

Sven-Erik Jacobsen

**Management of Logistics Service Providers
- A Situational Approach -**

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Foreword by Mervyn Rowlinson

The process of outsourcing in logistics service provision is becoming increasingly important in global business activity. The quest to find best-fit solutions is integral to the hypothesis tested in this research programme. The constant need for firms to find optimum solutions in performance, in quality, in risk reduction and in cost competitiveness calls for attention to the nature of outsourcing activities. The case for the situational approach to logistics service providers is well defined here. The author has made good use of both his academic and industrial background.

This work makes significant contribution to our understanding of the critical areas of the outsourcing process. Furthermore, a systematic methodology is offered as an aid to implementing and assessing the value of the situational approach. The conceptual framework provided in chapter 3 serves as a comprehensive foundation for later analysis and together with the system model of logistics service provider management in chapter 4 a rigorous methodology is developed.

A particular strength of this work lies in the systematic construction of a bridge linking the conceptual world of logistics modelling and the empirical findings derived from the nine case studies analysed in chapter 6. It follows that a worthy PhD thesis has been achieved here, providing a welcome contribution to academic-industry interface.

London, January 2008

Mervyn Rowlinson

Foreword by Horst Wildemann

The elaboration and derivation of theoretically and empirically funded design recommendations for the management of organisations and their value chain is a fundamental challenge of practical managerial business studies. Starting point of the dissertation at hand is the fact that logistics is taking on an increasingly important function in the business models of companies. Furthermore, outsourcing of logistics functions is growing at an accelerated rate because organisations view outsourcing as an effective way to reduce costs, improve customer satisfaction, achieve strategic goals and secure efficiency improvements. Hence, the increasing importance of outstanding logistics is valid for the influences on the cost situation as well as on sales and image of a company. In addition, company-spanning value-added chains, due to high interdependencies and complex planning and design, pose high demands on the management of the participating companies. The management of logistics service providers can therefore be considered an integral part of corporate management. To adopt the position of a holistic, process-oriented perspective on the cooperation life cycle between shipper and logistics service provider, the necessity to formulate differentiated design recommendations dependent on the logistical situation and the integration of various solutions into a complete management model are considered to be a precondition for the successful management of logistics service providers.

The author succeeds in analysing and defining theoretically and empirically founded optimum management approaches of logistics service providers in different logistical situations alongside the complete life cycle of logistics cooperations between outsourcer/ shipper and logistics service provider. The work is characterised by an outstanding theoretical understanding while simultaneously resulting in high practical relevance. The dissertation bases on the author's independent thoughts and considerations that are elaborated from an extensive literature and empirical analysis. The analysis demonstrates the very high theoretical and practical problem understanding in an excellent formal design. The author demonstrates with this work that he is able to work academically and methodol-

ogically in a flawless manner. In addition, he demonstrates that he is capable of applying his practical expertise to his critical and structured ability to judge and generate new practically and academically relevant findings.

The work at hand centres on a dissertation which has been supervised in close and prosperous cooperation between Dr. Mervyn Rowlinson at London Guildhall University and me at the Technical University of Munich. The dissertation can be recommended to academics as well as practitioners who are involved in the challenge of designing optimised supply chain structures and cooperations with logistics service providers.

Munich, January 2008

Horst Wildemann

Content Overview

Foreword by Mervyn Rowlinson	I
Foreword by Horst Wildemann.....	II
Preamble and Acknowledgements.....	IV
Content Overview.....	VI
Table of Content.....	VII
About the Author	XIII
Abstract.....	XIV
List of Figures.....	XV
Glossary.....	XVIII
1 Introduction.....	1
2 Research Methodology	35
3 Conceptual Framework.....	53
4 System Model of the Situational LSP Management Approach	113
5 Design Fields of the Management of LSPs.....	154
6 Empirical Analysis of the Management of LSPs.....	232
7 Derivation of Design Recommendations for the Management of LSPs	305
8 Conclusion and Future Research.....	322
9 References and Bibliography	329
Declaration.....	381
Curriculum Vitae	382

Table of Content

Foreword by Mervyn Rowlinson	I
Foreword by Horst Wildemann.....	II
Preamble and Acknowledgements.....	IV
Content Overview.....	VI
Table of Content.....	VII
About the Author	XIII
Abstract.....	XIV
List of Figures.....	XV
Glossary.....	XVIII
1 Introduction.....	1
1.1 Initial Situation and Problem Formulation	4
1.2 Hypothesis and Research Questions	8
1.3 Research Aims	12
1.4 Literature Review.....	15
1.4.1 Logistics Outsourcing	16
1.4.2 Situational Buyer-Supplier Relationships	20
1.4.3 Life Cycle Management of Logistics Cooperations	26
1.4.4 Summary	28
1.5 Procedure and Method of Resolution	31
2 Research Methodology	35
2.1 Holistic View on the Management of LSPs.....	35
2.2 Research Approach on the Basis of Case Studies.....	37
2.3 Research Approach on the Basis of a Taxonomy and Explanation Buildings	44
2.4 Summary of the Research Methodology – Iterative Triangulation	50
3 Conceptual Framework.....	53
3.1 Management of LSPs as Object of Investigation	54
3.2 Logistics as an Object of Investigation	56
3.2.1 Logistics	56

3.2.2	Logistics Outsourcing	61
3.2.3	Logistics Services.....	64
3.3	Theoretical Approaches to the Design of the Management of LSPs	67
3.3.1	Traditional Approaches.....	68
3.3.1.1	Cost-Calculating Approaches	69
3.3.1.2	Learning Curve Concept	70
3.3.1.3	Assessment of the Traditional Approaches.....	71
3.3.2	Strategic Approaches.....	74
3.3.2.1	The Core Competency Approach.....	74
3.3.2.2	The Market-Based View	76
3.3.2.3	The Resource-Based View.....	79
3.3.2.4	Assessment of the Strategic Approaches	83
3.3.3	Modern Approaches	85
3.3.3.1	Network Approach.....	86
3.3.3.2	Principal Agent Theory.....	86
3.3.3.3	Transaction Cost Theory.....	90
3.3.3.4	Total Cost of Ownership.....	95
3.3.3.5	Assessment of the Modern Approaches.....	97
3.3.4	Choice and Reasoning of the Suitable Theoretical Approach.....	97
3.4	Basic Forms of Cooperation	101
3.4.1	Market or Hierarchy as Alternative Economic Institutions.....	103
3.4.2	Basic Forms of Logistics Cooperations	104
3.5	Guidelines for the Management Approach of LSPs	107
3.5.1	Holistic View of the Management Approach.....	108
3.5.2	Process Orientation	109
3.5.3	Differentiation of the Relation between Shipper and LSP.....	110
3.6	Summary of the Conceptual Framework	110
4	System Model of the Situational LSP Management Approach	113
4.1	Description of the System Model.....	113
4.1.1	Reasoning of the System Model Approach.....	114
4.1.2	System Model on Portfolio Basis.....	115
4.2	Influencing Factors on the Design of the Management Approach.....	117
4.2.1	Logistical Demand Structure.....	118
4.2.1.1	Specificity of Logistics Services.....	119

