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Supply Management

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**ROLE OF CAPABILITIES IN PURCHASING AND SUPPLY MANAGEMENT
PERFORMANCE**

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ABSTRACT

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The objective of this thesis was to study the role of capabilities in purchasing and supply management. For the pre-understanding of the research topic, purchasing and supply management development and the multidimensional, unstructured and complex nature of purchasing and supply management performance was studied in literature review. In addition, a capability-based purchasing and supply management performance framework were researched and structured for the empirical research. Due to the unstructured nature of the research topic, the empirical research is three-pronged in this study including three different research methods: the Delphi method, semi-structured interview, and case research. As a result, the purchasing and supply management capability assessment tool was structured to measure current level of capabilities and impact of capabilities on purchasing and supply management performance. The final results indicate that capabilities are enablers of purchasing and supply management performance, and therefore critical to purchasing and supply performance.

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Tämän työn tarkoitus oli tutkia hankintaosaamisen roolia hankintatoimen suorituskyvyssä. Työn taustaksi tutkittiin hankintatoimen muuttunutta roolia yrityksessä sekä hankintatoimen suorituskyvyn moniulotteisuutta sekä siihen liittyviä kriittisiä tekijöitä. Lisäksi työn empiirisen tutkimuksen taustalle määritettiin kirjallisuuskatsauksessa osaamiseen perustuva hankintatoimen suorituskyvyn viitekehys. Empiirinen tutkimus käsitti kolme vaihetta joiden jokaisen aikana hankintaosaamisen roolia hankintatoimen suorituskyvyssä tarkennettiin. Tutkimusmenetelminä käytettiin Delphi-menetelmää, haastattelututkimusta sekä case-tutkimusta tutkimusaiheen monitahoisuuden ja kompleksisuuden vuoksi. Lopputuloksena rakentui hankintaosaamisen arviointityökalu, jonka avulla voidaan määrittää hankintaosaamisen nykytaso (kypsyys) ja hankintaosaamisen vaikutus (tärkeys) hankintatoimen suorituskykyyn. Työn lopputulos perustelee hankintaosaamisen tärkeää roolia hankintatoimen suorituskyvyn muodostajana ja mahdollistajana.

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TABLE OF CONTENTS

1 INTRODUCTION.....	11
1.1 Research Scope and Limitations	12
1.2 Research Questions	14
1.3 The Outline of the Study	16
1.4 Research Framework and Key Concepts	18
1.4.1 Resource Based-view (RBV)	19
1.4.2 Resource Dependency Theory (RDT).....	19
1.4.3 Transaction Cost Economics (TCE).....	20
1.4.4 Purchasing and Supply Management (PSM)	20
1.4.5 Resource, Capability, and Competence.....	21
1.4.6 Performance	22
1.4.7 Supply Chain Management (SCM)	23
2 THE CHANGING FACE OF PURCHASING AND SUPPLY MANAGEMENT	24
2.1 Strategic Rise of PSM.....	24
2.2 The Evolutionary Development of PSM	25
2.3 PSM Maturity	29
2.4 Trends in PSM	34
3 PURCHASING AND SUPPLY MANAGEMENT PERFORMANCE: A CAPABILITY-BASED VIEW	37
3.1 Conceptual Problems of PSM Performance	37
3.2 PSM Performance Framework: The Key Dimensions.....	40
3.3 PSM Performance Framework: The Critical Factors.....	44
3.3.1 Organizational and Strategy Context	45
3.3.2 Cost and Price	45
3.3.3 Value Creation and Customer Perspective.....	46
3.3.4 Innovation and New Product Development.....	47

3.3.5 Benchmarking	47
3.3.6 Resources and capabilities	47
3.3.7 Suppliers Management	48
3.3.8 Quality and Time	49
3.3.9 Communication and Information sharing	49
3.3.10 Risk management	50
3.3.11 Planning and Controlling	50
3.4 PSM Performance Framework and Capabilities	51
4 RESEARCH METHODOLOGY	54
4.1 Research Design	54
4.1.1 The Delphi Method	56
4.1.2 Semi-structured Interview	57
4.1.3 Case Research	58
4.1.4 Description of the Delphi-panel Experts	59
4.1.5 Description of the Interviewees	61
4.1.6 Selection and Description of the Case Company	61
4.2 Data Collection	62
4.2.1 Stage 1: The Delphi Method Data Collection	62
4.2.2 Stage 2: Interviews Data Collection	64
4.2.3 Stage 3: Case Research Data Collection	64
4.3 Data Analysis	65
4.4 Validity and Reliability of the Study	65
5 EMPIRICAL STUDY	67
5.1 Stage 1: Results from the Delphi Method	68
5.2 Stage 2: Results from the Interviews	71
5.2.1 PSM Performance Components	72
5.2.2 PSM Performance Tools, Methods, and Best Practices	74
5.2.3 Critical Issues and Factors of PSM performance	76
5.2.4 Problems in PSM Performance Conception	79

