

# Case Study Research in Supply Chains – An Outline and Three Examples

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*Summary:*

*Supply chain management implies that companies cooperate in delivering products and services to customers. As a consequence, related empirical research should collect data from more than one stage of the supply chain. This has rarely been the case so far, as often only one company is approached, implicitly carrying the problem that statements on the supply chain cannot be validated by a view from other participants. Therefore, it is important to select appropriate supply chains and companies for empirical research on supply chain management. One research method that can be applied in such a setting is case study research. This method allows a flexible data collection, which is appropriate for analyzing supply chains and managerial issues therein. While research in supply chain management imposes further difficulties, it also carries the chance to validate collected data by triangulating information obtained at different stages of the supply chain. This paper will outline some basic issues on case study research, and also portray three examples of how such research has been conducted.*

*Keywords:*

*Supply Chain Management, Case Study Research, Research Methodology, Qualitative Research, Validity, Empirical Research*

# 1 Introduction

In the past few years, supply chain management has seen a rise both in practical application and academic interest. The rapid development of supply chain management as a field of research has so far not been matched by related developments in research methodologies. While a full range of research methodologies can be and is applied in supply chain management, the use of case study research is an interesting option. Frequently, the analysis of a supply chain and managerial issues therein are highly unstructured problems which can be dealt with in an exploratory research design using case studies (Yin, 2003). Stuart et al. (2002) suggest that case studies are an appropriate research methodology to map the field of supply chain management, as they allow identification and description of critical variables.

This argument is central to the question of which type of research methodology is appropriate, where e.g. Morgan & Smircich (1980) state: "Qualitative research is an approach rather than a particular set of techniques, and its appropriateness derives from the nature of the social phenomenon to be explored." Meredith (1993; 1998) has argued for this in the field of operations management and outlined how case and field research can be used for related theory building. As supply chain management is a rather young field of research, the need for further conceptual and theory building research is frequently highlighted (e.g. Croom et al., 2000; Müller et al., 2003) as a means to continue to shape the contours of supply chain management (Mouritsen et al., 2003).

Against this background, the aim of the paper is to outline when case study research in supply chain management can be used and how it can be conducted, especially in collecting case related information at several stages of the supply chain. Based on the issues raised, the paper will be presented using the following structure: The first section provides a background on supply chain management and reflects on the need for further empirical research therein and the appropriateness of case study-based research. The second chapter will briefly discuss case study research, and concentrate on a few issues seen as particularly relevant for application in supply chain management. Third, a process of conducting case research in supply chains will be put forward (Stuart et al., 2002), which will be used later on in the case studies. On this basis, the next section illustrates this by presenting three cases where the author was involved (e.g. Seuring, 2001; 2002; Goldbach, 2003; Goldbach et al., 2004; Morana & Seuring, 2003a; 2003b). A conclusion will sum up major findings and provide hints for future research.

## 2 Supply Chain Management

“The supply chain encompasses all activities associated with the flow and transformation of goods from raw materials stage (extraction), through to the end user, as well as the associated information flows. Material and information flow both up and down the supply chain. Supply chain management (SCM) is the integration of these activities through improved supply chain relationships, to achieve a sustainable competitive advantage” (Handfield & Nichols, 1999: 2). This definition is taken as an exemplary one, while several others have been proposed. A number of reviews and systemizations have been provided (e.g. Bechtel & Jayaram, 1997; Cooper et al., 1997; Ganeshan et al., 1998; Croom et al., 2000; 2000; Mentzer et al., 2001; Seuring, 2001a; Otto & Kotzab, 2001; Müller et al., 2003). While these contributions point towards different definitions and conceptualizations, at least two recurring themes can be observed: (1) Supply chains deal with material and information flows, which (2) have to be managed in a cooperative way by all partners involved in the supply chain.

Several authors have pointed toward the problems in even establishing a central content of supply chain management (Mouritsen et al., 2003; Chen & Paulraj, 2004) as well as observed problems practitioners face in aiming at implementing supply chain management (Fawcett & Magnan, 2002). One central issue is identifying which entities are constitutive for a supply chain. It is not trivial to decide which companies form certain supply chains and how far integration has to reach. As Frohlich & Westbrook (2001) argue in their survey-based research, companies to this point have predominantly looked a stage up or down the supply chain. Furthermore, few examples exist where information from different stages, especially more than two stages of the supply chain, have been collected (e.g. Cooper & Slagmulder, 2004; Seuring, 2001; 2002).

