and the OEM got directives from the owner to keep down transportation costs. Thus, in addition to extra routes of the material for quality control the routes became slower. To our focal company this means the outsourcing did result in lower costs, but also lots of problems because the product changed in its characteristics and the production process involved different types of uncertainties. In addition, the OEM now dealt with a strong sister with a low degree of commitment to the outsourcing process.

Instead of developing new solutions for the complex material flows the OEM decided to change incoterms. OEM's Chinese suppliers were sending the goods mainly by sea freight on incoterm Free On Board (FOB) due to cost reasons. It means that OEM's Chinese suppliers do not need to pay sea freight nor domestic fees in Sweden. With the development of OEM's outsourcing to its sister company in China, material flows and logistics process are becoming more complex. It requires the focal firm OEM to have close coordination with its sister companies, suppliers and logistics service provider. However, the OEM has few incentives to take on this extra coordination for C's account. Instead, OEM has decided to change the incoterm from FOB to Delivery and Duty Unpaid (DDU) warehouse. It indicates that suppliers need to take care of the international freight costs and the domestic deliveries to OEM's central warehouse. The logistics service provider then starts to negotiate with different suppliers. However, as for most of the suppliers, it is a quite a big change. DDU is a new setup and suppliers are not familiar with that. Meetings are organized so OEM and the logistics service provider can further discuss with suppliers. Still, suppliers use FOB terms. Actually, if the suppliers were to change the term to DDU, they would have to take more responsibilities and calculate the whole costs for their products. It is regarded as a big burden for many suppliers. As a result, the material flows remain complicated and in need of close coordination. During this process, the logistics service provider wants to come up with different solutions. But they have difficulties to understand the OEM action and the reason of OEM.

The common platform changed the sourcing situation together with the situation with a new owner. The platform is the base for more than ten different end products that could be outsourced to C's production facilities in China. Now the focal company is one among others that produce the platform. Some production is important for the focal company that researches

and develops the platform in order to learn and experience by every new product introductions. Naturally, the focal company seeks suppliers based on supplier experience and know-how rather than transaction costs. However, the Chinese production site's competence is related to efficiency from low costs processes. Sourcing of platforms from these two extremes of production sites result in "different" characteristics of the end-product. In other words, first the focal company initiates procurement and determines the acceptable degree of quality and then, the Chinese production site is expected to deliver the same product to a lower price. The Chinese site is used as their suppliers but needs to a great extent rely on the same sources as our focal company in order to manage the requirements. So, this is a new situation for both sites. The Chinese site is not satisfied with the role and function of the imposed supply network, they are traditionally heading for low costs and the new set of demands are alien. The Swedish site is not satisfied with all extra work in the production transfer and not with their role as a middleman between old European suppliers and the Chinese production site. Thus, setting up and designing parallel and overlapping supply chains seem to be possible despite strategic differences from the start. For our focal company, the outsourcing means a huge investment of resources and uncertainty about the product characteristics, actual advantages in terms of lower costs and a risk of lost knowhow of developing, producing and sourcing. The Chinese production site needed to engage in production with higher demands and set aside a minor part of its production resources for the "special" production. Hence, they risked little by taking part in the development.

Logistics activities are closely interdependent with outsourcing activities. Despite extra logistics cost the outsourcing idea was thought of as advantageous. However, the turn taking in the outsourcing development; the involvement of C's Chinese production site impacted the development via different logistics activities: The technical and to some extent the physical processes are integrated and are functioning as intertwined processes. Because the technical development was kept in Sweden and some specific (sometimes Swedish) suppliers was involved, the product flow becomes complex and in need of close coordination. The logistics service provider was close to be involved but their coordination services were never accepted despite much talk. Other services were developed together, for example, an advanced track and trace system. The logistics service provider had developed an advanced track and trace system at it's headquarter and transferred the basic module to its daughter companies all over the world. As for OEM in Sweden, they ask for this type of service but they need a more customized version of the track and trace system on the information of order level. Therefore, the logistics service provider's daughter company in Sweden starts to analyze OEM's information flow and its IT setup. They also look into OEM's suppliers in Sweden and China as well as overseas customers. After constant interactions with OEM, a customized version of track and trace system for OEM is launched.

