Lecture Notes in Logistics
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Efficiency and Logistics

Springer

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Preface

Not only is logistics a management function today but a leading discipline in research and science, combining different fields like management, informatics, economics, engineering et al. in evaluating and steering global material, information and finance flows.

As a consequent development logistics research is gaining more and more importance and attention in Germany today which is proved by the fact that the "EffizienzCluster LogistikRuhr" was a winner in the national science leading edge cluster competition run by the German Federal Ministry of Education and Research. Logistics has thus been officially recognized as an important scientific discipline and sphere of innovation beside disciplines as nano-technology, biomedicine or material sciences. Innovations and continuous education and training are crucial for efficient operations of industry and trade in all areas. Efficiency is about the improved ratio of (minimal) input to output. Connecting supply and demand while meeting individual needs and operating economically is the first and foremost target of logistics. Logistics' major task is to produce efficiency with a comprehensive view on social and ecological dimensions with respect to resources consumed.

This first proceedings issue of the EffizienzCluster LogistikRuhr presents a scientific overview about the research program and its first results. Authors from 11 research and training facilities, working in 27 projects with 120 companies in the cluster, submitted papers that were peer-reviewed prior to publication in this book. On behalf of all colleagues in our partner institutions we want to share these first results with researchers in the field worldwide, stimulate the exchange of knowledge across countries and disciplines and promote the ideas of "efficient logistics" to "efficiency by logistics".

August 2012

Uwe Clausen
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Contents

Logistics Research and the Logistics World of 2050

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Abstract. Without doubt the logistics industry as well as logistics research are a central element of worldwide business structures and societal welfare. Therefore increasing interest and funding is directed towards innovative research in logistics – sustaining the broad expectations towards this sector in providing economic cost-effective as well as sustainable transport chains for global value chains. The challenge to provide even more availability with less resources and even less environmental impact will be crucial for industrial nations as well as developing countries – access to markets at reasonable transport prices is a cornerstone for the benefits of globalization. One major research initiative in this area is the EffizienzCluster LogistikRuhr established 2010 in Germany with international network links. This overview connects logistics trends and innovation expectations with the research objectives and structure of this cluster in order to clarify the eminent research agenda in logistics.

Keywords: Logistics trends, logistics research, ExcellenceCluster LogistikRuhr.

1 Introduction

In 2010 the largest logistics research endeavor in Europe to date started in the Ruhr area in Germany with the research initiative EffizienzCluster LogistikRuhr with more than 120 participating research institutions and industry as well as logistics companies [1]. This is a culmination point of different developments during the last two decades: First the increasing *globalization* brought longer and more complex transport and supply chains, especially for Germany as the economy with the highest export value worldwide. Second the market *liberalization* in Europe and Germany in such different areas as telecommunication, surface mail, rail transport and road transport brought an increasing competition as well as capable competitors from small and medium sized companies to the two global players Deutsche Post DHL and DB Schenker in Germany – this sustained the position of the already strong German logistics sector to be a world leader in this industry, supported by excellent ratings as e.g. from the

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World Bank regarding the transport infrastructure and performance in Germany – placed first in 2010 and fourth in 2012 [2].

Interacting with this business practice development also the traditionally strong German *business science* in the fields of production and transport as well as operations research was strengthened; also the interaction of business and science increased in this specific field of logistics and supply chain management, i.e. supported by the two major logistics associations BVL and BME in Germany [3]. Naturally, this development had a stronghold in the Ruhr area as a former industry melting pot, now transformed to a lively service and science area within the by population largest German state of North Rhine-Westphalia [4]. Therefore the EffizienzCluster LogistikRuhr was in a way a given for an innovative research initiative within the German national "Leading Edge Cluster Competition" to secure the leading position of German science and business in important fields for the future (fourteen other clusters addressing science fields such as biomedicine, nanotechnology and information technology). This article describes subsequently the innovations foreseen in logistics until about 2050 and derives from this future perspective the cluster structure and research topics in logistics in order to introduce and connect the following individual research reports from different cluster research projects.

2 Innovation Expectations for Logistics 2050

As shown for example in the new DHL Delivering Tomorrow report, future developments are difficult to anticipate and even more difficult to transfer to operational business research in logistics – though some major developments can be identified e.g. by scenario technique [5].

- Resource shortage and sustainability;
- Urbanization and new importance of urban logistics systems;
- Security concerns and problems within international transport systems;
- Importance of demographic changes and knowledge management concepts;
- Technological innovation as e.g. RFID and GPS implementation as well as the internet of things with new steering mechanisms for logistics systems.

(a) The foreseen resource shortage and *sustainability* requirements will have significant impacts on logistics and supply chains worldwide. For example sharp price increases for oil may be expected as has been happening for other raw materials in the recent past. Therefore sustainable transport systems will have to be developed – e.g. supply chains coping with oil prices up to US$ 1,000 per barrel have to be designed and implemented. This will render some supply chains completely impossible and force others to a complete change of transport modes and distances e.g. in the textile industry.