4.2.1.2	Complexity, Insecurity and Measurability of Logistics Services	121
4.2.1.3	Extent of Potential Damage by Logistics Services	125
4.2.1.4	The Logistical Demand Portfolio.....	126
4.2.2	Logistical Supply Structure	130
4.2.2.1	Market Power of the LSP.....	131
4.2.2.2	The Competencies and the Development Potential of the LSP.....	133
4.2.2.3	The Logistical Supply Portfolio	136
4.3	Creation of a Taxonomy of Logistical Situations	140
4.3.1	Logistical Situation ‘Basic’	144
4.3.2	Logistical Situation ‘High Risk’	146
4.3.3	Logistical Situation ‘Competition’	147
4.3.4	Logistical Situation ‘Partnership’	149
4.3.5	Summary	151
4.4	Summary of the System Model of the Management Approach of LSPs	151
5	Design Fields of the Management of LSPs.....	154
5.1	Information- and Decision Phase	157
5.1.1	Preparation of the Management Decision	157
5.1.1.1	Internal Analysis	158
5.1.1.2	External Analysis	163
5.1.1.3	Assessment and Definition of the Vertical Range of Logistics Strategy.....	168
5.1.1.4	Summary	172
5.1.2	Choice of Suitable LSPs.....	172
5.1.2.1	Direct Awards	175
5.1.2.2	Online Auction.....	176
5.1.2.3	Tendering	177
5.1.2.4	Concept Competitions.....	178
5.1.2.5	Summary	181
5.1.3	Organisational Structures between Shipper and LSP.....	182
5.1.3.1	Selective Interaction/ Interface Model	183
5.1.3.2	Team Models	183
5.1.3.3	Summary	186
5.1.4	Risk Management.....	186

5.1.4.1	Dependency Risks and Risks of Expertise Loss	187
5.1.4.2	Risks of Cost Increases	189
5.1.4.3	Performance Risks and Hazardous Risks.....	190
5.1.4.4	Summary	191
5.2	Agreement Phase.....	191
5.2.1	Contractual Framework of Logistics Cooperations.....	192
5.2.1.1	Design Elements in Logistics Cooperation Contracts.....	192
5.2.1.2	Characteristics of Logistics Cooperation Contracts.....	199
5.2.1.3	Summary	203
5.2.2	Incentive Systems.....	204
5.2.2.1	Passive Approaches.....	205
5.2.2.2	Organisational Approaches	206
5.2.2.3	Active Approaches	207
5.2.2.4	Summary	207
5.3	Processing- and Controlling Phase	208
5.3.1	Information- and Communication Structure	208
5.3.1.1	Information Technology.....	208
5.3.1.2	Summary	215
5.3.2	Controlling	216
5.3.2.1	Controlling of Quality.....	218
5.3.2.2	Controlling of Costs.....	220
5.3.2.3	Controlling of Time	221
5.3.2.4	Auditing	221
5.3.2.5	Benchmarking.....	222
5.3.2.6	Summary	224
5.4	Adjustment Phase.....	225
5.4.1	Triggers of the Adjustment Process	225
5.4.2	Summary	226
5.5	Summary of the Design Fields along the Cooperation Life Cycle.....	227
6	Empirical Analysis of the Management of LSPs.....	232
6.1	Characteristics of the Empirical Analysis.....	233
6.2	Analysis of the Influencing Factors	240
6.2.1	Analysis of the Logistical Demand Structure.....	241
6.2.2	Analysis of the Logistical Supply Structure.....	244

6.2.3	Assortment of the Case Studies to the Taxonomies of Logistical Situations.....	248
6.3	Empirical Analysis of the Characteristics of the Design Fields in the Specific Life Cycle Phases.....	250
6.3.1	Case Study One: Telecommunication Service Provider – ‘Basic’ Logistical Situation	253
6.3.2	Case Study Two: Automotive OEM Light Trucks – ‘Basic’ Logistical Situation	258
6.3.3	Case Study Three: Automotive OEM Light Trucks – ‘Basic’ Logistical Situation	261
6.3.4	Case Study Four: Financial Services Provider – ‘High Risk’ Logistical Situation	267
6.3.5	Case Study Five: Automotive OEM – ‘Competition’ Logistical Situation	271
6.3.6	Case Study Six: Telecommunication Provider – ‘Competition’ Logistical Situation	274
6.3.7	Case Study Seven: Automotive OEM Light Trucks – ‘Partnership’ Logistical Situation.....	283
6.3.8	Case Study Eight: Automotive Supplier – ‘Partnership’ Logistical Situation	288
6.3.9	Case Study Nine: Automotive Supplier – ‘Partnership’ Logistical Situation	294
6.4	Impact Analysis of the Situational Management Approach.....	298
6.5	Summary of the Empirical Analysis	303
7	Derivation of Design Recommendations for the Management of LSPs	305
7.1	Design Recommendations Independent of Logistical Situation	305
7.2	Design Recommendations for ‘Basic’ Logistical Situations	307
7.3	Design Recommendations for ‘High Risk’ Logistical Situations	309
7.4	Design Recommendations for ‘Competition’ Logistical Situations	312
7.5	Design Recommendations for ‘Partnership’ Logistical Situations	314
7.6	Summary of the Design Recommendations.....	317
8	Conclusion and Future Research.....	322
8.1	Answers to the Research Questions and Validation of the Research Hypothesis.....	324
8.2	Summary and Recommendations for Future Research.....	326
9	References and Bibliography	329

Table of Content	XII
<hr/>	
Declaration	381
Curriculum Vitae	382

Abstract

Over the past decade, companies have seen a dramatic increase in the number of options available to them for structuring their supply chain. Still, they put forth restraints against the outsourcing of competition-relevant, comprehensive and complex tasks on logistics service providers. In particular, the possible dependencies on a logistics service provider or the difficult reversibility of a previously made outsourcing decision are unresolved issues. Numerous companies have indeed become more dependent on their suppliers for many activities. As a result, the strategic importance of purchasing logistics functions has become more important. In other words, the management approach and the resulting cooperation approach with the logistics service provider have become important influencing factors in a company's success.