Our focal company felt obliged by their promises to customers but had few "hard" incentives to take on this extra coordination for C's account, because as the market changed they wanted to keep production in-house and got no incentives to develop the outsourcing further. The goals set by the owner was rather to lower costs at the own site. In addition, administrative routines of how to handle the new flows are uncertain. The production sites got a role as intermediates for some sourcing, which go beyond their normal working procedures. Over time (in 2009) the sister's purchasing function partly worked to source for the platform. Our focal company's and the sister's purchasing functions had different views of how to fulfil its tasks. For the sister, costs are most important and for our focal company, quality over time is more important. Naturally, as the production sites are dependent on each other with regards to some sources, the divergent goals create tensions and circumscribe development. For

example, some sourcing would preferably be locally purchased, and also such tasks need to be as carefully transferred. The operational purchasing emerged and decisions were handled but the strategic purchasing decisions and coordination of the overlapping networks and that kind of issues were never on the agenda.

The new owner's strategic decision to offshore our focal company's production to the sister was pivotal to the development. When Next Investor acquired our focal company it planned to sell the company in a few years time. Outsourcing would lead to cost advantages and a better deal for Next Investor. The nitty-gritty of outsourcing, such as strategic coordination of sourcing, supply and transports are far from the top management agenda. The middle management at our focal company as well as at the sister encounter and question problem areas, such as cost vs. quality, brand value over time due to country of origin, usage of middlemen, local sourcing vs. sourcing of expert producers, how to take advantage of the overlapping network, the need to produce a high end product to a low cost but these issues never became any major issue for coordination. As long as the production sites are competing for production there is little incentive to coordinate physical, administrative, economic and social processes. Actually, the actors' role and function in the supply network were unclear.

Economic incentives of sharing skills and knowledge are unclear as the own production sites performance is one of several, sometimes competing, input to the common owner, C Worldwide. Socially, the Chinese organization and our focal company are distant to each other - the parallel supply networks talks different language, has different goals etc. Some activities are integrated to some extent, such as information sharing, joint planning, and coordination of interdependent flows because these are needed to be able to function on the most basic level. In the performed coordination and design of parallel supply networks, knowledge of logistics structure and access to network became a valuable knowledge that was developed. In 2009, the downturn in economy has created anxiety of the production sites' survival. It became a question of utilizing the sites' capacity and improving the cash flow. A political game to "win" production to the home country production site at C Worldwide's board meeting was won by our focal company. However, with a major downturn in sales there were little to celebrate. The expensive components and platforms for the high end segment is a burden with a decreasing cash flow. And, the parallel and overlapping Chinese and Swedish supply network were still at place. As long as production sites are competing for production there is little incentive to coordinate physical, administrative, economic and social processes.

On a strategic level and on a middle-management level the goals became slightly confused. If the production transfer succeeded then our focal company might lose control and decision right of where all production takes place. If the Swedish production site gets too small then the capability to develop new models and innovative solutions will decrease over time, which in turn will weaken their market offer. Thus strategically, the involvement of the sister in the outsourcing process was more ambiguous than a "greenfield" process. The two worlds of the sister and our focal company differ with regards to what is important and how to do. The core reason to produce in a low cost country is to lower costs. The same standards for quality have to apply regardless of production site to maintain the brands' core value. However, the different companies' middle management have different frame of references of how to do this. Matching these is difficult based on the strategic ambiguity. The uncertainty of how the process will be coordinated creates frustration but is also a breeding ground for learning. The other's way of doing gives insights to their own way of doing. The OEM started to question whether all special components have to be special because these impedes the ramp up of production and delimits the choice of suppliers. As is, components might travel an extra turn around the world as only suppliers with a close relationship to our focal company are able to produce it. The sister has questioned its (and the supply network's) biased focus on costs because of its burden on the product image. For high end products the production process is important because it determines the result. A similar difference applies to the distribution: C is used to arrange low price mass distribution, while high-end products need to be shipped to individual customers. Next Investor's low-cost demands forced our focal company to use slower and cheaper logistics modes than they preferred.