(b) Supply for the increasing number of mega-cities worldwide as well as the revival of exiting *urban centers* will be an important challenge in the future [6]. Logistics is expected to contribute significantly to this developments e.g. by new city logistics and e-commerce distribution concepts [7] as well as new transportation systems for urban areas (cargo streetcar, cargo bikes, parcel stations or

transport-buddy concepts). This can be expected to be combined with innovative value added services for example in the medical and nursery care service industry – with an important link to demographic changes and increasingly older (and wealthy) populations in most countries. Home delivery and out-patient nursery care at home will be important satisfaction and growth factors in urban areas in the future – logistics research will have to establish cost-efficient systems to fulfill these needs.

(c) *Security* requirements in an increasingly unsecure and disturbed world will be a further major task and innovation expectation towards logistics – in most cases solved by increasing technology implementation such as GPS tracking and tracing. But in other cases also "old-fashioned" solutions may be relevant as e.g. the co-operation with armed forces to counteract piracy threats or terrorist actions. But these traditional concepts will be enhanced by high-speed communication networks – on both sides of this silent "war" against trade routes and transport infrastructure worldwide.

(d) Due to very different local *demographic changes* within a still increasing total world population transport requirements will change and differ significantly in different parts of the world: Whereas in Europe traffic volume will decrease at least in the area of personal transportation, for India the required total logistics staff is expected to rise from 7.3 million in 2011 up to 25 million in 2022 [8]. Therefore logistics systems will have to adapt sharply to such changes and implement rigorous qualification and training schemes as especially in developing countries there are significant gaps as e.g. for dangerous goods transportation [9]. The combination of technology and qualification development of personnel will be a key question for logistics research – as not in all areas like i.e. in the case of a new Scania truck steering concept based on GPS technology will be able to replace personal knowledge [10].

(e) The further integration of telematics and *information systems* in operative logistics processes will bring revolutionary changes described among others by the term "internet of things" as many transport objects will become subjects and take over independent information retrieval, analysis and decision capabilities [11]. This will bring new processes as well as qualification requirements as personnel will be less and less integrated in physical material handling and flow tasks but more and more in supervision, steering and exceptional event management tasks [12].

Many of these trend and innovation developments will be highly interdependent as for example the question of technology innovation and knowledge management addressed last. Therefore the described research cluster approach is highly feasible for the described tasks awaiting logistics research – in this sense the EffizienzCluster LogistikRuhr is expected to serve also as a research process blueprint for other research locations and topics within logistics research in the future.

3 Cluster Research Structure

In connection with the described trends and innovation expectations the German research cluster EffizienzCluster LogistikRuhr has defined seven major topics as

internal research structure, wherein several research projects with specific objectives and institutional setups have been established. The following table shows the cluster research projects and gives an overview about the research content within the cluster.

Table 1. Cluster topics and research projects within the EffizienzCluster LogistikRuhr

Cluster Topic	Research Projects	Description
Changeable Logistics Systems	- smart Reusable Transport Items (smaRTI) - Hub2Move - Stewart-Gough-Platform - Tracing Intelligent Logistics Objects	Establishing flexibility in strategic and operative transport settings e.g. by intelligent flexible objects, containers or hub buildings
Logistics-as-a-Service	- Service Design Studio - Supply Chain Planning - Supply Chain Execution - Supply Chain Design	Service-oriented software and processes in cloud computing environments support efficient solutions for future supply chains
Urban Logistics Systems	- Dynamics in Navigation - eBase4Mobility - ePOD@Home - Homecare Services - Urban Retail Logistics - Urban Business Navigation	Solutions for new mega cities and other urban centers in efficient and sustainable concepts
Transport Systems Management	- Dynamic Consolidating - Efficiency in Logistics Hubs - Integrated Air Cargo Hub (IACH) - Efficient Building Sites - Multimodal Promotion - Organizational Innovation with Good Governance in Logistics Networks - Safe Networks for Logistics	Intelligent telematics and transport management concepts in order to use existing infrastructure mode effectively
Sustainability / Green Logistics	- Green Logistics Certification - Tray Cycling - Logistics for Urban Mining (TraCy) - Resource-efficient Maintenance Logistics - Sustainable Sourcing Excellence	Resource input and emissions reduction concepts for transport systems
Logistics Competence	- eQuaL 2.0 - e-Qualifizierung für effiziente Logistikprozesse - CSR Management in Logistics - Supply Chain School - Scientific Continuing Education in Logistics	Innovative concepts, institutions and networks for logistics qualification as well as competence-measurement and management
Cluster Innovation Management	- Cluster iMATE - Competitiveness Monitor (CoMo)	Active steering / management of cluster potentials

4 Logistics Personnel in 2050

But as any university and research undertaking the EffizienzCluster LogistikRuhr will not only achieve many outcomes in innovation, publications, products, services and work places in the logistics industry – but also many highly qualified persons, contributing to the already well-educated pool of logistics personnel in Germany [13]. This will – combined with the increase of high-qualification jobs in logistics – lead to a reduction of the existing wage gap between e.g. the average wage in the banking sector and logistics; this spread can be quantified today as about 40% on average world-wide [14]. But it well be reduced and therefore provide the logistics sector also with a further competitive advantage – or a reduction of the up to now existing disadvantage of lower wage levels and therefore lower attractiveness for highly qualified personnel.