Related to this, Stuart et al. (2002: 431) emphasize the need for a “customer focused approach” in management research, where practitioners’ perceptions of research are taken into account. In this regard, they highlight that case studies can be a “powerful, influential, and useful contribution to both management practice and theory development” (Stuart et al., 2002) and have a high validity with practitioners (Voss et al., 2002: 195). Some problems faced in supply chain management can be perceived as complex, unstructured situations, where a mapping of major variables (Stuart et al., 2002) or exploration to uncover areas for research and theory development (Voss et al., 2002) are suitable research strategies. These are typical situations where a case study approach seems appropriate (Yin, 2003; Saunders et al., 2003). Hence, two central questions in related research are:

- How can a suitable supply chain which can serve as a case be identified?
- How can access be gained to the different stages of the supply chain to allow data collection at some or all relevant stages?

### 3 Case Study Research

“A case study is an empirical enquiry that (1) investigates a contemporary phenomenon within its real life context, especially when (2) the boundaries between phenomenon and context are not clearly evident” (Yin, 2003: 13). Case studies are used as a research method if contextual factors are taken into account, but at the same time limit the extent of the analysis (Eisenhardt, 1989; Voss et al., 2002). This allows in-depth insights into emerging fields (Meredith, 1993), yielding a basic comprehension of fuzzy and messy issues (Swamidass, 1991). The strength of the case study method rests on its ability to capture conceptual developments (Meredith et al., 1989; Meredith, 1993), while not immediately proposing broad theories (Weick, 1995; Swamidass, 1991; Wacker, 1998). Therefore, it is particularly appropriate if new fields of research are emerging (Yin 2003). The advantage of the case study approach is its ability to address “Why?” and “How?” questions in the research process (Yin, 2003: 1; Ellram, 1996: 98; Meredith, 1998: 444). Applying a flexible, sometimes even opportunistic research strategy (Yin, 2003) is one of its major strengths, but might also be a major weakness of case study research (Stuart et al., 419). This makes it necessary to briefly look at the related research purpose as well as the research process.

#### 3.1 Research Purpose

Linking this to the research cycle of description, explanation and testing (Meredith, 1993), one can look at what kinds of insights can be gained from case study research. It is evident that case study research investigates a contemporary phenomenon in its real life context (Yin, 2003), so that e.g. existing theories might be taken up to gain a first insight into the phenomenon studied (Swamidass, 1991). Case studies can be used for different purposes. Yin (2003: 3) distinguishes three types of case studies: (1) An exploratory case study is aimed at defining the questions and hypotheses of a subsequent study (not necessarily a case study) or at determining the feasibility of the desired research procedure. (2) A descriptive case study presents a complete description of a phenomenon within its context. (3) An explanatory case study comprises data bearing on cause-effect relationships – explaining how events happened.

Furthermore, Yin (2003: 40-47) suggests case selection based on the following criteria. A single case can serve as a critical example (1) if it forms an extreme or unique case, e.g. if not many cases are available; (2) if it forms a typical or representative case, standing as an example of a wider group of cases; (3) if it is a revelatory case, where the investigator has an opportunity to observe and analyze a phenomenon so far inaccessible to scientific investigation; (4) if it provides a longitudinal case studying two or more points in time; (5) if it stands as a pilot in a multi-case setting. In contrast, multiple cases often use a replication logic, but can also be used to select typical cases within a certain domain (Eisenhardt, 1989).

Furthermore, within a certain case, one or more units of analysis can be studied (Yin, 2003: 40), providing a second replication logic, which can be used to ensure appropriate analytic generalizability of the research conducted (Eisenhardt, 1989).

In relation to this, Handfield & Melynk (1998: 324-325) have outlined how research strategies and theory building activities can be matched. Their list of categories has been modified by Voss et al. (2002: 198), who distinguish four major purposes: exploration, theory building, theory testing, and theory extension/refinement. Case studies can be used for all four purposes, but when the single strategies apply must be carefully evaluated.

### 3.2 Research Process

The research process for case studies is similar to those used for other (empirical) research (Yin, 2003; McCutcheon & Meredith, 1993). Stuart et al. (2002: 420) propose a five-stage research process (see Figure 1) and explain in detail how each step should be carried out when conducting case study research. As several wider and more detailed accounts for conducting case studies have been presented, this is not reproduced here (see e.g. Yin, 2003; Eisenhardt, 1989; Mentzer & Kahn, 1995; Ellram, 1996; Voss et al., 2002).