Performative outcomes

Examples of what are achieved in the outsourcing process are the coordination of production, sharing knowledge of how to produce and tools for production. There are still problems with quality but this learning process has proceeded effectively. In the implementation of outsourcing the quality problems were one reason to buffer and control the products in-house instead of taking advantage of the service logistics provider.

The order-to-delivery process needs further coordination. The outsourcing process has developed the production and the distribution of the high-ends machine into a situation were neither the OEM nor the customers are fully satisfied. In the future, the OEM would prefer to address strategic coordination in order to develop along their preferred path of being highends machine manufacturer.

In all, some resources seems to have played a pivotal role in the outsourcing process; production sites, R&D capability, knowledge of logistics structure and access to supply network of low cost suppliers and developmental suppliers. These resources have been used as they historically have been used except when there has been a forcing element (such as a board decision to employ another production site). The learning has been of operational character rather than of integrative. A lack of coordination has burdened the actors. Over time problems emerge that are discussed internally. As those that are involved have little power to change the situation these discussions are frozen and unsettled, for example, transportation services were never developed to additional logistics services instead the additional transportation costs were used in a negotiation about production sites. The coordination is weak in the C Worldwide network and lacks inter-organisational as well as organizational project groups to fuel the development.

Analysing the development of outsourcing as an innovative process

In the empirical description we have described the OEM's outsourcing process development. It should be clear that the actors need continuously to respond and interpret dynamics in the environment, the interpretations that they have done and what interpretations that others do, such as Next Investor or the Chinese counterparts in line with Flint et al. (2005) discussion. Such social aspects have major implications on any social phenomenon because the controversy forces need to be made sense of in order to understand the phenomenon of outsourcing as an innovative process. Innovations do have a high likelihood to fail and the forthcoming analysis could serve as a scheme for reflection in order to understand governance, social situatedness and performative outcomes.

Staging outsourcing

Traditionally, the OEM's purchasing function is not seen as strategically important but more of services function to the product development and to marketing functions. As the new CEO

started, new opportunities lowering the costs were seen by developing the supply network in order to industrialise the production and by outsourcing some production.

Knowledge exploration

The OEM's outsourcing initiative was based on the proposition that efficiency as well as effectiveness could be improved by working with sourcing in another way. In the process, some agents and suppliers were involved to refine the product structure in order to increase efficiency and an employee was setting up a supplier network in order to be effective with regards to the demands placed on sourcing. The relations to Chinese suppliers were close as the employee put much emphasis on "living in" the demands in each relationship. In this learning phase the purchasing function at the OEM thought the proposition engaging and exciting and involved suppliers engaged for future business. During the knowledge exploration processes the aim is to create knowledge, which might increase rather than decrease uncertainty and complexity as more possibilities opens up, it is in the interaction between mobilisation and exploration processes that the project is compromised in a certain direction (Hoholm 2009:246)

Mobilisation of actor-networks

The pragmatic process of mobilising the time, space, actors and resources needed to start the exploration and realisation of the innovation is about mobilising power over resources and decisions (Hoholm 2009). The CEO opened up for outsourcing and slowly the process took shape as the supply network developed through the employee in China. The OEM had an ongoing good relationship with a logistics provider that were willing to engage in line with the extra demands; handling the transportation and in the future more advanced third party logistics services. The mobilisation processes of actor-networks is from the beginning characterised with uncertainty that nobody knows an answer to: Then, as actor-networks are recruited and committed, a degree of certainty has to be presumed (Hoholm 2009:246)

Interaction and confrontation between exploration and mobilisation in the first phase

The OEM explored knowledge and mobilised the needed actor-network simultaneously. Outsourcing *and* engaging more advanced third party logistics services would imply a too high uncertainty. Despite that the logistics service firm were mobilised, it seems like the OEM's logistics function cannot develop the explored knowledge of outsourcing to China with the third party logistics firm. They need to practice and learn more about demands of customers, possibilities, problems etc. This unwillingness to bring in a third party is also related to the uncertainty of what to expect, such as is it right quality, right package and to the feedback loop of how to better formulate their demands and prescriptions in their orders.