This leads to an optimistic outlook into the economic and logistics systems future until 2050, based on research and innovation. For Germany and the global economy logistics systems will be a crucial contribution as also argued by the World Bank and supplemented by the Logistics Performance Index studies since 2007 [15]. In order to keep this performance and wealth contribution by logistics, states as well as companies have to invest further: In infrastructure, research and people.

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Integrated Corporate Social Responsibility Management in Logistics Networks (CoReLo)

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Abstract. The project "Integrated Corporate Social Responsibility Management in Logistics Networks" (CoReLo) focuses on smaller and medium-level corporations of logistics service provider industries. The aim of the project is to systematically outline the significance of and interlinkage between a) corporate culture (with corporate values and their embedding in the specific culture of the logistics sector), b) corporate sustainability strategy (with the identification of themes and areas that are especially relevant for a company) and c) systematic stakeholder analysis (in consideration of power, urgency, influence, legitimacy and values and norms of each stakeholder).

Keywords: corporate social responsibility, corporate ethics and culture corporate sustainability, stakeholder analysis, logistics industry.

1 Introduction

In the context of the sustainability debate, logistics, as the connecting link in global value-creation processes, are confronted with the social, ecological and economic demands of corporate social responsibility (CSR) in a particular fashion [1]. On the one hand, logistics processes are increasingly coming to the attention of stakeholders and public criticism on account of their ecological and social repercussions (cf. On the Stakeholder Concept, section 2.3.). On the other hand, the customer oriented logistics industry has to find solutions to the increasing CSR requirements that producing companies are facing, while at the same time price and performance is expected to remain constant.

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The logistics industry is primarily made up of small and medium-level companies and is typically characterised by highly-interdependent international network structures, which are structured and organised to greater and lesser degrees [2]. CSR strategies therefore demand collaborative structures at the interfaces of economic exchange, as well as goal-oriented management of the initiatives and the engagement of individual logistics service providers [3].

To achieve this, integrative strategies of sustainability management [4] shall be combined with corporate ethics and systems of value management [5]. Analyses have shown that successful implementation of sustainable strategies depends on ethical business climates and the corporate culture [6]. For these reasons, strategic activation of CSR programs should take account not only of network integration [7, 8], but also the integration of stakeholders and the enabling of value-oriented management [9].

It is the goal of the project entitled "Integrated Corporate Social Responsibility Management in Logistics Networks" (CoReLo) to foster these requirements in smaller and medium-level corporations of logistics service provider industries, to analyse the conditions for their implementation, and to introduce the first steps towards implementation in participating partner companies.

Accordingly, the project is divided into three main phases: CSR diagnoses, consisting of inventory and effect analyses; the development of CSR strategies and programs; their implementation with especial emphasis on dialogic network instruments and transfer to other companies in the industry.

This article will show the results of the first phase, in particular the inventory analysis.

2 CSR Inventory Analysis

For inventory analysis of existing CSR engagements in companies, three relevant levels were identified. Each research project partner (KWI, UWH and UDE)[1] was entrusted with one of these three levels. This concerns *firstly* corporate culture with corporate values and their embedding in the sector-specific culture of logistics industries (KWI), *secondly* the sustainability-oriented topics of particular relevance or alarm ("HotSpots", UWH), and *thirdly* the corresponding groups and actors concerned by or contained within these thematic areas in the company, or to formulate these thematic areas as requirements (Stakeholder, UDE). The three levels are shown in figure 1:

[1] KWI: Institute for Advanced Study in the Humanities; UWH: Witten/Herdecke University; UDE: University of Duisburg-Essen.

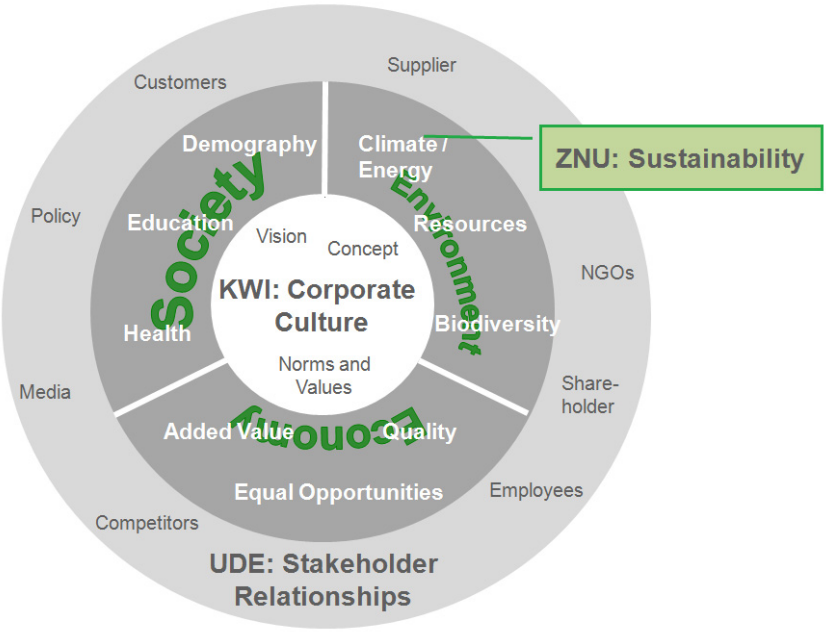

Fig. 1. The three CSR levels (own illustration, on the basis of: ZNU 2011

All three components: corporate culture and values, sustainability themes and stakeholders stand in mutual relation to one another. In figure 1 this relationship is represented in the form of a concentric circle in which the individual elements are arranged.