5.2.5 Suggestions for PSM performance Improvement	82
5.3 Synthesis of Theoretical and Empirical Research Findings: Incorporating PSM Capabilities into PSM Performance.....	84
5.4 Stage 3: Results from the Case Research.....	90
5.4.1 PSM Capabilities Maturity.....	90
5.4.2 PSM Capabilities Importance - Impact on PSM Performance....	93
5.4.3 Managerial Implications for PSM performance Improvement	96
6 CONCLUSIONS.....	98
6.1 The Main Results of the Study.....	98
6.2 Limitations of the Study and Suggestions for Future Research	101
REFERENCES.....	103

APPENDICES

APPENDIX 1: Extensive research results from the Delphi Method.

APPENDIX 2: Extensive research results from the case research.

APPENDIX 3: Gap analysis results from the case research.

LIST OF FIGURES

Figure 1. The outline of the thesis.	17
Figure 2. The theoretical framework of the thesis.....	18
Figure 3. The competencies hierarchy (adapted from Javidan 1998, p. 62)..	21
Figure 4. The changing face of PSM.	26
Figure 5. Strategic stages of the development of a purchasing function (adapted from Reck and Long, 1988, p. 4)	31
Figure 6. Purchasing development model (adapted from van Weele, 2002, p. 110; van Weele et al., 1998, p.).....	32
Figure 7. The maturity wheel diagram (adapted from Axelsson et al., 2006, p. 203)	34
Figure 8. The strategic alignment model (adapted and modified from Cousins et al., 2008, p. 112).....	36
Figure 9. The Balanced Scorecard links performance measures (adapted from Kaplan and Norton, 1992, p. 72).....	40
Figure 10. Definitions of purchasing performance dimensions (adapted from Cousins et al., 2008, p. 149).....	41
Figure 11. Categories of performance measurement (adapted from Cousins et al., 2008, p. 153).....	42
Figure 12. Key areas of purchasing performance measurement (van Weele, 2002, p. 259).	43
Figure 13. Capabilities as enablers of PSM performance.....	53
Figure 14. Research process model (Stuart et al., 2002, p. 420)	55
Figure 15. Research process.	56
Figure 16. Research process steps in empirical research stage 1.	63
Figure 17. Description of the responds by respond group.....	65
Figure 18. Empirical research process.	67
Figure 19. Gap research results.	69
Figure 20. The synthesis of theoretical and empirical research findings.	84

Figure 21. Current level of capabilities presented within different respond group scores.....	91
Figure 22. The impact of capabilities on PSM performance within different respond group scores.....	94
Figure 23. Top 10 the most important capabilities influencing PSM performance.	97
Figure 24. Summary of the empirical research.....	100

LIST OF TABLES

Table 1. How management may look at purchasing (adapted from van Weele, 1984, p. 17; van Weele, 2002, p. 256).....	38
Table 2. A systematic framework to understand PSM performance.....	44
Table 3. Summary of the Delphi panel experts.....	60
Table 4. Summary of the interviewees.	61
Table 5. The findings from the expert panels (The Delphi method).....	70
Table 6. Identified gap categories.....	71
Table 7. PSM performance factors – summary of the interviews.....	76
Table 8. Pre-results from the synthesis.	85
Table 9. Final results from the synthesis.	87
Table 10. PSM Capability Assessment Tool.....	89
Table 11. Current level of capabilities in the case company including different respond group scores.....	90
Table 12. Top 10 governed PSM capabilities in the case company.	92
Table 13. Impact of PSM capabilities on PSM performance in the case company.....	93
Table 14. Top 10 PSM capabilities affecting PSM performance.....	95

ABBREVIATIONS

BI	Business Intelligence
ERP	Enterprise Resource Planning
MRP	Material Requirements Planning
PSM	Purchasing and Supply Management
RBV	Resource-based View
RFQ	Request for Quotation
RDT	Resource Dependency Theory
SCM	Supply Chain Management
SRM	Supplier Relationship Management
TCE	Transaction Cost Economics
TCO	Total Cost of Ownership
TQM	Total Quality Management

1 INTRODUCTION

Business environment has changed dramatically during the last two decades: it has become global, dynamic, and more competitive. This transformation has had an effect on companies' actions and reshaped performance aspects. While companies try to survive and succeed in a volatile and competitive business environment, companies need to cut time-to-market of their new products and services, and most importantly, to be cost-effective (Gjendem 2010; Green 2010). Excelling in these two main themes of competitiveness at the same time is not a simple task for a company. Thus companies have adopted a new approach where single companies cannot solely maintain their competitive edge. In a modern world competitiveness is created throughout the entire supply chain (Hilmola et al., 2005). Furthermore, attainable benefits from the traditional supply chains are neither enough nor create competitive advantage for companies in these days. In modern markets, companies need to think supply chain outcomes (Melnyk et al., 2010) and responsiveness (Beamon, 1999; Gunasekaran et al., 2001; Green, 2010).