The new CEO brought strategic sourcing into the OEM, partly supply base reduction and partly outsourcing, these two processes interacts and complements each other as they were practised. R&D related suppliers are kept while other relations are complemented. Also the knowledge exploration performed by the employee in China facilitated both continued learning and practising, because he had close relationships to the OEM as well as to Chinese suppliers.

However, this innovation process is not a stand-alone process. The OEM was acquired by a big company that owned a huge actor in the same industry, but in another market segment, forced the innovation process to be re-staged.

Next phase of staging innovative outsourcing

The new governor brought with them new ideas and a parallel supply network involving a Chinese production site. The cost structure was now seen in another perspective; in the wider networks perspective. Outsourcing as an idea was approved but synergy of the acquirement was also an important process. Therefore C's production site was involved, which was a decision that led to another type of problematisation and large-scale mobilisation of resources as these should produce lower-end types of the platform as a sole supplier.

Continuing knowledge exploration

Knowledge had to be explored in the matters of: Who was the Chinese production site? The Chinese production site mass produced low cost machines that was something completely different from the high-ends machines they now had to take on. What kinds of knowledge did they have? Much of their knowledge related to efficiency that the OEM wanted to learn more about. However, the quality and working methods was not acceptable to the OEM's needs. And, the Chinese production site had little insight in their business model and poor incentives to learn more because the outsourced production was "too small" to make a difference in their yearly production. Was the Chinese production site actually a cooperating partner or a competitor in Next Investors portfolio of sites? Next Investor had a short term perspective, they had stated that they would sell the OEM within a few years – maybe they would close down some production site? At the same time that the OEM had to make sense of the development they had to change direction of their outsourcing process.

The employee with China-experience, in company with people from production, exchanged ideas, transferred necessary production equipment and production methods to the Chinese site. They experienced that the supplier was huge in relation to them but was willing to learn from them regardless the difference in size. As the production transfer preceded both parties learned

by doing. The OEM learned, among others, that they needed to specify explicit what they wanted and that process quality was difficult to achieve from the supplier who were accustomed to product quality, i.e. they checked and ensured the product instead of process.

Further mobilisation of actor-networks

At this point, the actor-network was pre-set at least to some degree. The employee in China had to move back to Sweden and work with transfer of production from Sweden to China. A plan of necessary steps was developed and problems along the way in the transfer were handled as both parties needed to fulfill the obligations and they liked to learn more of the alien part. When we interviewed these parties they had a common sensemaking of cost vs. quality, and they feared that the high-end brand value would decrease over time due to country of origin. But their view of the supply network, such as how to use middlemen and service providers, the possibility to use local low-cost sourcing despite a need of "expert" suppliers was unsettled. Also, a strategic inertia appeared because the issue of how to take advantage of the overlapping network was not delegated. C's top management team used consults in order to address some of these questions but that initiative was not included in the outsourcing process. Instead a directive to cut transportation costs for the OEM was launched. At the same time as the OEM tried to mobilise the new actor-network the market dropped for all types of machines, with the 2008 financial crisis, but foremost for the high-ends machines. The unclear objectives, the competing atmosphere among the production sites and the changed demand of products reversed the strategic development of OEM's outsourcing to merely coping. Ambiguous goals change meaning with circumstances and along the declining faith in the idea different resources interfered in the re-mobilisation of the actor-network. The different actors draw on available resources and the effect was that the actor-network could no longer spot the benefit of outsourcing.

The crisis was a major drawback for Next Investor's plan to sell the OEM (and potentially also C). And they started to discuss the value of parallel networks, which became a political agenda. This development, the OEM regarded as a betrayal and they started to demobilise the actor-network and tried to take back some of the production by referring to past problems and future threats.

Next phase of interaction and confrontation between exploration and mobilisation

Of especial importance to logistics and supply chain management innovation processes is that an innovation process cannot be isolated from other (innovation) processes in-house or in the supply network. The Next Investor swapped the outsourcing into a very different kind of process when it involved C. Governance is evolving with a set of interconnected and interacting processes that mutually are influencing each other. The confrontation based on different influences along the development re-directs objectives, process and outcomes of the outsourcing.