This dissertation identifies and develops a managerial situational approach to the management of logistics service providers into intra- and inter-organisational processes and networks throughout a logistics cooperation life cycle. Areas of research are the management elements between the focal company (the shipper/the outsourcer) and cooperating carriers, freight forwarders and third and fourth-party logistics providers. The feasibility of a differentiated situational approach is analysed and the possibility of a situational management approach dependent on internal and external variables, the logistical demand and the logistical supply situations, respectively is identified. The relevance of the organisational linkage is derived from developments and trends in supply chain management, network management, developments in the logistical demand as well as in the market of logistics services. The logistics service provider management elements are developed along the information- and decision phase, the agreement phase, the processing- and controlling phase as well as the adjustment phase. On the basis of case studies the practical relevance of the resulting procedure and design recommendations is challenged.

1 Introduction

The economic context of industry and trade is characterised by an increasing stress of competition. Rising customer expectations are manifested in the demand for increasing product quality, service levels, and price sensitivity. In addition, product life cycles get shorter and product individualisation is on the increase. This situation is intensified by a rising volatility of markets. An intensifying inter-organisational division of labour relieves the resulting pressure on cost and performance. This leads to a concentration on core competencies by the companies¹ involved in the value-added chain and to a reduction in the respective vertical range of manufacture (Wildemann, 2005a: p. 1).

Such development is also increasingly valid for the required logistics services. The relevance of logistics has been acknowledged since the 1980s. Academic literature agrees that logistics does not only influence the cost situation of organisations but also their competitive positioning. The question arises as to which the vertical range of logistics² is the optimum and in which constellation logistics services should be performed. Main players on the logistics market are the outsourcing company³ and logistics service providers with various offers of logistical solutions. In recent years, a comprehensive market for external logistics services has evolved (Städtler-Schumann, Britsch, 1999) that further adds to the complexity. The question which logistics services should be outsourced is com-

¹ In the context of this work the terms ‘company’, ‘organisation’ and ‘enterprise’ are used synonymously.

² ‘Vertical range of manufacture’ defines the share of the value added that an organisation produces in-house. In literature there is no term defining the vertical range of manufacture in relation to the overall logistical performance. Therefore, for the purpose of this research the term vertical range of logistics is created. The vertical range of logistics is defined as the overall share of logistics services performed in-house in relation to the logistics services performed externally by logistics service providers.

³ In the context of this work the terms ‘outsourcing company’, ‘shipper’, ‘outsourcer’, ‘focal company’ and ‘buyer of logistics services’ are used synonymously.

plemented by the question of who should produce the required logistics service and how this logistics service provider⁴ should be managed.

In addition to the logistics market, the role and the contents of logistics have changed. Innovative concepts and new design approaches are developed to enable logistics to react efficiently, flexibly and to handle complex situations. Furthermore, strategic issues have increased in importance in recent years. Logistics has reached a firm position in the strategic configuration of the company. Since the foundation of logistics as a scientific discipline and since the acknowledgement of logistics as an independent and important working field in practise, the business context has changed. The general trend towards an intensifying and global cooperation provokes an adjustment of logistical processes and an uplift of specific problems. In this context, logistics is a strategic management instrument in companies and networks. Logistics influences company strategies, the intention of which is to gain sustainable competitive advantages and to secure the long-term survivability of a company in the market. To reach these goals, logistics links companies, suppliers and customers. In doing so, logistics is responsible for the holistic⁵ planning, steering, and implementation as well as the control of all company-internal and -external flows of goods and information. In parallel, logistics is very seldom seen as a core competency of companies.

The above trends result in logistics structures that are based on expanding inter-organisational service interdependencies. As a basic rule, these intensified inter-organisational relations reduce the room for manoeuvre concerning the unrestricted flow of goods for the outsourcing companies. Therefore, it can be stated

⁴ In the following, the term 'logistics service provider' will be abbreviated by 'LSP'.

⁵ 'Holistic' is a Greek term meaning 'all', 'entire' or 'total'. Holism is the idea that all the properties of a given system cannot be determined or explained by the sum of its component parts alone but that all of the individual parts have to be analysed as well. In the context of this work 'holistic' relates to the far-reaching definition of logistics used (see also chapter 3.2.1 and chapter 3.5.1).

that company-spanning value-added chains, due to their high interdependencies of the involved companies and their complex planning, design, (risk-) management and controlling⁶, pose high demands on the management approach of the participating companies. Furthermore, it can be noted that the inevitable coordination intensity leads to a significant rise in the company-spanning coordination costs. This results in a necessity for improved planning, design, management, and control of the inter-organisational value-adding activities and the involved market players. In the present study focus lies on the inter-organisational cooperation⁷ of the outsourcer in several industries with diverse types of LSPs (carriers⁸/ freight forwarders⁹/ third-party logistics providers (3PL¹⁰)/ fourth-party logistics providers (4PL¹¹)). In addition, focus lies on the implications of varying logistical situa-

⁶ In section 5.3.2 the use of the term ‘controlling’ in the present study is defined.

⁷ The management of logistics service providers always bases on some type of cooperation form. In this context, the term cooperation comprises each business connexion between an outsourcer and a logistics service provider, be it a one-time order or a long-term relationship. Hence, the terms ‘logistics cooperation’ and ‘management of logistics service providers’ is used synonymously in this work.

⁸ ‘Carriers’ are logistics service providers that offer single logistics services for a large anonymous market. These single services can be basic logistics services or system components of a logistical concept. They own the physical transport means and offer their transport capacities, whereby their aim is a high utilisation of their assets (Weber *et al.*, 2002: p. 29).

⁹ ‘Freight forwarders’ offer linked logistics services for which they arrange, own and/ or external resources. Freight forwarders take over the organisation of national, European-wide or global transport, including additional classical logistics services such as storing or handling. The main difference with carriers is the service portfolio that integrates several single services to a more integrated solution.

¹⁰ A ‘third-party logistics provider’ (3PL) is a firm that provides outsourced or ‘third-party’ logistics services to companies for part or sometimes all of their supply chain management function. Third-party logistics providers typically specialise in services that can be scaled and customised to customer’s needs based on market conditions and the demands and delivery service requirements for their products and materials.

¹¹ A ‘fourth-party logistics provider’ (4PL) is a term coined by consulting firm Accenture: “A 4PL is an integrator that assembles the resources, capabilities, and technology of its own organisation and other organisations to design, build and run comprehensive supply chain

tions on the choice and the definition of the optimum management of LSPs and therefore on the cooperation between shipper and LSP.

1.1 Initial Situation and Problem Formulation

The outsourcing of logistics services, respectively the required management of LSPs is academically situated in the thematic block of the optimisation of the vertical range of manufacture. This discussion about the ‘make-or-buy’ of value-adding steps gains in importance in times of increasing competition or in times, in which structural changes demand efficiency increases. Therefore, business science and practice has been dealing with this topic in cycles for several years. The term ‘make-or-buy’ and the discussion about the vertical range of manufacture traditionally focused on the alternative decision of in-house production or the external supply of material goods (see e.g. Männel, 1968, 1996; Männel, Dumke, 1973). Main decision criteria were the production costs. Current research in outsourcing widens the view and deals with the internal or external coordination of all company activities (see Picot, Maier, 1992: p. 15). Therefore, the external production of logistics services came into focus.