Generally speaking, PSM has gone through different evolutionary and maturity phases. According to Hopkins (2011), supply management has evolved from just-in-time ideology (the 1980s) to outsourcing (the 1990s) and finally moved over to eBusiness because of the development of the Internet (the 2000s). However, research or practice sectors have not suggested or highlighted any particular or critical PSM phenomena of the 21st century. As purchasing and supply management (PSM) has evolved from administrative function to a whole strategic function, different methods and techniques have been favored in different eras. Nevertheless, some methods or techniques have been more or less fads. This research speaks out the next big issue in PSM: capabilities and resources, and how to get the most out of them.

Purchasing and supply management, such as any other business functions, is always open for new technologies, but technology in current business world is not the major issue anymore. That is true especially in performance improvement. Investments to technology and processes will no longer lead to more efficient supply chain. Instead, more essential factor in purchasing and supply management is found to be human resources and intellectual assets (Carr and Smeltzer 2000; Green 2010; Kayakutlu and Büyüközkan, 2010).

Human resources, people, and their ability to produce results, in other words individual capability, are found essential for purchasing and supply management performance improvement. According to Chan and Chin (2007), one of the success factors of supply chain management is the better utilization of limited resources in critical areas and the provision of adequate resources to support sourcing functions. This indicates that people and their capabilities have become a significant factor in PSM, PSM performance, and eventually in business performance. One indicator for this particular issue emerged recently in the Supply Management journal that reported significant increase in the need for procurement professionals during the year 2011 (Leech, 2011, p. 7). According to CIPS CEO David Noble, the increased interest of searching for the cheapest possible solution is explained through increasing need of cost reductions as companies have begun to review their business strategies in order to reduce costs (Leech, 2011, p. 7). As a result companies have realized the need for purchasing people, skills, knowledge, and understanding of the true value of purchasing.

1.1 Research Scope and Limitations

PSM has evolved during time which has shaped the conceptions of PSM even more and therefore PSM performance as well. Moreover, companies' perceptions of PSM vary depending on the company's business and industry,

purchasing function strategic development (Reck and Long, 1988), and the maturity phases (van Weele and Rozemeijer, 1998). The history, evolution, development, and trends of PSM are researched rather well, but the researches are seldom associated with performance. In reference to Saunders (1997), a major problem in purchasing and supply matters in literature and business practice is the lack of agreement on:

1. the range of activities to be encompassed by the subject; and
2. the appropriate terms to be used to describe the domain.

The conception of PSM has remained fragmented and unstructured which obviously has an effect on PSM performance conceptions. In addition, supply chain management competitiveness and performance have been widely studied in the literature. Das and Narasimhan (2000) define supply chain competence to construct from three different competencies: *purchasing competence*, *production competence*, and *logistics/marketing competence*. From these three distinct competencies production competence and logistics/marketing competence have been the main research topics and more studied (Vickery et al., 1993; Avlonitis and Gounaris, 1997) whereas purchasing competence has been the less studied competence (Das and Narasimhan, 2000).

Capabilities and skills have known to relate to performance but research and practice have heavily highlighted whole other issues than purchasing and supply related capabilities (Das and Narasimhan, 2000). Therefore purchasing and supply management research needs new perspective to capabilities and skills to adopt a framework that fits into a current turbulent business environment. However, a systematic approach or framework to capabilities and their interrelationship to performance is lacking.

This study is limited to explore purchasing and supply management performance and capabilities impact on it. This study includes purchasing and supply management measurement research but the research focus is related more to capabilities measurement than performance measurement. However, purchasing and supply performance measurement criteria are discussed in this study to emphasize the role of capabilities in purchasing and supply management performance. This study does not include the research of purchasing and supply management performance influence on overall business performance. This study is limited to focus on purchasing and supply management performance issues.