Figure 1: The Five-Stage Research Process Model (Stuart et al., 2002: 420)

One major reason for the great importance of the research process is that the quality of the research is often flawed by a lack of rigor in the research process (Stuart et al., 420). Hence, research quality issues in case study research are briefly addressed.

### 3.3 Ensuring Quality of Case Study Research

The quality of research designs is ensured by aiming for validity (i.e. is the stated evidence valid?), and reliability (i.e. is the stated evidence correct?) (Mayring, 2002: 140; Yin, 2003: 34). Mayring (2002: 141) emphasizes the specific problems in ensuring objectivity and reliability of qualitative research and measure-related performance. The excellence of qualitative research is addressed especially through procedural reliability and validity (Stuart et al., 2002). This has led to a debate on related quality factors (Mayring, 2002: 144; Maxwell, 1992; Mentzer &

Flint, 1997). In line with other authors, Mayring (2002: 144) proposes six quality factors for qualitative research: (1) process documentation, (2) safeguarding interpretations by arguments, (3) research process structured by rules of conduct, (4) closeness to the study item, (5) communicative validation, (6) triangulation.

For case study research, Yin (2003: 34) outlines how validity of the research can be ensured. He proposes three types of validity: construct validity, internal validity, and external validity. These three types of validity are applied during different stages of the research process, as reliability and validity are ensured by a clearly structured research process. The issues outlined in this section will be taken up in the three cases presented below to illustrate such research.

## **4 Three Examples of Case Research in Supply Chains**

After this brief outline of case study research methodology, special issues will be addressed that have to be taken into account when conducting case study research in supply chain management. Related papers have touched upon this for logistics (e.g. Mentzer & Kahn, 1995; Ellram, 1996) and for operations management (e.g. McCutcheon & Meredith, 1993; Meredith, 1998; Stuart et al., 2002; Voss et al., 2002). While all of these papers carry a reference to logistics or operations management in their title, they mainly describe research procedures that apply to all kinds of management. Furthermore, as Müller et al. (2003) state, few examples exist where data for case study research has been collected at two or more stages of the supply chain. Therefore, it is interesting to take a look at some of the cases published so far and see how data was gathered and evaluated.

In the above section on supply chain management, two specific issues in related case research have been identified which arise from the specific content of supply chain management: the identification of suitable examples, and access to case study companies. In order to provide more detailed insights, the subsequent section will address these two questions using three examples of case study research in supply chains that I took part in. The three cases are sorted according to the number of companies (entities), and data was gathered from the time the case study was conducted. Therefore, the case of Otto is one where only staff from the focal company provided insight, while in the two other cases, data was gathered in various companies or stages of the supply chain. Subsequently, the above outlined five-stage research process (Stuart et al., 2002) will be described for each of the three cases.

## 4.1 Otto – Introduction of Organic Cotton Apparel

Founded in 1949 in Hamburg, Germany, Otto GmbH & Co. is the largest mail order business in the world. While the headquarters are still there, the Otto group presently consists of 86 companies in 21 countries, employing more than 65,000 people worldwide with a turnover of € 19.2 billion in 2002. The products traded by OTTO cover a wide range, including clothing, electronics and household appliances. For more than two decades, Otto has been an environmentally proactive company. This has led to the strategic decision to introduce apparel produced from organic cotton.

1. **Research Question:** The research question was how to organize supply chains to be able to introduce organic cotton apparel (Goldbach, 2003; Goldbach et al., 2004). Organic cotton is not readily available on commodity markets, so in order to be able to provide such products, Otto had to start and operate a “new” supply chain from the cradle of raw material production, i.e. cotton farming. Therefore, the case presents (1) an extreme case, as such it is an example of an environmental product innovation, but also (2) a representative case (Yin, 2003: 42), as Otto encountered the typical problems companies face when entering a new product field. Access to Otto was guaranteed by means of a joint, publicly funded research project. Otto provided the business case, while the research team offered academic advice.
2. **Instrument Development:** In this specific case, but also in most cases, all of the cotton supply chain is operated outside Europe. This issue implied that direct contact to suppliers of Otto in e.g. Turkey or India was not possible. Consequently, the case could only be researched by having access to staff and documents at Otto. As the first mode of access, semi-structured interviews were chosen, as they provide a flexible instrument to get into the field and become familiar with the object studied, while also providing a flexible mode of data gathering (Yin, 2003: 89; Saunders et al., 2003: 246). A second method was taken up later in the research process, as it became evident that a detailed understanding of related product examples was needed. Therefore, document analysis and joint data analysis with staff members of Otto were conducted.
3. **Data Gathering:** For data collection, 12 semi-structured face-to-face interviews with employees of Otto were conducted. They provided initial insights into the historical development of the field. Furthermore, two specific example model products (a T-shirt and a bathrobe) were selected to gather quantitative data on their production at the single stages and the cost incurred for this. Again, data was only accessible through Otto’s staff. The two products analyzed as examples formed two embedded units in the case study research. They are representative of the related product range offered by Otto.