The new institutional economics and the industry economics were the first to provide descriptive models for the basic question concerning the institutional borderlines of a company and include more aspects than differences in the production costs of goods and services. From that, various concepts and methods for the analysis and the design of the management approach of LSPs developed. The today’s spectrum and the quantity of literature concerning the analysis and definition of the vertical range of logistics alone underline the importance and the relevance in academic discussion.

solutions.” 4PL is a refinement on the idea of 3PL. A 4PL uses one or more 3PLs to supply services to customers owning only computer systems and intellectual capital.

The practical relevance as well is beyond controversy. Parallel to the theoretical discussion, the practical focus developed from vertical range of manufacture related questions to questions related to the vertical range of service provision (see e.g. Albach, 1989: p. 10). From the practice-oriented discussion of new industry-economic approaches in the 1990s (Prahalad, Hamel, 1990) the core competency debate developed. This resulted in a business trend towards a concentration on core competencies and the outsourcing of 'border areas' (Gruhler, 1994: p. 161; Schneider, Baur, Hopfmann, 1994: p. 19). Outsourcing decisions were accelerated by the development of the information and technology industry. Alongside the production-related fields and obvious border areas such as catering and security this development reached, parallel to the development of sophisticated LSPs, the logistics area. Despite its important competitive function in companies, logistics is seldom considered a core competency and therefore it is often outsourced to LSPs. In some industries, LSPs manage 50 percent of the overall logistical costs and in most industries this percentage is increasing (Baumgarten, Thoms, 2002: pp. 2 and 15, Wildemann, 2007: p. 133). This results in an increased risk level and thereby increased importance of the management approach of LSPs in practice.

In addition to an increasing percentage of outsourced logistics functions and activities, the spectrum of logistical activities grows. Logistics as a function today takes over more tasks, moves larger flows of goods, and manages bigger amounts of information than ever. Innovative concepts and new design approaches enable logistics to react efficiently, flexibly and to handle complexity in relevant industry trends. Three main streams of trends concerning the demands on logistics confront today's industry (Wildemann, 2002a: p. 7) as demonstrated in Figure 1-1.

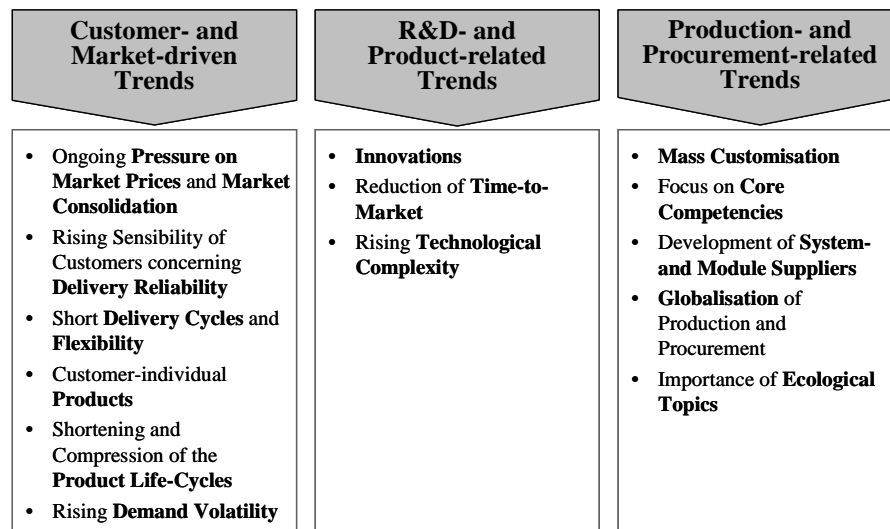


Figure 1-1: Logistics Trends

The interaction of these three trends increases the need for sophisticated logistical solutions and, in combination with the raising degree of outsourced shares of the logistics services, the need for holistic, efficient management approaches for LSPs. First, the market-driven trends enforce the demands on the management of LSPs concerning the reliability and the ability to cope with complexity. Second, R&D related trends influence the management of LSPs mainly in the field of an ongoing change in underlying processes. Third, production- and procurement related trends are mainly driven by globalisation. Globalisation is leading to sales, production and purchasing of products in new areas and hence the need for global logistics and thereby increasing demands on the management of LSPs from rising complexity. On one hand, this may have a big impact on the logistics costs, but, more importantly, this results in global coordination requirements on all actors in a supply chain¹² (see e.g. Bagchi, Virum, 1998: p. 192; Sheffi, 1990: p. 30).

¹² In the context of this work 'supply chain' is defined as a "network of interacting organisations whose goal is to deliver a product or service to an end user by incorporating and coordinating the activities associated with the movement of goods, from raw materials to

Furthermore, logistics has gained in strategic importance and became a significant factor in the success of an organisation. The role of logistics in company success is evident. The focus in the measurement of successful logistics has to be put on logistics costs as well as on logistics performance. Logistics focuses on the flow of materials from supplier to customer. It involves both individual organisations and inter-organisational systems. It also includes several major functional areas within the organisation. The span of logistics is so broad that management of the system and the LSPs require a special approach. The concept of logistics emphasises not the performance of any single element in the system, but a balance of several elements together to achieve a central objective, normally expressed in terms of cost minimisation and service to customers.

All this makes the probability of problems arising in the supply chain highly likely. The logistics trends raise the complexity and practical importance of the management of logistics. Concomitantly, the increasing level of outsourced logistics leads to the enhanced importance of the management approach of LSPs. It is obvious, that the business context concerning the logistical demand and the logistical supply is not the same for every outsourcing company. Hence, the management approach has to be adapted to the context conditions along a cooperation life cycle¹³. That is where the situational¹⁴ management approach of LSPs comes into play.

The above situation in academic research and business management underlines the relevance of a situational management approach of LSPs throughout a coop-

delivery of the final product or service, through effective combinations of resources that help create value” (adapted from Ellram, 1991 and Frayer, Monczka, 1997).

¹³ As discussed in footnote 7 the management of logistics service providers always bases on some type of cooperation form. Hence, ‘cooperation life cycle’ comprises each connexion throughout a defined life cycle between an outsourcer and a LSP.

¹⁴ ‘Situation’ means the way in which something is positioned vis-à-vis its surroundings. Hence, in the context of this work ‘situational’ relates to the management of logistics service providers and its design dependent on the logistical demand and the logistical supply situation in which the shipper and the logistics service provider is situated in.

eration life cycle. For a target-oriented discussion of the management of LSPs, a hypothesis is formulated and guiding research questions are derived. The derivation of the hypothesis and the research questions will be outlined in the following chapter.