1.2 Research Questions

The focus of this thesis is in the role of capabilities in purchasing and supply management performance. In this research capabilities are seen as enablers of PSM performance. As the research gap in this particular research area as recognized noteworthy, the main argument in this study is that the capabilities related to PSM are enablers of PSM performance. It is argued that PSM capabilities provide an instrument for understanding PSM performance. The argument is formulated into the following main research question:

What is the role of capabilities in purchasing and supply management performance?

This thesis comprises three complementary research stages with individual research objectives. Therefore, the main research question is divided into three sub-questions. Before it is possible to study the role of purchasing and supply management capabilities in purchasing and supply management performance, it is necessary to define first PSM performance. PSM performance is found to be unstructured and multi-dimensional term, whereby

PSM lacks a prevalent definition. According to Carter et al. (2005) PSM performance measurement varies widely in both research and practice as performance includes several factors that have an effect on purchasing and supply performance. These factors are, for example, supply chain performance (Das and Narasimhan, 2000, p. 20), the quality issues (Janda and Seshadri, 2001, p. 209), and supply risk (Kraljic, 1983; Harland et al., 2003). These are just a couple of example factors that are involved in performance measurement. What usually lack from the performance concept is the objectivity. From wider perspective of supply chain performance evaluation, performance is more closely linked to business objectives such as business growth, profitability, market share, and customer satisfaction (Carter et al., 2000). That is the case also in PSM performance studies as performance is understood not only from the one company point of view but from the entire chain point of view (Carter et al., 2000). This makes PSM performance conceptualization more complex. Therefore, a general and systematic conceptualization of PSM performance is needed in this study to frame. Therefore the first sub-question is:

Q1: What factors are included in purchasing and supply management performance?

A firm can create and maintain its competitive advantage in many different ways. According to Carr and Smeltzer (2000, p. 41) competitive advantage can be attained by buying new equipment, developing new methods of using existing equipment, employing new technologies, retraining employees, or hiring new employees with different skills. This mindset is looking back to the enablers of business: human resources. According to Saunders (1997, p. 170), the trend is that PSM is forced to search for higher levels of capabilities, skills, and knowledge as the standards of PSM performance have risen. However, the concept of PSM capability is not widely studied and is not very well defined at present. Several attempts to define supply management

capability though exist in literature. One finding is that those definitions tend to be suggested lists of different skills. Moreover, capabilities are often seen as indirect capabilities or different business skills that affect the company's purchasing function (e.g. Chan and Chin 2007; Trent and Monczka 1998). Therefore this research focuses on competitiveness and capabilities. Moreover, PSM capabilities are examined to create an appropriate mindset before answering the main research question is possible. Therefore the second sub-question is:

Q2: What kind of capabilities is needed in purchasing and supply management performance?

In this thesis it is argued that PSM capabilities are enablers of PSM performance. However, PSM capabilities are not easy to recognize which context they appear in performance. To find out that, PSM capabilities are examined through PSM performance factors, tools, practices, and skills. Therefore, the third sub-question is:

Q3: How the contribution of PSM capabilities to PSM performance can be established?

To answer these questions, literature research and three-phased empirical research were executed. By this, the study objective is to enhance knowledge and understanding of the research topic.

1.3 The Outline of the Study

The outline of the study is based on six chapters (see figure 1). Chapter 1 presents the introduction, research questions, and background of the study (research gap), theory framework and relating key concepts. Chapter 2

presents an introduction to the phenomenon: purchasing and supply management (PSM) and its changing face. This chapter is based on the literature review and examination of existing theories. Chapter 3 presents the sense making of PSM performance. At first, performance theories are discussed. After that, a systematic framework to understand PSM performance is examined and synthesized. Chapter 4 presents research methodology and research design, data collection and research methods used in analysis.