4. **Data Analysis:** Data analysis was carried out by transcribing the interview data and checking interview protocols with the participants. Furthermore, in an ongoing process, the findings were discussed with Otto staff to validate the findings. A second important mode of data analysis was seen in comparing the results of the research to those of other research groups addressing similar questions (see the case comparison in Seuring, 2004), which served as an additional mode of triangulation (Yin, 2003: 97; Saunders et al., 2003: 99).
5. **Dissemination:** The material collected in the case study research was related to a different theoretical basis, allowing different insights to be gained. As cost played a central role, cost management was a first means to achieve this, but as the research advanced, it was revealed that costs are not only about reporting data, but carry implications regarding the organizational settings in which they are used (Goldbach, 2002). Furthermore, related transaction costs of the modes of cooperation and coordination they reflect play an important role (Goldbach et al., 2004). This theory-based analysis was extended by building on principal-agent theory and structuration theory (Goldbach, 2003b). Furthermore, the management of time and complexity represented objectives that were employed to systemize measures taken by Otto (Seuring et al., 2004).

This case provides one of exploration, which was later extended to theory building. At the onset of the project, the factors influencing the design and operation of the supply chain were vaguely assumed. Building on existing theories allowed them to be applied in supply chain settings. Access to the case study material was only available through the focal company.

## **4.2 Steilmann – Supply Chain Target Costing for Polyester Linings**

The company Klaus STEILMANN GmbH & Co. KG was founded in 1958 in Wattenscheid, Germany, in the Ruhr region. Company headquarters are still located there today. The core business of STEILMANN is clothing design and sale, and production is carried out at suppliers around the world. Major customers include Marks & Spencer and C&A. In 2001, the company had a turnover of over € 700 million and employed about 14,500 people, mainly in Rumania, where currently about 12,000 (mostly female) employees work. The company pursues an environmentally proactive strategy, which includes the constant aim of improving product quality and environmental performance.

1. **Research Question:** The research question was how to introduce a new kind of technically and environmentally optimized polyester into apparel products (Seuring, 2001). Polyester is used in a diverse range of products, from bottles, to seat belts, to apparel. This case offers a representative example of new product introduction where existing supply chains have to be overcome (Seur-

ing, 2001). Similar to the Otto case, this formed part of a joint, publicly funded research project.

2. **Instrument Development:** This case was particularly interesting, as it was possible to access three stages of the supply chain. These three stages form the total relevant supply chain: tier-2 supplier, tier-1 supplier, and focal company. The tier-2 supplier was a chemical company polymerizing the polyester and spinning the yarn. The tier-1 supplier was a textile company conducting weaving and finishing of the apparel. Access to the suppliers was provided by Steilmann, which helped establish contact to the suppliers.
3. **Data Gathering:** Data gathering was conducted by means of 19 semi-structured face-to-face interviews. In 14 cases, Steilmann staff was interviewed, while in the other five cases, staff of the companies operating the two preceding stages of the supply chain were questioned. Site visits and document analysis formed further modes of data collection. Data collection was carried out at one point in time, where the development over time was taken into account.
4. **Data Analysis:** In data analysis, the insights gained at the three stages could be validated, and thereby allowed for triangulation of information gathered at the three companies, as well as from further sources, e.g. company websites and secondary material such as related publications. As in the Otto case, interviews were transcribed and checked by the interviewees.
5. **Dissemination:** Target costing provided a conceptual framework to comprehend the data collected. In the analysis, it became evident that the three companies took an approach that can be described as *supply chain target costing* (Seuring, 2002). None of the companies used the term “target costing,” but all of them operated with a clear focus on costs for the final product, which were not to exceed conventional polyester apparel. They even took joint measures to reduce costs, which covered direct costs, administrative processes (activity-based costs) as well as the costs of cooperation (transaction costs) (Seuring, 2001; 2002). As mentioned, access to (all) three stages of the supply chain allowed insight into companies’ actions as well as their interaction. While they operate in a competitive environment and each of them has to compete on cost in their particular market, it was interesting to observe how they implemented joint measures in this particular supply chain. Target costing in supply chains has been established before (Cooper & Slagmulder, 2004), but the theoretical framework was extended and tested in the case study.