The first results could be generated on the basis of research, industry analyses, explorative studies, expert discussions and workshops; this includes evidence of the embedding of companies in logistics networks, corporate culture and values, relevant sustainability themes and their stakeholder relationships.

2.1 Corporate Culture and Values - KWI

To get an idea of existing values and cultural patterns in relation to CSR strategies, an indirect path must be taken through norms and practices, existing strategies, and cooperations etc. since as a rule it is difficult to capture values explicitly [10]. One exception is the Ethical Climate Questionnaire (ECQ) developed by Victor and Cullen in 1987 [11]. The questionnaire asks employees for their value-based ethical potential to which they align their activities [12]. Through the ECQ it can be stated, for example, that efficiency criteria play a large role for companies in taking care of existing tasks. On a scale between 1 ("I do not agree at all") and 5 ("I totally agree"), the average value was 3.65. Clearer still was the orientation of company-internal and specific rules and processes; with an average value of 3.86, the strongest agreement was to be found here.

Since, however, only crude evaluations of general value tendencies can be determined with the help of the ECQ, this survey was expanded to include qualitative interviews concerning CSR preferences and measures in order to indirectly comprise the existing CSR culture in companies and industries. For this reason certain overlaps with the other project areas emerged, since stakeholders and sustainability themes were automatically addressed in the discussion of CSR measures. This did not pose any drawback for the project, since through these overlaps the results could partially be validated.

Table 1 shows the scheme of analysis and illuminates how data collected in the interviews were structured according to a research project entitled "Understanding and responding to societal demands on corporate responsibility" (RESPONSE) [13].

Table 1. CSR analysis scheme inventory (own illustration, on the basis of RESPONSE 2006)

Focus of analysis	Examples
CSR requirements	External influences that support, encourage or substantiate CSR engagement
Motivation for CSR	Commitment to CSR and how this is validated, for example by • the "business case", • personal or organisational values, • expectations of the industry
CSR processes	
1. CSR commitment	Commitments and obligations with reference to CSR, for example: • support of high-level management for CSR themes, • the extent to which themes are integrated into strategic corporate decisions and processes
2. CSR structures	Findings concerning the developments of CSR in companies, for example: • whether, where and how CSR is situated • how intensive, for example, the exchange between high-level management and CSR designates is
3. CSR management initiatives	Specific programs, strategies and projects, for example • CSR training programs, employee evaluations according to CSR criteria, • integration of CSR in central business processes • manner and means of communication, like stakeholder dialogue, target agreements, reporting, monitoring, investment, etc.

The results grouped together under the "challenges" rubric clearly show that the short-term, open and informal network type is seen as a challenge. In its loose coupling, it complicates CSR engagement for individual companies, since according to those questioned, sustainable services or products require consistency and reliability. In relation to the motivation of the companies analysed, it can be seen that

those questioned, particularly the executives, are very open-minded to sustainability themes. This simultaneously confirmed the consequent efficiency thinking of the ECQ: if sustainability brings the company forward, corresponding measures are also implemented. In this regard one can speak of a blend of external efficiency pressure and intrinsic value stances among executives. Efficiency thinking therefore also plays an important role, since logistics service providers heavily depend on market developments and customer engagement. On account of these external "restrictions", the engagement of the companies analysed can at present be characterised as (re-) active rather than pro-active.

In the context of the company processes already discerned, a very diverse understanding about what CSR actually means can be seen in the "CSR commitment" category. This problem is also recognised by the companies, which is why the wish for the development of a broad, communal understanding of CSR was clearly articulated. "CSR structures" are supported strongly by executives in the companies analysed. The question is how engagement can be integrated more strongly into the organisation. In spite of this internal structural challenge, "CSR management initiatives" can already be seen in the companies. However, these are at present hardly documented, prioritised or evaluated. In addition, there exists the difficulty of developing a particular communication strategy for CSR measures. Here the companies remain reluctant. The reasons for this lie in the fact that authenticity is very important to the companies analysed. They are uneasy about practicing "green washing" and of communicating something that does not reflect the actual activities and practices in the company.

2.2 Relevant Sustainability Issues - ZNU

If the corporate culture and ethical climate analysed by the KWI represents the breeding ground of CSR, it is the goal of the ZNU to identify those themes and areas (sustainability HotSpots) that are especially relevant for a company in the context of its CSR and sustainability strategy. The ZNU phase model will be introduced first in the following and will serve as a foundation for further steps in the analysis of network perspectives in the project. Building on this, the risk-inventory methods were carried out in relation to the "employee", "customer" and "public" stakeholder groups. The HotSpots identified in relation to these will be presented here summarily. The phase model and the results of the risk inventory method will from here onwards be connected with a "Good Practice Databank", in which implementation examples from practice will be collected. In this way, a more informed perspective on sustainability activities in logistics companies will be made available to companies which aid the evaluation of their own status quo and displays possibilities for action.