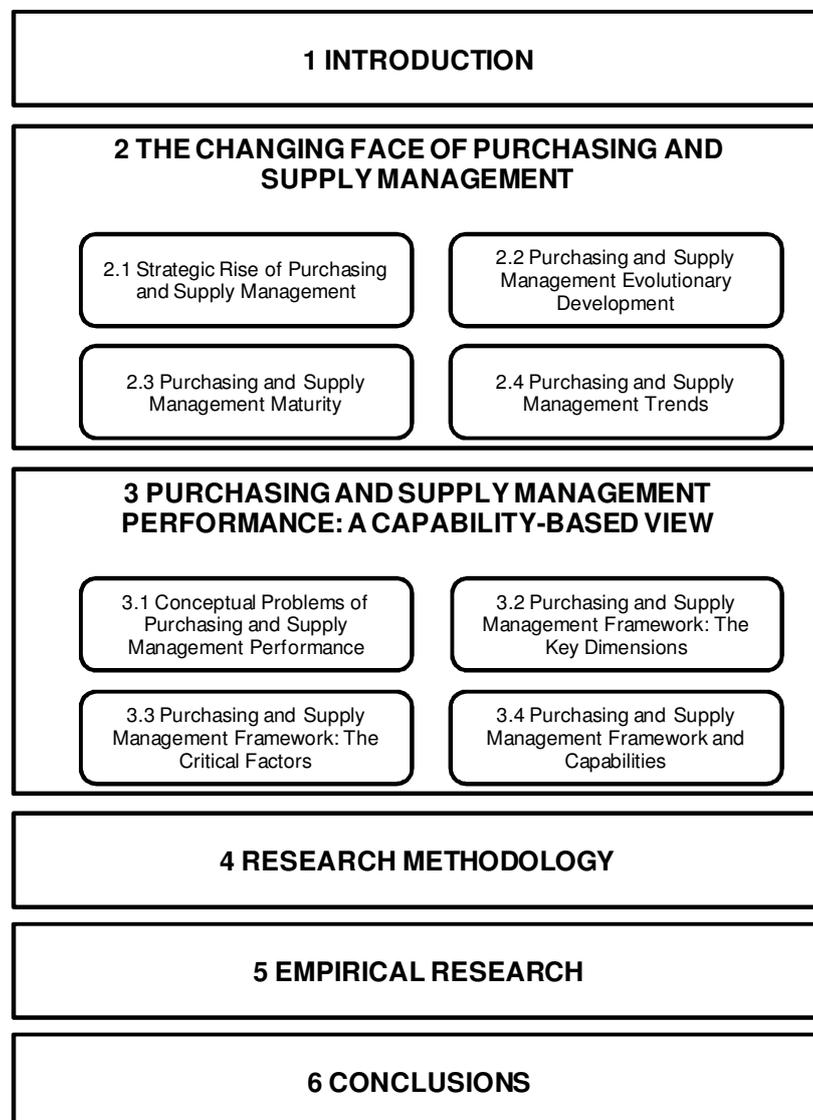


Figure 1. The outline of the thesis.

Chapter 5 describes empirical study, analysis and empirical findings of the study. Chapter 5 is divided into three research stages: in first stage PSM capabilities are examined, in the second stage PSM performance and its critical factors, and finally on the third stage capabilities role in PSM performance is established. Chapter 5 also includes summary of the research findings, synthesis of literature and research findings, discussion, and implications. Chapter 6 includes conclusions where this research is summarized. In addition, topics for future research are presented.

1.4 Research Framework and Key Concepts

The research framework of the thesis (figure 2) is based on the three main theories: Resource-based View (RBV), Resource Dependency Theory (RDT), and Transaction Cost Economics (TCE).

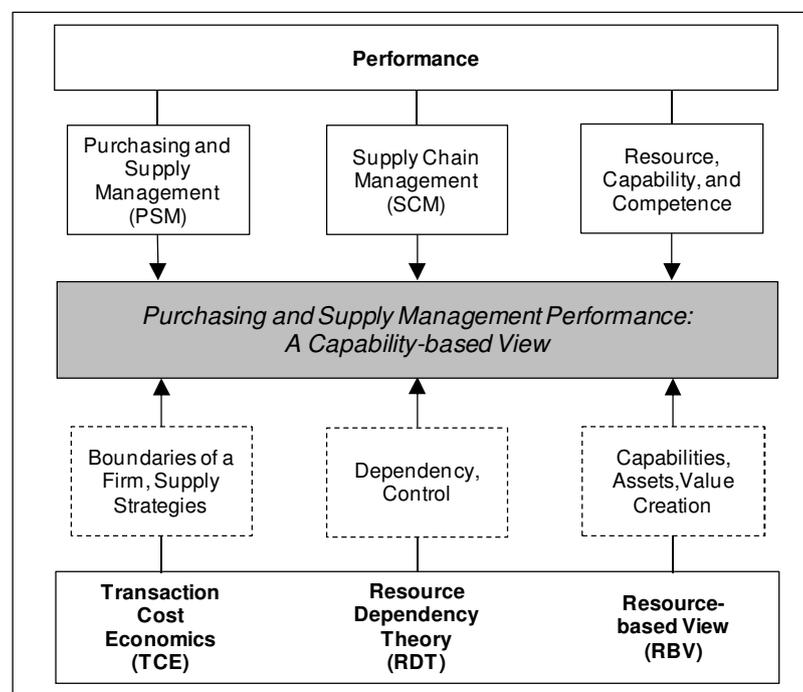


Figure 2. The theoretical framework of the thesis.