The Steilmann case operates in a typical manufacturing setting where three companies operate. But the picture changes again if customers form a further stage of the supply chain.

### 4.3 Ecolog – A Closed-loop Supply Chain for Polyester Apparel

The Ecolog Recycling Network GmbH is a textile recycling network residing in Tettngang on Lake Constance, Germany. The network was founded in 1994 by two German clothing manufacturers for sports wear and outdoor wear: VAUDE and Sympatex Technologie GmbH. Today, it remains a very small company, employing only one person. The Ecolog network has different actors: producers, retailers, consumers, and recycling companies of polyester textiles. The objective of this collaboration is market introduction of apparel manufactured from a homogenous polyester only, which can be recycled. This includes the development and supply of polyester apparel, the collection of post-consumer products by retailers, and the recycling of these products into a granulate that serves as virgin polyester material. This network provides a label for all textiles made entirely of the same homogenous polyester. Since 1994 they have sold about 800,000 labels equaling this number of articles of clothing. Once they are retired from use, these textiles are taken back by Ecolog Recycling GmbH and integrated into a recycling process. Thereby, Ecolog organizes all stages of a closed-loop supply chain (Morana & Seuring, 2003a).

1. **Research Question:** The research question addressed was how a closed-loop supply chain involving customers as one stage of the supply chain operates and why success of the Ecolog network has so far been very limited. The aim of establishing the network was combining environmental improvements (recycling on the same quality level) with economic feasibility. All major technical problems had been solved before the Ecolog network and label were introduced. By operating a closed-loop supply chain, it forms an extreme example of a textile recycling network (Thierry et al., 1995; Guide et al., 2003). This case was selected, as it is one of the very few examples where such an attempt has ever been made.
2. **Instrument Development:** Access to the supply chain was first made by contact to the person working at Ecolog, who acts as a network coordinator. Ecolog provided contact to the companies. Again, semi-structured interviews and document analysis proved to be appropriate options for data collection.
3. **Data Gathering:** A total of 58 interviews were carried out mainly from October 2002 to March 2003 using semi-structured interviews, which were conducted either in person or by telephone. The people interviewed cover four stages of the supply chain, such as producers (four interviews), retailers (23 interviews, seven also related to apparel take-back), consumers (21 interviews), the employee of Ecolog regarding the coordination of the recycling network and collection, as well as nine interviews with related experts. A special issue was identifying customers that purchased such apparel, as the company does not keep a record of its sales. Various e-mail lists were used to post

a search for people owning such apparel and willing to take part in an interview. The different sources, as well as data gathered from literature and other available information on textile recycling created the basis for validating and triangulating single observations.

4. **Data Analysis:** Collecting data from all stages of this particular closed-loop supply chain allowed for triangulation of the information obtained from the single informant. While interviews were transcribed, only those conducted with the Ecolog staff directly were checked by interviewees. Furthermore, the Ecolog employee, acting as the central coordinator, was contacted several times to discuss findings derived from other interviews.
5. **Dissemination:** The manufactured and sold apparel products, such as outdoor jackets or occupational safety/weather wear, are products with a use life of several years. Consequently, one major problem identified in the overall operation of the Ecolog closed-loop supply chain was that products do not return. This applies to both private as well as institutional customers. This might be comprehensible for private consumers, who just forget about the option to return the jacket at the end of its life to the place they bought it. Furthermore, they often donate jackets to charities, which gives them “a good feeling.” Interestingly, the institutional customers (e.g. DaimlerChrysler AG) somehow had the same problem, as the purchasing decision and the end-of-life decision were taken by different staff members. Information about the recycling option was not passed on and/or stored, so these customers also often opted to donate to charities.