Different sub-processes interacted, such as R&D demands and using different production sites. Also of especial importance to logistics and supply chain management innovation processes is that Hoholm (2009:292) argues that new user-producer relationships are hard to establish during innovation, and they will be fragile due to a lack of tangled interests and resources. The OEM and the transportation firm were about to develop the relationship in order take advantage of logistics services beyond the transportation. Usually, they cooperate effectively but the OEM became hesitant to continue that development. The outsourcing idea

and the service logistics development confronted each other but other development processes continued with other types of projects, such as the track and trace initiation. Also, the C network and the OEM had a genuine interest and explored knowledge together but they were not interdependent on each other. Instead they were forced into a competitive situation. In line with Moses (2009) we mean that the outcome of a make or buy decision affects competitive advantage as perceptions of the product might change and the production and distribution process are changed, and the strategic development at least to some extent is enforced into a direction and that it leads to changes in internal and external relations. Moses found at least eight characteristics shaped this process; organizational position, time for development, complexity of products, designation of process owner, make or buy strategy, production systems, customer relations and supplier relations. We argue that these contribute to the social situatedness and might exemplify these from our case, organizational position gives power in internal negotiation, time for development might run out as the market situation changes, complexity of products mean that in one phase industrialization of the product facilitated outsourcing, while in the next phase any kind of complexity hindered the outsourcing, designation of process owner was influential because in the late phase the governance imposed at least political hinders and the OEM counteracted these, a deeper cooperation with a logistics service provider and further outsourcing development, make or buy strategy changed objectives in the second phase is natural as circumstances change, production systems the ambition was to take advantage of mass production, which turned out to be difficult in the second phase - too big differences, a different culture make it difficult to integrate for synergies, customer relations and supplier relations play a specific role to different manufacturers and these are the sole reason for many of the OEM's advantages, consequently a loose control will erode the market offer of high quality and technically advanced machines. In total, these characteristics enforced confrontation in the happening and froze further outsourcing development.

In order to understand the development it is important to acknowledge that different reasons for actions meet in one outsourcing project. These different sub-processes might be seen as temporary suboptimising solutions to a particular problem and forms a social situatedness to the outsourcing process. OEM's first and second phase of outsourcing changed dramatically over time in content. Thereafter, it continued with an attempt to withdraw the outsourced production because there were stronger forces to relocate the production back in Sweden in order to avoid lay-offs. Despite the withdrawal the OEM had performative outcomes, such as advanced coordination of production, cooperative production, knowledge sharing of quality, a deeper understanding of the order-to-delivery process including distribution, interest in strategic development regarding the purchasing function and the supply network because reflection of what happened breeds new and refined questions. The social situatedness and performative outcomes is important to the Flint et al.'s logistics innovation process highlighting negotiating, clarifying, and reflecting activities that is followed by interorganisational learning (see Figure 1). However, negotiation and clarification is dialogical and we learned about the pivotal role of the owner in this case as the outsourcing project dramatically changed its long term objectives. Actually, the long term and short term objectives became controversy forces.

Controversy forces need to be made sense of in order to understand the phenomenon of outsourcing as an innovative process. Innovations do have a high likelihood to fail and the analysis has followed the happening by reflection. We have critically evaluated and brought in governance, social situatedness and performative outcomes as important attributes in order to understand outsourcing as an innovation process.

CONCLUSIONS

We have studied the development of an outsourcing process from the outsourcing idea initiation, involving the development and implementation, and the co-development of a third party logistics service based on an analytical scheme of innovation processes. The analysis takes off in that the innovation process is interconnected and heterogeneous; it draws on interaction *and* confrontation between mobilisation and exploration (sub-) processes. The approach and the results are a contribution to logistics and supply chain management research, not only by addressing logistics innovation, but by engaging in the social aspects of innovation and the role of interactions and reflexivity among the actors as much as innovation stages and innovations themselves (Flint et al. 2005). Instead of (cyclical) stages and outcomes of innovation processes, our approach illustrates the complexity inherent in myriads of ideas and actions that are added to (or withdrawed from) the innovation process over time.