The key concepts of this thesis are: 'Purchasing and Supply Management (PSM)', 'Resource, capability, and competence,' 'Performance,' and 'Supply Chain Management (SCM).' These key concepts are introduced next briefly for pre-understanding.

1.4.1 Resource Based-view (RBV)

The resource-based view of the organization is based on organization's resources and capabilities that create a sustainable competitive advantage (Wernerfelt, 1984; Rumelt, 1987). The resources that are source for competitive advantage must be scarce, valuable, reasonably durable, and difficult to imitate (Barney, 1991). In purchasing and supply management research a lot of emphasis is placed on external factors such as suppliers and external resources.

1.4.2 Resource Dependency Theory (RDT)

Within the context of this study, a resource dependency perspective (Pfeffer and Salancik, 1978; Paulraj and Chen, 2007) must be adopted as the resource-based view represents a substantial shift away from market-based theory (Barney, 1991; Barney et al., 2001). Rather than focusing on the external factors, the resource-based view explains firms' competitive advantage through their control over bundles of unique internal resources and capabilities (Amit and Schoemaker, 1993; Barney, 1991; Mahoney and Pandian, 1992; Prahalad and Hamel, 1990; Wernerfelt, 1984) Within RDT organizations seek to avoid dependencies and external control and try to retain their autonomy for independent action (Pfeffer and Salancik, 1978). Moreover, it cannot be distinguished that any type of resource that can create competitive advantage is a critical asset and usually scarce (Cox, 1997).

1.4.3 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) is widely used in studies on governance structures in firms (Coase, 1937; Williamson, 1975). TCE defines make-or-buy decisions through business costs (i.e. transaction costs), which means for a company whether to make products or services by itself or supply them from markets through different hybrid models, i.e. partnerships (Williams, 1975; Arnold, 2000; Williamson, 2008). According to Blomqvist et al. (2002), TCE could understand to explain partnerships. Moreover, Cox (1996) argues that all discussion on the proper form of the relationship between the firm and its external environment must include the theory of TCE, because it provides a framework to explain business relationships determining the internal and external boundaries of the firm. According to Williamson (2008) partnership models (or hybrid models) are found to be appropriate means of procurement especially in supply chains.

1.4.4 Purchasing and Supply Management (PSM)

Traditionally purchasing is encompassed to process of buying (van Weele, 2002, p. 14; Axelsson et al., 2005, p. 3), functional group as well as functional activity (Monczka et al., 2005, p. 7; Trent, 2007, p. 4), and purchasing decisions are routine in nature (Carr and Smeltzer, 1999, p. 44). In this description, purchasing is regarded as operational activity (van Weele, 2002, p. 14). However, at the strategic level purchasing activities are integrative (Carr and Smeltzer, 1999, p. 44). This turns the concept towards supply management. Supply management is, instead, a broader concept than purchasing (van Weele, 2002, p. 17; Monczka et al., 2005, p. 8). Supply management is a cross-functional and proactive process (Monczka et al., 2005, p. 8; Trent, 2007, p. 5), and according Monczka et al. (2005, p. 8) supply management and strategic sourcing are interchangeable concepts.

According to Carr and Smeltzer (1997, p. 201) strategic purchasing “*is the process of planning, evaluating, and controlling strategies and operating purchasing decisions for directing all activities of the purchasing functions toward opportunities consistent with the firm’s capabilities to achieve its long-term goals.*” Both purchasing and supply perspectives are included in this study, so that operational and strategic nature of purchasing are covered.

1.4.5 Resource, Capability, and Competence

Most commonly the term ‘capability’ is related to the resource-based view of the firm (RBV) (Wernerfelt, 1984; Barney, 1991). From the resource-based view, capability explains why firms are different and how firms can achieve competitive advantage by utilizing their internal resources. Capability can also be understood as organizational level competence and the firm’s ability to fulfill its assignments by deploying its resources (Amit and Schoemaker, 1993; Makadok, 2001; Axelsson et al., 2005; Javidan, 1998). As can be seen from Figure 3, capability is based on resources but is seen as more sophisticated and deployed issue.

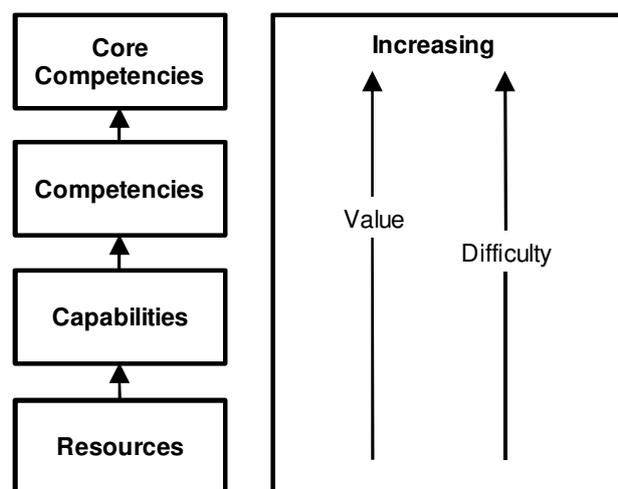


Figure 3. The competencies hierarchy (adapted from Javidan 1998, p. 62).