The Ecolog case offered interesting insight into the problems of operating an “ideally” designed supply chain. Guide & Van Wassenhove (2003: 3) characterize closed loop supply chains by a set of activities: “product acquisition, reverse logistics, inspection and disposition (contesting of test, sort and grade), reconditioning (which may include remanufacturing) and distribution and selling of the recovered products.” Major aspects are product acquisition and reverse logistics, which are essential for being able to close the loop. As mentioned, in the Ecolog case the technical solution is feasible. Still, the network did not achieve economic success due to organizational or personal failure during product return. This could partly be explained by building on transaction cost analysis, as e.g. the transaction frequency is very low, while the required take-back action is very specific. One measure would have been to introduce an incentive for take back.

The Ecolog case stands as an example where only by inclusion of the customers in the analysis can the picture of the supply chain become complete. Yet, access to this information was the most difficult to get. Furthermore, 21 customers might be seen as too small a number. The evaluation of the interviews conducted clearly provided the stated insight as a uniform explanation.

Ecolog forms a case of theory refinement. In the context of closed-loop supply chains, which serve as the theoretical background, it provides one of the first accounts for data gathering from customers in closed-loop supply chains.

#### 4.4 Comparing the Research Methods in the Three Cases

Table 1 provides an overview of the three case studies and relates the findings presented to the major issues addressed in the section on the case study method. The cases show that data collection can take different forms and has to be customized to the needs of the individual cases. The requirements of each company studied in such a case have to be kept in mind. This might limit access to suppliers and customers, which inevitably has an impact on the data collected in the case study.

Case	Otto	Steilmann	Ecolog
Industry	Textile / Apparel	Textile / Apparel	Textile / Apparel
Access to case	Focal company in joint project	Focal company in joint project, suppliers through focal company	Active search for cases, contact to focal company, search for customers
Case Selection	Extreme / Exemplary case	Exemplary case	Extreme case
Data Gathering in Supply Chain	Focal company	Three (all) stages of the supply chain	Four stages of the supply chain including customers
Method of Data Collection	Interviews, documents	Interviews, documents	Interviews, documents
Validity	Multiple interviews, two embedded examples for detailed analysis	Information from all relevant supply chain partners	Information from all relevant supply chain partners
Research purpose	Exploration and theory building	Theory testing / extension	Theory extension

Table 1: Comparing the Three Case Examples

One issue not addressed in this paper is how to link findings to literature and to enfold them into previously published work (Eisenhardt, 1989). This is of great importance to both the design of the research as well as the dissemination of reaching closure. This issue applies to any kind of research, so it is not specific here and therefore was not addressed.

## 5 Conclusion

This paper discusses why case study research proves to be an interesting option for empirical research in supply chain management. It is not intended to rewrite or reinvent case study research, as numerous, comprehensive accounts of such research already exist. In contrast, the three cases briefly outlined here show examples of how the research process was carried out in such projects.

In section 2, two questions were raised, which will not be discussed against the background of the cases presented.

- How can a suitable supply chain which can serve as a case be identified?

As discussed in literature (e.g. Yin, 2003: 21), case selection often has to be opportunistic. As the example of Ecolog shows, it might be difficult to find suitable examples at all. In this case only a second suitable case study could be identified, which is now research to provide insight in a cross-case analysis. Still, the active search for appropriate cases that allow insight into how supply chain management works across several stages of the supply chain will be very useful.

In general, case studies often emerge from existing contacts a researcher has to industry. This was the case for the Otto and Steilmann examples, as presented in this paper. While this is justifiable, the researcher still needs to assess why these cases are useful and what the main purpose for researching them would be. This way, one central critique of case study research (that it lacks the rigor of other approaches) could be avoided or at least mitigated.

- How can access be gained to the different stages of the supply chain to allow data collection at some or all relevant stages?

A key approach therefore might be starting at a focal company. From this point onwards, suppliers could be identified. In the Steilmann case, focus was provided by the particular product studies, so there were only two suppliers involved and no further selection possible. A different example is provided in the paper of Chivaka (2005, in this volume). Initially identifying focal companies (as we did), he asked them to identify suitable first-tier suppliers. By repeating this at the supplier, he was able to reach a second-tier supplier, which finally allowed him to research three different three-stage supply chains.

As the reach is beyond a single organization, more flexible and opportunistic approaches of getting access to and collecting data from various stages of the supply chain have to be used.

As a final comment, it has to be admitted that the written findings of such research always idealize the research process, but one strength of the case study method is its flexibility (Yin, 2003; Stuart et al., 2002). Rigor, as expressed in valid and reliable research, stems from process documentation. Triangulation of findings by using multiple sources of evidence is a second important measure. Case study research in supply chain management can help to further explore the field, but is also valid for theory building, testing and extension.

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