2.2.1 The ZNU Phase Model

If sustainability is understood as interpersonal and intrapersonal generational justice [14], then a learning process ideally takes place between the diametrical poles of three dimensions or processes respectively: on the spatial level, a process from local to global thinking (x axis), on the temporal level a development from short to long-term perspectives, and on the processual level a movement from issue management through strategic to transformative management (y axis). These three perspectives are

integrated into a phase model, invented by Geßner [15] (see fig. 2). The horizontal axis describes the degree to which implemented strategies give answers to sustainability questions primarily in one's own business, or whether discovered solutions are transferred to the outside, as well. The vertical axis should point out whether solution measures have the character of a short-term, individual project, or whether they are integrated systematically on the management level.

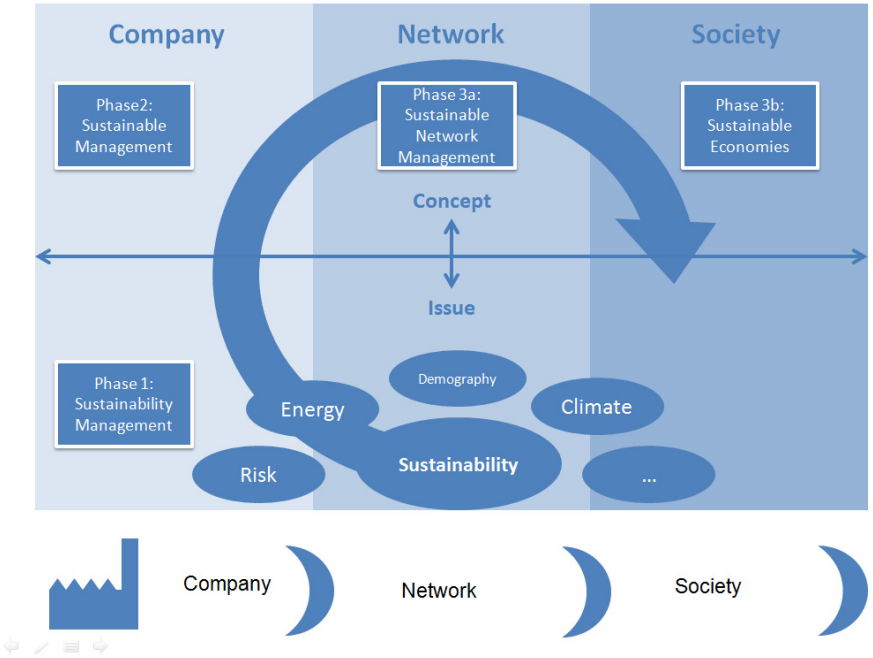

Fig. 2. The phase model by Geßner [15], with an expanded network perspective [16]

In order to make the phase model applicable for logistics, an additional network perspective was integrated. The sustainability issues are now being approached from the environment, over the network to the individual company. In total, four learning phases are passed through: sustainability management, sustainable management, sustainable network management, and sustainable economies (see fig. 2). In this final learning phase, the inside perspective develops towards an outside perspective. The company actively enters into dialogue with multifarious external and internal stakeholder groups. Part of this process is experimentation in the context of theme-related cooperations, for example along the value-creation chain with the goal of developing innovative products, or working on standards or guidelines.

To determine the themes that are most relevant to logistics companies, when they want to integrate sustainability, the risk-inventory method can be applied.

2.2.2 Determination of HotSpots with the Help of the Risk-Inventory Method

The risk-inventory method helps companies to evaluate sustainability action fields on the basis of its business processes with reference to the central stakeholder groups, and to organise relevant themes according to priority. The method also supports the strategic organisation of the CSR engagement. This was first carried out with the stakeholder groups prioritised by the companies, namely employees, customers and the public. For a deeper analysis that covers all risks, a systematic record of other, less-clearly visible stakeholder groups is helpful; the methodology of such a stakeholder analysis is presented in the third section. The risk inventory can then be carried out with these groups correspondingly.

The employee stakeholder group shows that employee bonding and further education is a very relevant sustainability field for logistics companies. This is also reflected in an evaluation of working conditions in the Goods Traffic and Logistics 2011-I of the “Bundesamt für Güterverkehr” which states that "in the goods traffic and logistics industry as a whole, the need for qualified professionals is growing strongly to greater and lesser degrees." [Own translation; 17] Simultaneously, however, fewer and fewer workers move up through demographic transition. Correspondingly, on the one hand logistics strategies must be developed with regard to how employees can be obtained for logistics, and how they can be kept in companies on the other hand. Generally it is true for the companies analysed that the compatibility of family and work must be worked on fundamentally, as care for the elderly and other social benefits have to be right, and healthcare needs to be strengthened.

Another important stakeholder group are the customers, whose main interests as ever are price and quality, even if they increasingly expect the fulfilment of sustainability requirements. For example, ever more customers demand the calculation of a CO_2 footprint. In relation to sustainability themes, the challenge for the companies analysed is posed by prices and delivery times that must remain static while still being able to offer ecologically-optimised services "on top"; for example in the case of traffic relocation from road to rail, it is expected that the service must be at least exactly as beneficial and as quick as the truck variant.