According to Makadok (2001), capability is a special type of deployment of resource or resources in particular function. Moreover, organizational capabilities are a result of recombining and integrating knowledge within the organization's resources (Das and Narasimhan, 2000). According to Javidan (1998), the difference between capability and competence can also be explained via sophistication and deployment: competence is a result from capabilities that are cross-functionally integrated and coordinated.

Capability can also be understood via skills and knowledge; capability is a description of skills, practices, and internal activities, which can be measured (Das and Narasimhan, 2000; Carr and Smeltzer, 2000). According to Carr and Smeltzer (2000), skills and knowledge are referred to each other through the ability to gain knowledge or practice. When trying to figure out the organizational skills, a broad view has to be taken because an overall skill set that fits every firm simply does not exist (Giunipero, 2000; Giunipero and Percy, 2000). Finding the right skill set requires careful environment analysis and knowledge of what specific skills are needed to create capability and to preserve the firm's competitive advantage. What makes this important is the pressure from the business environment and markets: in a volatile business environment capabilities change. Referring to the research of Teece et al. (1997), a company may have dynamic capabilities, which can be defined as ability to adapt, integrate, build, and reconfigure internal and external competences. Dynamic capabilities bring new forms of competitive advantage to respond the demands of dynamic business environment.

1.4.6 Performance

Performance in this study is conceptualized separately but for the framework, the perception of performance is based on terms *efficiency* and *effectiveness* that are common terms in performance studies in the operations management

research (Child, 1977; Tersine, 1985). These two dimensions have been the dimensions of purchasing performance, and widely adopted terms in purchasing and supply management performance research (van Weele, 1984; van Weele, 2002; Trent, 2007; Cousins et al., 2008, p. 149-152).

1.4.7 Supply Chain Management (SCM)

According to Thomas and Griffin (1996), the concept of supply chain management (SCM) represents the most advanced state in the evolutionary development of purchasing, procurement and other supply chain activities. Moreover, purchasing and supply management's link to supply chain has increased and on the other hand SCM focus has moved more to purchasing and supply functions (Presutti, 2003). According to Gadde and Håkansson (2001) define supply network to consist of actors, resources and activities, and emphasizes the relationships and dependencies between the actors.

2 THE CHANGING FACE OF PURCHASING AND SUPPLY MANAGEMENT

Purchasing and supply management (PSM) together with supply chain management (SCM) have got especially much attention in research. It seems PSM has become one of the biggest and the most discussed issues in business management when talking about company's performance and potential savings. In this chapter PSM evolution and development, trends, and maturity models are clarified to point out the development of PSM and its increased influence on performance. Moreover, this chapter clarifies the complexity and difficulty how to understand company's PSM because of different perspectives and different maturity stages of PSM. This chapter therefore lays the foundation for further coming PSM performance discussion.

2.1 Strategic Rise of PSM

During the last two decades purchasing function has got an increasing interest in research. Several studies have showed the importance of purchasing and supply management: the effect of PSM on organization's business strategy is discussed at least conceptually ever since its strategic nature was noticed (Monczka and Trent, 1991; Watts and Hahn, 1993; Cooper and Ellram, 1993; Ellram and Carr, 1994; Narasimhan and Das, 2001; Brown and Cousins, 2004). However, since PSM was found to be increasingly involved in the firm's strategic planning, PSM has got an increasing interest in research from different perspectives (Ferguson et al., 1996; Carter and Narasimhan, 1996; Carr and Pearson, 1999; Carter et al., 2000; Chen et al., 2004; Cousins et al., 2006; Paulraj et al., 2006). According to Ellram and Carr (1994, p. 10) strategic purchasing can be studied from

three distinct perspectives (three distinct types of 'purchasing strategy') which emphasize general research standpoint:

- Specific strategies employed by the purchasing function
- Purchasing's role in supporting the strategies of other functions and those of the firm as a whole
- The utilization of purchasing as a strategic function of the firm

In this study purchasing and supply management is considered to cover all the three perspectives but the research orientation is heavily concentrated on the third perspective. This view is based on the research findings from the 1990s when PSM was found to integrate more evidently to corporate strategy, and its contribution to the firm's success was recognized (Pearson and Gritzmacher, 1990; Freeman and Cavinato, 1990; Monczka and Trent, 1991; Ellram and Pearson, 1993; Ferguson et al., 1996).