1.2 Hypothesis and Research Questions

Bowersox and Closs state: “The channel should be viewed as the logistical playing field” (1996: p. 113) and point out the importance of the design of the vertical range of logistics according to the logistical situation (1996: p. 114). Starting points for this design are primarily the interfaces between the successive activities in the value chain. The foremost question to be answered in the vertical competition strategy therefore is: ‘Should upstream or downstream logistics services be done themselves or should it be made by an external supplier, i.e. LSPs?’ This question of make-or-buy is not a decision between two extremes but a question within a continuum of design alternatives. This question has been already discussed extensively in the literature (see e.g. Hölscher, 1971; Teichmann, 1995: p. 51f. and the there listed literature). Predominantly, this question has been discussed as a strictly alternative decision and the strategic focus of a long-term optimisation of the definition of the vertical range of manufacture and the corresponding integration approach was neglected.

Nevertheless, restrictions in the available capital or in the company expertise profile, lead to the fact that each company having to design its vertical range of manufacture in all the company’s processes. This is particularly important for complex logistical tasks. The vital importance of the optimised design of the vertical range of logistics and the management of LSPs lies within the heavy influence on the strategic position as regards competition and the organisational structure of the respective company. Moreover, the personnel structure and the degree of complexity in the process organisation are affected. In addition, business measurements such as capital lockup, working capital and the complete

capital structure are concerned and are directly affected. Wrong decisions concerning the management approach and the bought services can lead to serious strategic aberrations and dependencies. Bowersox and Closs state: "The channel is the arena within which a free market system performs ownership exchange of products and services. It is the battlefield of business where a firm's ultimate success or failure is determined" (1996: p. 13).

Furthermore, the evolutions of LSPs as well as a changing context of logistics and new demands on logistics are driving an ongoing transformation and differentiation of the buying process for logistics services. Logistics services purchased some years ago were usually quite easy to define and the purchase decision was mainly based on the price of the service. These basic logistics services still constitute the majority offered and bought but they are increasingly bought in bundles (see e.g. van Laarhoven, Berglund, Peters, 2000; Andersson, 1997; Andersson, Norrman, 2002; Sink, Langley, 1997; Berglund, 2000). At the same time, various value adding services and Information Technology (IT) services are increasingly included in the bundles of services, which are handled in third-party logistics relationships (see Andersson, 1997; Andersson, Norrman, 2002; van Laarhoven, Berglund, Peters, 2000, Wildemann, 2007). This development increases the complexity of logistics purchasing. The increasingly more advanced tasks companies are trying to outsource today (e.g. logistics management) are much harder to specify and the companies are less experienced. Van Hoek (2000: p. 14) argues that there is a need for further research and understanding of purchasing initiatives supporting the establishment of supplementary logistics services.

The hypothesis derived from the above situation and the foremost strategic question as well as the way numerous successful organisations react is that a situational management approach of LSPs is advantageous, i.e. it is not always useful to outsource a maximum of activities to the most sophisticated service provider. In addition, it is useful to adapt the management approach to the surrounding logistical situation. Hence, the hypothesis of this work is as follows:

‘The development and application of the situational management approach of LSPs dependent on the logistical situation provides the optimum logistics outsourcing solution from the outsourcer’s point of view.’

The underlying research-guiding primary academic research question for the project at hand, therefore, is as follows:

‘How should the management approach of LSPs be designed from the shipper’s perspective to realise the improvement potential in the elements time, cost, quality and risks dependent on the logistical situation?’

The word ‘how’ expresses the explorative character of this research project. The object of investigation is the management of LSPs in cooperation life cycles. The design aspect expresses the implicit business task (Bleicher, 2004: p. 54). Entrepreneurial activities are not accomplished to end in it. Hence, the design of the management of LSPs in cooperation life cycles follows an objective. This objective is to make the potential of inter-relations to LSPs utilisable for the outsourcing company.

It is important to understand that this thesis does not deal with the make-or-buy decision in itself, i.e. the question whether single logistics service should be produced in-house or externally, but with downstream decisions of the choice of the suitable logistical partner, the choice of the suitable cooperation approach and with the management of the LSP. The make-or-buy decision, as strictly alternative routes, is already discussed extensively in the literature. The existing literature can be used to answer this upstream decision in the outsourcing of logistics services. By answering the above primary research question this dissertation tries to diminish the academic deficit and to assist companies in meeting the requirements of LSP management.

From the primary research question, the following secondary research questions can be derived:

- What are the influencing variables for the choice of a specific management approach of the LSP?

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- What characterises and determines the logistical demand situation of logistics services?
 - What characterises and determines the logistical supply situation of logistics services?
 - Is there a taxonomy that can be derived from the logistical demand and the logistical supply situation? Is it possible to use this taxonomy as a basis for the derivation of norm strategies for the design of the management approach of LSPs?
 - What are the design elements of the management approach of LSPs?
 - Which design elements of the LSP management are relevant in which transactional phase in the cooperation life cycle between outsourcer and shipper?
 - How is LSP management applied in practice? What are successful or less successful procedures?

These secondary research questions function as a guideline for the answering of the primary research question as well as comprehensive guidelines for the procedure of this dissertation and the structure of the empirical basis. Furthermore, the research questions allegorise the research aims.

Overall, the aim of this dissertation is to demonstrate the usefulness and practicality of a situational management approach of logistics services dependent on the logistical situation. The dissertation is conceptual in its nature, but based on empirical material that has been collected and analysed over several years of consulting experience with outsourcers/ shippers and LSPs, in both research projects and variants of action research, mainly interviews with logistics managers and case studies.

1.3 Research Aims

The overall purpose of this dissertation is to contribute to a better knowledge of forms of logistics cooperations¹⁵ between outsourcers/ shippers and LSPs on the part of the firm buying the logistics services (i.e. the shipper) and to elaborate a practical management-oriented concept for the situational management of LSPs in diverse logistical situations. The project at hand will identify optimum management approaches for the cooperation with LSPs. This implies identification and structuring of the possible elements of management approaches of LSPs and the derivation of recommendations for the successful implementation in practice. To the extent to which it is applicable, the impact of the different management styles are analysed and interpreted. This requires the development of previously non-existent recommendations for the design of the management approach of LSPs.