Finally, the public is an important stakeholder group. The relief of the streets or even longer holiday periods (e.g. Sunday transportation ban) are themes which constantly challenge logistics workers. Social engagement is simultaneously expected from them, like for example having an appropriate relationship to living, green and commercial spaces.

2.3 Stakeholders - UDE

As already noted, a systematic stakeholder analysis is necessary for taking into account all relevant stakeholder groups that contain not only public stakeholder groups, but also those who are of indirect relevance for the company, for example.

Accordingly, the UDE has developed a methodological concept that provides a step by step approach and practical guidelines for CSR-managers who desire to generate the relevant information about stakeholders in logistics networks. The figure below gives an overview of the tasks and methods to identify the relevant stakeholders as well as their relevant values and norms.

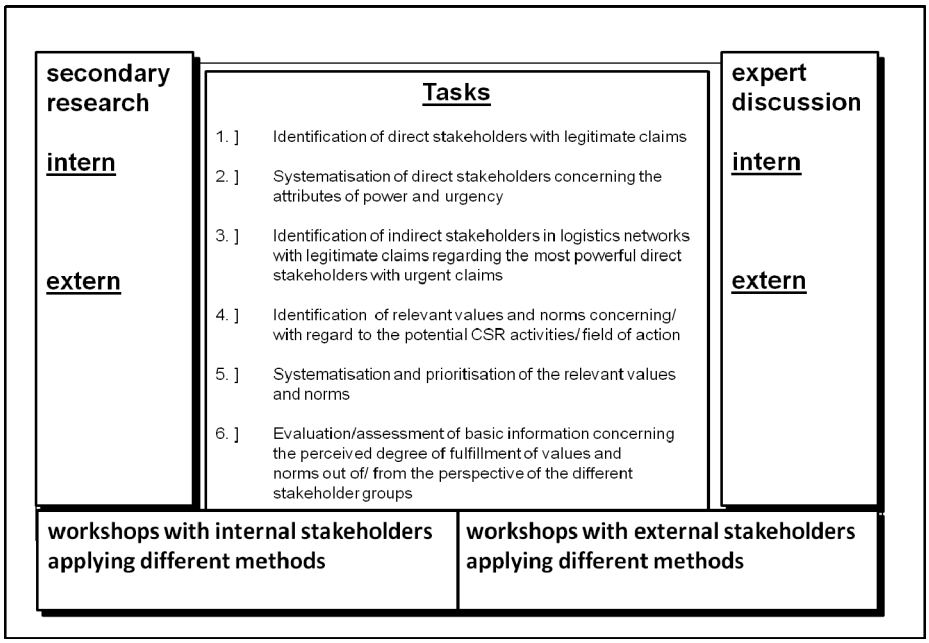

Fig. 3. Methodological concept

Due to restrictions in terms of cost and time it is not possible to consider the whole set of stakeholders. Therefore, the company has to focus on specific target groups of stakeholders. It is widely accepted that companies should only consider stakeholders with legitimate claims. These ones can be a part of contractual agreements, such as work-, cooperation- or purchase contracts [18]. On the other hand, these may arise from morally justified or accepted behavior within a society going beyond compliance with laws and human rights [19]. In the context of CSR legitimate claims encompass only environmental and social aspects. Finally, the relevant CSR-stakeholders are defined as follows: Individuals, communities or organisations with legitimate claims concerning society and environment.

First of all, the relevant CSR-stakeholders who have legitimate social and/ or legitimate ecological claims to the company are identified. Here as well as for the other different tasks of the concept the starting point is secondary research as basis for the further analysis [20]. In the next step, the companies should make use of internal workshops and expert discussions in which different methods have to be applied. For example one supporting tool for the visualisation of the identified relevant CSR-stakeholders is the so-called stakeholder map [21]. It is important to differentiate between the internal and external perspective and within the last furthermore between the economic, the social and ecological system. Internal stakeholders could be e.g. employees, whereby examples for external stakeholders are customers, suppliers and NGOs.

Once the relevant direct CSR-stakeholders have been identified within the logistics network, they must be systematised and prioritised due to limited resources. For these

issues, the approach of Mitchell/ Agle/ Wood (1997) (stakeholder typology) is applied. In addition to legitimacy this idea proposes the usage of the attributes of power and urgency. Power describes a form of social influence and is measured in the ability of stakeholders to enforce their interests and to impact the business success of each organisation [22, 23]. Urgency expresses "the degree to which stakeholder claims call for immediate attention" in order not to deprive the own action of the logistics company [24].

In the following analysis the firm should consider all direct stakeholder groups with powerful claims. Moreover, stakeholder groups which only have urgent claims have to be considered in detail as well because these can influence other powerful groups, and thus have an indirect impact on the company's success [25].

Furthermore, the stakeholders of a company in turn have (other) their own stakeholders. In this paper the stakeholders of the logistics companies (e.g. a logistics service provider) are named as direct, whereby the stakeholders of the direct ones are summarised as indirect. Direct and indirect stakeholders can often form a network of relationships in which they influence each other as well as their claims [26]. Therefore, it is necessary to identify the indirect stakeholders. For the purpose it is sensible to use the approaches of the network analysis meaning the network generator and the snowball procedure [27]. Again, due to restrictions in terms of cost and time it is not possible to consider all indirect stakeholders. That's why the company should focus on indirect stakeholders with legitimate claims regarding the most powerful direct stakeholders with urgent claims.