The contribution to industrial network research relates to strategic development. Sensemaking of interactions and confrontations is important in order to learn about action in the industrial system. The case and, even more so, the analysis illustrates dynamics and complexity and serves as a source to reflection for practical implications. The happening in this case is socially situated and some of its characteristics are likely to be around in other innovation processes. Knowledge exploration to make sense of the past, the present and the future is an output and input to mobilisation of actor-networks and vice versa. Innovation interpreted in a process model (Hoholm 2009) is a contribution to service innovations in business to business networks because the analysis shows holistic and dynamic patterns, which is needed in logistics innovation models (Flint et al. 2005) and in advances of business service knowledge (Wynstra et al. 2006). Hoholm's model is an open inquiring conceptualization of service innovation processes, which involves dynamics and complexity in actor-networks in order to understand development.

Earlier research in service networks assume that the customer perceives the network as a whole and interprets the service co-production by multiple members as a single process (Morgan et al. 2007) in which our analysis increase the understanding of what happens in the outsourcing co-production process. Development of service innovation depends on intertwined action in which learning need to be co-evolving in interactions. We suggest that governance was important to the development of outsourcing, which was unexpected as it is seldom mentioned in industrial networks literature. Top management support is not a solid variable, it might be more or less, change over time, and depend on the development of other initiatives. Our case of outsourcing had top management support but the objectives changed over time as the further knowledge was explored and the actor-network evolved. Competing objectives are a source to contrary forces in innovation processes (Hoholm 2009). A part of top management became involved while another part was resistant. A new owner imposes a new network that will influence the existing network implicitly or explicitly. We learned that as the networks glided into each other (Chinese production site became the supplier) the actornetwork took another form. At least to some extent, the social situatedness of the outsourcing process changed in characteristics, for example, organizational position, time for development, complexity of products, designation of process owner, make or buy strategy, production systems, customer relations and supplier relations (Moses 2009). The initial idea (the first phase of outsourcing) were mostly in conflict with the new owner's ideas. Hoholm (2009:269) describes that constructing an actor-network around a new idea is an exercise in connecting of actors, networks, resources and ideas in a creative way in order to produce

power effects to pave the way for the innovation and translate different interests into the innovation. Unless the OEM's outsourcing ideas is converged with the new owner's the latter is likely to dominate, which also was illustrated by the case.

Performative output is important to engage in when it comes to service innovation processes. We have showed phases in the process that evolve and interactions and confrontations in the innovation process and the way learning is involved in the process is likely to be decisive to success of service innovations. The studied outsourcing process aimed to decrease costs, which is a vague objective. In the performance this was interpreted dependent on situated performance and further guidelines either from practice or from governance. The learning from inter-organisational interactions / confrontations are one source together with reflections of the own business model and interactions / confrontations among intra-organizational functions.

DISCUSSION

We know little about to what extent logistics service innovation should be formally managed versus allowed to spontaneously emerge or even be informally managed (Flint et al. 2005) and by addressing the nature of service networks the situational character of a innovation implies that a combination of these ways of managing might be appropriate. The piecemeal and interactive process of development is dependent on learning, a social process. Different actors with their own as well as common objectives need to foster and question the development in order for each of them to take advantage of it. From our case, the lack of discussion and reflection hampered foremost the logistics service provider's idea of developing the service offer, which also became an obstacle for the outsourcer. In a logistics and service context not only reflection but projection seems to be of special importance to keep the development innovative. Without supply chain learning the coordination and development is likely to diverge and be less forceful.

A critical evaluation of this service innovation process brings forward the interconnectness of processes and actors (Hoholm 2009). Outsourcing can be seen from an innovation perspective. But, is outsourcing a logistics innovation? Outsourcing can implicate change of logistics services. But outsourcing per se is rarely a logistics service. How shall the concepts of outsourcing, service, and innovation be related?

To the OEM is business model reconstruction an objective (Kuratko and Audretsch 2009). And, consequently outsourcing is the innovation and implies a change of logistics services. Outsourcing is not logistics services but a change of logistics services and thereby an innovation. To the third party logistics firm logistics innovation is an objective (Grawe 2009). Then, the logistics service is related to the outsourcing and the change of logistics services is the innovation (Flint et al. 2005). Under some circumstances, outsourcing services make up an innovation. Service innovation with activities that work in combining firms' service activities are prone to change because of the fluid nature of services.

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