From the above initial situation, the research questions were derived. The solution of these questions implies the fulfilment of concrete research aims in the procedure of this dissertation. Therefore, the project at hand includes the following main research aims:

- **To position the management of LSPs into a strategic, comprehensive and integrated frame of reference, from which design recommendations for the practical management of LSPs throughout a cooperation life cycle can be derived.** A conceptual framework will consolidate the existing characteristics of the management of LSPs, of the demand structure of logistics services and the supply structure of logistics services into a comprehensive, complete and consistent managerial model. All essential theoretical and practical concepts are to be formed into an integrative and

¹⁵ In the context of this work, ‘logistics cooperations’ comprise all activities between shippers/ outsourcers and LSPs whereas ‘logistics partnerships’ refer to one specific close cooperation form of outsourcer-LSP relationships. Hence, ‘logistics partnerships’ are also referred to as ‘logistics alliances’ (see also footnotes 7 and 13).

systematic framework. For the achievement of these objectives, the management of LSPs is to be delimited from other concepts and strategies in the setting of service procurement as well as from supply chain management and it is to be integrated in these concepts and strategies.

- **To investigate the design elements of possible management approaches and management styles of LSPs.** Based on the theoretical frame of reference the design elements of the service provider management will be examined and the conceptual framework will be animated. This examination aims at a detailed analysis of the possible design fields of the management of LSPs and their characteristics dependent on different logistical situations and logistical contexts. This examination centres on a further analysis of relevant literature as well as on the author's personal expertise from conducted management consulting projects. Furthermore, this aim comprises the identification of success factors and best practices within the formulation, implementation and advancement of structural dimensions and activities dependent on the company-specific/outsourcer-specific logistical situation. The formulation and advancement of structural dimensions and activities aims at a sustainable, effective and efficient performance of LSP management activities in theory and practice. In addition, it aims at optimum results concerning cost-, time- and quality-measurements throughout the complete cooperation life cycle which are to be defined in the course of this work. This relates, for example, to the definition of the controlling approach, the definition of the contract elements, the definition of the interfaces between shipper and LSP as well as design elements yet to be identified.
- **To identify and clarify implications and the results of the companies that have outsourced logistics services in diverse logistical situations.** The examination is to be carried out on a qualitative basis as a result of the literature review, the case study research as well as expert interviews. The

influence of the optimised LSP management on the companies' success and competition-relevant factors will be examined.

A definite classification of the above aims into practical and theoretical aims is not possible. Problems and deficits of the management of LSPs exist in business practice and to identify suitable solutions, 'pure science' and 'applied science' have to be carefully evaluated in detail. In business practice and academic research there is a significant lack of procedures and recommendations for the target-oriented, holistic management of LSPs. Hence, many procurement and logistics compartments are not capable of facing the actual and future impact of the management of LSPs. Academic research omits adequate design recommendations. Wildemann states that the management approach of LSPs and the linked recommendations for the design of the management of LSPs needs comprehensive and empirical proven future research (2005a: p. 31). Hence, in this field of research lacking both academic- and business-oriented understanding both characteristics can be defined.

Based on business practice, situations are identified and insights from practical problems and topics are extensively integrated in the research. Therefore, the results of this work can be used as a guide for practitioners also. By the structured evaluation of why and how LSPs are to be managed along the cooperation life cycle, one can find guidance for the formulation, implementation and advancement of integration approaches and the management of LSPs dependent on company-specific logistical situations. A further aim is to reduce fears and provisos against the outsourcing of logistics functions due to the possible increase in dependency on the LSP over a specific period of time and the resulting reduction or even inversion in the initial savings in costs and improvements in performance. In addition, this project also functions as a critical review of existing approaches towards the design of the cooperation with LSPs and the management of LSPs in cooperation life cycles.

sides; it is not a technique, which can be adapted at once. This could explain the rather small number of successful partnerships in goods procurement (van Weele, 2000).

- Ramsay (1996) suggested partnerships are often only appropriate for a minority of a company's purchases and that it is arguable that partnerships are only advisable for very large companies. This is analogue for the purchase of logistics services.
- Lamming (1993: p. 238) and Lamming and Harrison (2001: p. 597) have observed that in practice "the so-called partnership often relies on customer dominance", which means the buyer's dominance or in this case the shipper's dominance. Competitive relationships do not necessarily involve lower trust and adversarial behaviour, according to Parker and Hartley (1997). "Competition may be more effective than cooperation in many buyer-supplier relationships" (Forker, Stannack, 2000: p. 39). It can be argued that companies should pursue both competitive and cooperative strategies simultaneously (Cox, 1995; Lado, Boyd, Hanlon, 1997; Parker and Hartley, 1997). The main point here is that a firm should develop long-term relationships with a relatively small group or only a single key LSP, not with all and only in specific internal and external situations.

Logistics as well as procurement research shows that in the purchasing of goods, as well as in the purchasing of services, companies need a variety of relationships, each providing its different benefits, where no general best type of relationship exists (e.g. Groher, 2002; Young, Wilkinson, 1997; Gadde, Snehota, 2000). Axelsson, Laage-Hellman and Nisson (2002) have stated that much of the purchasing and supply management debate has focused on two opposing purchasing approaches: transaction-oriented and relationship-oriented behaviour. However, the authors emphasised that the two approaches are complementary: a firm can adopt different approaches for different suppliers or, in this case, different

LSPs. In addition, research mostly neglects differences in the management approach throughout a logistics cooperation life cycle.

Furthermore, supply chain management aims at various value categories. From a supply chain perspective Hines *et al.* (2000) describe seven types of value: customer responsiveness, timely supply, high quality goods and services, efficient operating processes, lower prices, impact on profit and highly innovative. The management and the integration approach of LSPs should be tailored to those values that are in line with the overall business value strategy and that correlate with yet to be identified influencing factors. The outcomes of relationships may range from cost savings through to further joint developments in logistical IT solutions. Successful supply chain management requires the effective and efficient management of a portfolio of relationships to suppliers (see Bensaou, 1999) and to service providers. Once the focus (output) is decided, the appropriate relationship can be developed (Cousins, 2002). Obviously not all LSPs are to be dealt with in the same way.

The need for differentiated management LSP strategies requires some sort of classification (Lilliecreutz, Ydreskog, 1999). Therefore, an advanced portfolio model for LSP relations appears to be a useful tool. Effective purchasing, supply management and logistics management requires the selection of strategies that are appropriate to the prevailing circumstances. This underlines the basic proposition that differentiation is needed in managing the management approach of LSPs. Relationships require different mixes of cooperation and competition. Accordingly, the literature emphasises the need for a differentiated situational management approach of LSPs but, to date, fails in providing a holistic, practical approach.