Moreover, to gain a competitive advantage by implementing CSR-strategies it is necessary to recognise the values and norms of the relevant stakeholders and to operate in a social and environmental manner to them. As stakeholders may include a wide variety of values and norms they have to be identified and their different importance has to be analysed.

Therefore, the values and norms are evaluated in several discussions which can be supported by the critical incident technique. Usually, this technique is practiced in the service sector with critical situations being understood as key events within a process of interaction between service providers and customers [28, 29, 30]. For the systematisation of the different identified values an approach by Wieland is proposed, differentiating the categories of communication, moral, cooperation and performance values [31].

Based on this generated knowledge the logistics company can go a step further and analyse the relevant Sustainability Hot Spots for all detected stakeholder groups as shown in chapter 2.2. [32].

3 Conclusion

The analysis so far gives evidence about the specific corporate culture and values of the participating companies as well as the embedding of them in logistics networks. Moreover, the relevant sustainability themes are determined and the most relevant stakeholder relationships are identified. Furthermore, a detailed conceptual approach to analyse stakeholder relationships is given at hand.

Thus, the goal of the project to foster "Integrated Corporate Social Responsibility Management in Logistics Networks" (CoReLo) can now be taken one step further, as the conditions for the implementation of integrative CSR-programs are known and the participating partner companies can make an informed decision, which strategies they want to implement.

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Good Governance in Global Supply Chains from Eight Perspectives

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Abstract. The development of a reactive branch for "tomorrow´s logistics", which considers itself to become an active leading authority, demands – especially under the conditions of permanent change – an agreement on Good Governance between those responsible for tasks of the supply chain management. Observations of behavior in business relations across small and medium sized companies indicate that the communication between varying actors about sustainable compliance with different demands is impeded by complex structures of the working reality. In a study based on several years of a participatory observation of significant actors at the interface of industry, forwarder and customs administration in the inland and abroad a model was developed that may assist professionals to gain an active "understanding of the other". It shall facilitate the joint agreement on similarities and differences of the respective realms in which the participants of global supply networks work with each other while facing partly opposed interests. Using methods of comparative political research, reasons were discovered as to why cooperation under partial competition conditions is successful or not.

Keywords: behavioral pattern, change, competence, governance, innovation, integration, logistics, other, organization, perspectives, responsibility, subjective reality, supply chain, supply network, understanding.

1 Methods

The development of a foundation for the agreement on rules of a Good Governance in global supply networks is impeded by traditional descriptions of logistics which either label relevant sections as subsidiary or distort the reality of important actors in an idealistic way. An example is the common separation of the object of study in inbound, production and outbound logistics which does not provide an adequate base for the construction of a categorical model from which the quantitative data ascertainment is as dependent as the construction of structural questionnaires for qualitative studies.

A schema of that kind was missing at the outset of this study and therefore had to be worked out first on the basis of a long-term, actively participating observation of the work of persons from various areas of responsibilities. For the interpretation of the resulting material, special care was taken to assure that the versions of participants could be reconstructed from the records.

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The purpose of this study was the exploration of the working environment of actors in global supply networks, focusing the interest to the selection of attitudes and behavioral patterns on the basis of their role in the overall system. [1]

For a thorough interpretation of the material it was of great help to use the example of Todorov´s comparative and interpretative research concept. [2]

2 Situation

For logistics being an important bridging system within economy and society, the involving of value-added concept is certainly a significant advance. Same applies to the methods describing separation of core and support processes for the analysis of potential cost and risk minimization. By observing the work practices of logistics managers in small and medium-sized industrial companies, however, it is noticeable that company strategists easily subject to misinterpretation, when their effort to resolve complexity of global supply network relations has only limited success.

The word "customs (duty)" is quickly added to the category of "administrative infrastructure management" and abandoned as an external factor (in contrast to the seemingly more important core processes) influencing strategies of outsourcing. May it apparently succeed to reduce cost in the outsourcing of customs clearance – the risks of shifting no delegable responsibilities are enormous. This is proved by examples of threat or payment of larger fines for poor export controls [1], back taxes due to improper documentation of preference-proof [2] and sanctions due to the lack of quality certificates [3].

The control of knowledge of rules and regulations on customs and foreign trade is crucial for the success in the design and operational use of global supply networks. It is also applied to the consideration of other processes, such as the use of documentary letters of credit (L/C). Whether in customs clearance or L/C documents presentation, in preparing commercial invoices or monitoring transport time – the logistics manager or shipping expert, being employed by a manufacturing company, holds a key role in "governing" supply chains. This appears from insights into numerous practical examples, verifying that the position of such persons is not limited to operational activities of their company, but has more tactical importance, i.e. their daily decisions have even strategic impact on the cooperation with different actors in changing delivery systems or supply networks.

Given these consequences, it is logical that a team of researchers and traders currently try to find ways to implement standards of good governance in logistics networks. With their analysis of economic practices, they have provided important insights about the potential for innovation.[4] It will be

[1] The authors know of a case in which there is a penalty in the amount of 820,000 € for continued violations of German export regulations for shipments to India – see [3].