1.4.3 Life Cycle Management of Logistics Cooperations

The management of logistics service providers is to be analysed from a holistic point of view. This leads to the demand for an analysis and design of the logistics

cooperation along the complete cooperational life cycle. The product life cycle has often been used to explain these designs of buyer-supplier relationships, in traditional as well as in service relations (Berenson, 1967: pp. 62; Kuhn, Hellin-grath, 2002: p. 60; Zahn, Herbst, Hertweck, 1999: p. 10). The model centres on the life cycle of a product with six phases and assigns the individual sourcing activities. In the introduction phase, the first analysis of the demand and of the design of the product or the services and incidental services takes part. Flexible suppliers are preferred in the first phase. The growth phase focuses on retention of the achieved quality. Throughout the maturity phase, price-reductions are in focus. During the product elimination, the early information of the supplier is one of the main tasks of the procurement department. Throughout the phases, the cycle shows an increase and then a decrease in the supply volume and the integration intensity (Pampel, 1993: p. 172). The model examines the complete life cycle of a product. For the management of LSPs this model can provide helpful sugges-tions.

The Agency-Client-Life-Cycle lists four separate phases: Pre-relationship, De-velopment, Maintenance and Termination (Halinen, 1996: p. 33). This model focuses on the cooperation with advertising agencies. Measures that aim to pre-vent the need for complex and expensive changes of the agency are developed. This form of cooperation is also applicable to customer-LSP relations. This model demonstrates that parallel to the service (work product) the circumstances of the cooperation (work patterns) as well as the potential of the partners (organ-isation factors) are important. In addition, the model shows that the influencing factors change over time.

In Just-in-Time supplier relations, Franzier, Spekman and O'Neal developed a transaction-cost based stage-concept. The Interest-Stage can be compared to an analysis- and planning phase. In the Initiation-Rejection-Stage, decisions on the form of the cooperation are made. The Implementation Stage serves to execute the cooperation. The Review-Stage concentrates on the review and the identifica-tion of required changes in the cooperation (Frazier, Spekman, O'Neal: 1988: pp.

56). The focus of this concept lies on the identification and the implementation of the most efficient buyer-supplier form of relationship. Thereby, only the relationship in the individual phases is described. In the format of a guideline for all types of inter-company cooperations, Staudt *et al.* distinguish the phases 'Initial Phase', 'Seeking for Partners', 'Constitution', 'Management' and 'Finalisation' (Staudt, Toberg, Linné, Bock, Thielemann, 1992: pp. 25). Pampel developed his phase model analogue along that of Männel. He separates the phases 'Seeking for Cooperation Potentials', 'Development', 'Maturing' and 'Decomposition of the Cooperation'. The basis of his analogy is the common character of useful potentials of an asset as well as of cooperation with a logistics supplier (Pampel, 1993: p. 171).

Wildemann refers to the transaction cost theory, the main phases of which are: the 'information phase', 'agreement phase' and the 'processing phase' and represent a market transaction from a procurement perspective (Wildemann, 2001b: p. 435). In the information phase, the search for potential market partners is carried out. An exact specification of the exchanged service is put down. In the agreement phase, the prices and conditions are negotiated and agreed upon. Throughout the processing phase, the agreed services are delivered. In the frame of this thesis, this model functions as a basis for further discussion of the management approach of LSPs in cooperation life cycles.

1.4.4 Summary

In the preceding literature review, literature relevant to 'logistics outsourcing', 'situational buyer-supplier relationships' and 'life cycle management of logistics cooperations' was assessed with reference to the contribution to the definition and the design of the management approach of LSPs. This literature review of the analysis and design approaches of buyer-supplier or respectively outsourcer-LSP relationships connected with logistics outsourcing further demonstrates the general academic as well as business interest and relevance. The general business

interest was already assessed in the preceding sections. Further business relevance will become obvious in the analysis of the case studies. Nonetheless, the literature also reveals that a consideration of ‘a situational approach towards LSP management’ requires analysis of many fragmented characters.

Secondary Research Questions \ Approaches in Literature	Logistics Outsourcing	Situational Buyer-Supplier Relationship	Life-Cycle Management
Structuring of the Influencing Factors on LSP Management	◐	◐	◐
Definition of an Applicable Taxonomy of Logistical Cooperations	◐	◐	◐
Structuring of the LSP Management Elements	◐	◐	●
Systemisation of the Logistics Cooperation Life Cycle	◐	○	◐
Empirical Impact Analysis of different LSP Management Approaches	●	◐	◐

not discussed ○ discussed to a limited extent ◐ discussed ●

Figure 1-2: Sorting of the Approaches in Literature to the Secondary Research Questions

Figure 1-2 shows an overview of the thematic blocks assessed throughout the literature review and an assessment of their contribution in answering the secondary research questions that function as a working guideline for this work:

- Structuring of the influencing factors on the management of LSPs:** Single influencing factors can be identified, for example, the choice of the procedure concerning logistics outsourcing. Nevertheless, no complete list of influencing factors could be identified. Hence, the relevant influencing factors are not developed in a sufficient way and they are not linked with the design alternatives of the cooperation.

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- **Definition of an applicable taxonomy of logistics cooperations:** Due to the fact that there is no coherent description of the influencing factors on the choice and the design of the management approach of LSPs, no satisfactory and applicable taxonomy can be identified. There is no sufficient attempt to sort the influencing factors in the derivation of types of logistical shipper-LSP cooperation forms. This would be the major preliminary work necessary to elaborate management approaches that integrate contextual factors, such as the logistical demand and the logistical supply situation, in combination with strategic trends. Hence, no closed approach to the design of the management of LSPs dependent on relevant influencing factors could be identified throughout the literature review.
 - **Structuring of the management elements of LSPs:** The design fields and acting options are linked incoherently. None of the discussed approaches describes a situational management approach of LSPs throughout a life cycle of logistics cooperations in a sufficient manner. The existing interdependencies have not been fully considered. Thus, there are deficits concerning a holistic procedure. There are approaches in designing the cooperation between purchaser, customer of logistics services, and LSP but there is a significant lack concerning a closed solution and design approach.
 - **Systemisation of the logistics cooperation life cycle:** As discussed above, life cycles of cooperations are discussed either from a transactional phase's point of view or from a buyer-supplier point of view. Research concerning life cycle management of logistics cooperations between shippers and LSPs needs to be intensified to answer the research questions at hand.
 - **Empirical impact analysis of different LSPs management approaches:** As a result of the insufficient academic structuring of the influencing factors on the management approach and the missing taxonomy, no holistic

structured empirical research and, hence, no empirical impact analysis, has been conducted to date. Current research focuses on descriptive analyses, such as motive research and analysis of the economic advantage provided. Rarely, recommendations of practical use are derived. Up-to-date academic and business research shows a gap in this context.

In conclusion, existing approaches cannot be directly transferred to the management of LSPs. Therefore, the project at hand attempts to close this gap and to develop a closed, holistic approach to manage different types of relationships between shippers and LSPs in the context of diverse logistical situations. The aim is to close this gap from an academic point of view as well as from the practical point of view so that practitioners can use the dissertation as a guideline in designing their day-to-day management of LSPs.