[2] In another case, it involved payments of approx. 700,000 € based on documents for exports to Turkey which were refused by a German customs inspector – see [4].

[3] One case concerned penalty notice by the U.S. Customs Authorities on approximately 1.3million U.S. Dollars against the importer of German machinery parts, for which no test reports (“Mill Certificates”) were submitted on the quality of the steel used (Source: Lautenschläger, unpublished report).

[4] See project reports to joint research project OrGoLo – Organizational Innovations with Good Governance in Logistics Networks; http://www.orgolo.wiwi.uni-due.de

explained below, on which areas they see need of good governance and what kind of difficulties are to overcome in the simultaneous intake of different perspectives of supply chain management.

Consequently, some practical implications for organizational innovation will be complemented in three short sections. These will be to begin in which range good governance extends on the cooperation of people and is not limited to the management of affairs. This is followed by explanations on the importance of management of distributed competence in logistics networks, using a special view on joint efforts to increase efficiency. In conclusion, it is stressed that an important part of good governance is to grant trust protection to those who are devoted to supply chain management, if they fill gaps and heal failures of others rather than to emphasize their own powers.

3 Controlling Perspectives – A Guideline for Good Governance

Logistics responsibilities in the "shipper" company of industry and trade is connected with real executive (“governing”) power. Therefore, logisticians of this group might be identified as "governors", although such naming is not common – neither in science of industrial management, nor economic practice. Given the consequences of their decisions in relation to a variety of external supply chain participants, it seems reasonable to describe various – often simultaneously occupied – perspectives. From the coincidence of the perspectives in one person, indications can derive on conditions whether being useful or detrimental for practicing good governance.

The use of terms, such as to govern, governors or good (and poor) governance policies serve below in deliberate understanding of political science. This is due to the perception that the art of organizing varying cooperative relationships between each autonomous company in global supply networks has to overcome similar problems as it has to, when organizing manifold relations between states or nations in a world of autonomous countries.

For the latter, it can be recognized that "the worldwide rising importance of globalization lead to the conclusion that governments in the 21 Century would be in a position with only a higher degree of cooperation (global governance) to solve the global problems resulting from interdependence between nations."[5]. Facing the diversity of actors in supply networks, it also seems sensible to resort to innovation concepts of organizational development to involve the cooperation of people. [6]

3.1 Trade (1st Perspective)

Poor governance already starts with an arbitrary choice of delivery terms. [5] The "trade perspective" is marked by the negotiation of two parties between buyer

[5] Thus, some buyers can easily be mislead to prove a price reduction to their superiors, in which they fail to mention that the figures, being reduced during the negotiation, and noted in the area of "total price" are now based on the EX WORKS delivery condition, which means in consequence that the entire settlement and transportation cost will additionally be charged to their company. This may be more expensive than to accept a higher purchase price at the outset, which – by including the cost of the delivery process – might possibly be made more effective through the seller, on “CIF port of destination” delivery condition, for example.

and seller. The senior decisions are often considered more about pricing (e.g. "Tarn-off") than with the willingness of gaining competency in supply chain management. The resulting process design is then gladly left to logistics experts, who can possibly do nothing else than to select the best of worse alternative solutions.

For example, the logistics manager of a valve manufacturer was forced to operate expensive, unnecessary actions by his clients in Siberia according to the contract, because they persistently refused to participate in the customs clearance. Only after evaluation of depressing experience, the sales expert learned that it is detrimental to his company to agree to the trade term “DDP Siberia” (Delivered Duty Paid) without first ascertaining the active involvement of the customer in the execution of logistics services beyond the Russian border.

3.2 Product (2nd Perspective)

Producers may create good pre-conditions of good governance in logistics networks, if their ambitions to deliver good quality also do include that their goods shall arrive at the users premises in a good condition. This cannot be certified in case of the plant engineer who after the completion of a large-volume apparatus noticed that the truck-loading was not possible without breaking the front of his factory hall, because its door was too small.

This example gives a measure of how important it is to involve logisticians in the "product perspective", as appropriate advice is to be asked early in the design phase. Certain decisions in top management affect like a denial of the use of existing expertise. Reasons may lie in a lack of understanding that – beyond their operational tasks – extra time for advisory efforts must be given to the available logistics experts. Conversely, those, who narrow descriptions of core processes to the effect that valuable supporting processes cannot be actively maintained, must not be surprised by inefficient supply chains.

3.3 Transport (3rd Perspective)

In the "transport perspective", the importance of distinguishing the interests of carriers and forwarding agents is often underestimated. Their price wars with use of "blind" package settlement lead to occlusion of opportunities that may offer an alternative configuration of sample supply chains. This requires however the use of work equipment that facilitate the analysis and reconfiguration of conventional supply chains. Such equipment, however, is often available only for large companies, since it is not affordable for others due to cost.

Small and medium-sized enterprises have modern possibilities of establishing "social networks" in the Internet to work more effectively together on a loose basis in global supply networks. For the formation of communities, however, there is lack of professional organizational framework which could provide more features than the ability for anyone to say anything. A professional collaboration platform, with balanced rules of common handling of sensitive data is a sound technical basis for the practical application of good governance.