1.5 Procedure and Method of Resolution

The aim of this dissertation is to elaborate a practical management-oriented concept for the situational management of LSPs in diverse logistical situations. The basic assumption and defined hypothesis is that a situational management approach increases the fitting accuracy in all phases of a logistics cooperation life cycle and thereby increases the efficiency and the effectiveness of the management approach. In the following Figure 1-3, the overall structure and procedure of this dissertation is outlined. The academic research is based on the subsequent sources and is structured as follows:

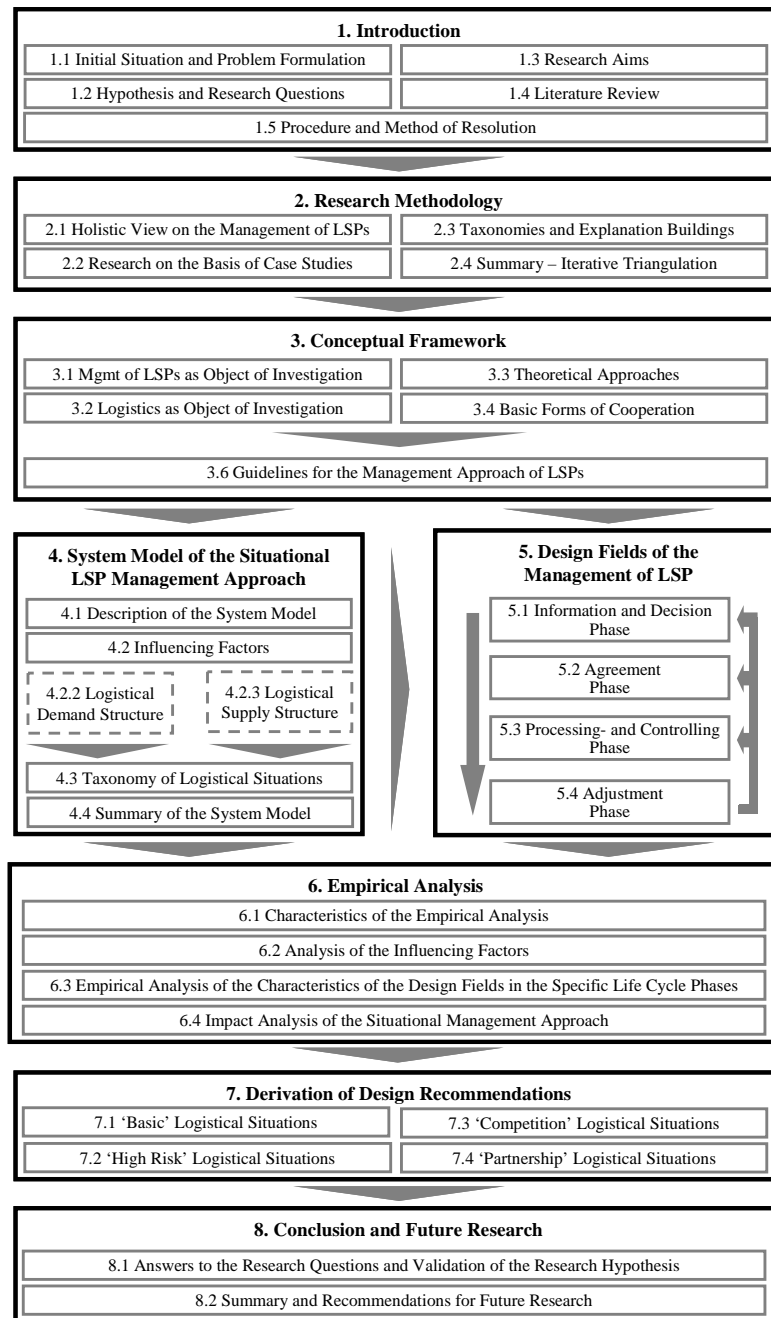


Figure 1-3: Structure of the Dissertation

First, structured as well as open interviews with experts and practitioners help to gain more insight in the field of the management of LSPs. The researcher uses existing contacts from management consulting projects and management seminars hosted by the Transfer-Centrum Management Consulting GmbH & Co. KG (TCW) as well as the Chair of Corporate Management, Logistics and Production at the Technical University of Munich. The researcher is a frequent speaker at these seminars on topics such as corporate logistics, manufacturing, stock management, outsourcing and cost reduction programs. The in-depth interviews are used in the beginning of the procedure as well as throughout the detailing process of the case study elaboration and analysis.

Second, historical and current literature as well as academic research are analysed and put down in a comprehensive literature review. On the basis of insights from the literature review the conceptual framework will be spanned. The fields of interest, logistics, logistics outsourcing, LSPs, the purchasing of logistics services, life cycle management and the context in supply chain management are outlined. The existing concepts for the definition of the vertical range of logistics and the derivation of the management approach of LSPs are established and tested in relation to their ability to contribute to the solution of the research questions and the fulfilment of the research aims. To conclude, guidelines for the analysis of concepts and the definition of suitable management approaches are deduced.

Third, the influencing factors on the choice and design of the management approach of LSPs are analysed. The influencing factors are outlined from the logistical demand of the outsourcing company and the logistical supply provided from the logistics market in which the outsourcer is embedded today and in future. To give specific recommendations for the management of LSPs, a typology of logistical needs and situations is required. In the framework of this typology, similar or related logistical needs are combined such that the optimum LSP profile can be found. Logistical needs are clustered and individual demand profiles are derived. Then, profiles of service providers are developed that are matched with the logis-

tical profiles. These factors are combined to a logistical demand/ supply portfolio from which normative recommendations for the design of the management approaches are derived. The differentiated management approaches are linked to norm strategies. These norm strategies are outlined in brief.

Fourth, the design fields are identified and developed from current academic and business research as well as from the author's personnel management consulting experience. The design fields are formed in their possible characteristics along the life cycle of the logistics cooperation. Possible characteristics dependent on the type of logistics cooperation are discussed.

Fifth, the researcher analyses nine case studies, in which the developed hypotheses are tested. The relevance of the case studies is reviewed, pre-checked and pre-tested by academics and business partners. The analytical process is reviewed in detail in chapter 6. The causal analysis allows complex measurement topics to relate to one another and to evaluate them. The case studies, derived from the consulting experience and activities of the researcher, are analysed and are used for the approval of the guidelines and suggestions towards formation and configuration of logistics outsourcing relationships.

Sixth, the empirical analysis of the management approach of LSPs based on case studies allows the derivation of situational design recommendations. They are based on the identification of success factors in the outlined case studies as well as on the impact analysis of the situational management approach in the selected case studies. The design recommendations are configured for the identified types of management approaches of LSPs throughout the life cycle of logistics cooperations. Finally, answers to the research questions are given, the research hypothesis is validated as well as recommendations for future research are identified and outlined.