2.2 The Evolutionary Development of PSM

According to Hopkins (2011), PSM has evolved from just-in-time ideology (the 1980s) to outsourcing (the 1990s) and finally moved over to eBusiness (the 2000s) because of the development of the Internet. Figure 4 presents the summation of the evolutionary development of PSM and its pivotal phenomena and affairs during the shift from an administrative function to a strategic function.

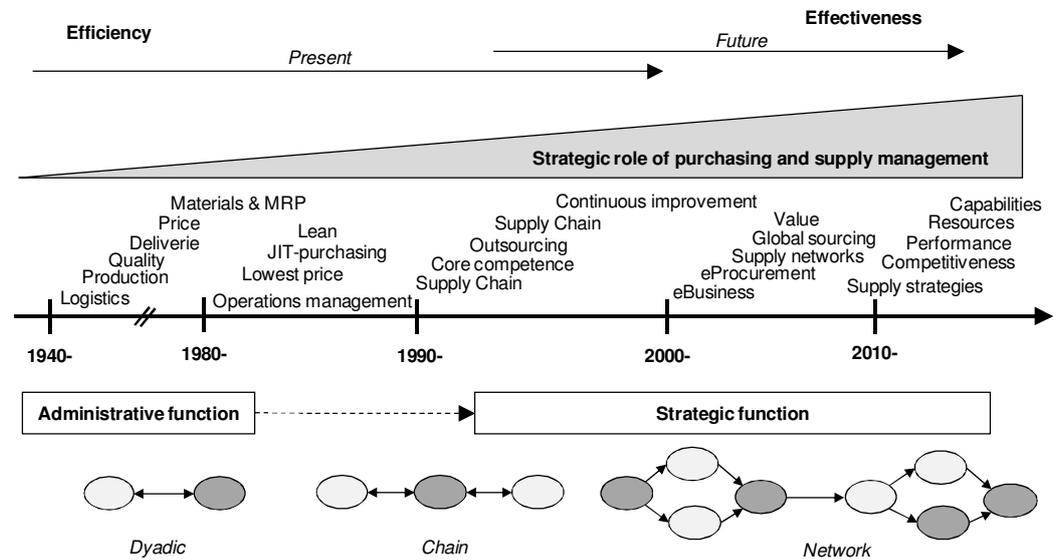


Figure 4. The changing face of PSM.

The evolutionary development of PSM started from the 1940s-1960s when PSM was associated with logistics due to delivery reliability and on time deliveries. In the 1950s, logistics term was widely accepted in business as a part of operational management and it was kept in close relationship with production. Purchasing's role was noticed as materials movement within factory or firm got increased attention. In other words, purchasing was kept as a part of inbound logistics and materials management. Later, in the 1960's the importance of material inflow and outflow found favor in business sciences in which case research areas such as materials requirement planning and material resource planning were evolved. (Monczka, et al., 2005; Cousins et al., 2008, p. 11)

Until mid-1970s, purchasing was seen primarily as an administrative function rather than strategic (Ansoff, 1968; Farmer, 1974). According to Monczka et al. (2005), purchasing was paralleled by materials management, and buyer supplier relationships were characterized as arm's length relationships. In the 1980s, PSM was focused on buying at the lowest price and it was integrated

more into operations management. Purchasing started to gain attention as its potential and contribution to Supply Chain Management (SCM) was realized (Cousins, 2008, p. 12). Moreover, Porter (1980) had presented the five forces model of competitive advantage where he emphasized purchasing and also introduced the meaning of bargaining power. In spite of purchasing was recognized to be important, it still remained in close relationship with manufacturing, especially lean manufacturing and JIT instances, because of the popularity of the Toyota Production System (Womack et al., 1990). The Toyota Production System was the major phenomena in the 1980s even though Kraljic (1983) had published his article where he claimed purchasing must become strategic sourcing. According to Carr and Smeltzer (2000, p. 40), in 1980s purchasing function was occupied with employees without any or less purchasing specific skills. This indicates that purchasing was still not achieved strategic importance.

In the 1990s supply chain management started to integrate into strategic decision making as management realized purchasing's potential to substantial money savings (Cousins, 2008, p. 13). According to Gadde and Håkansson (2001, p. 23-24) supply chain management and outsourcing were the main trends on purchasing since the 1990s, as core competence of the company (Prahalad and Hamel, 1990) relieved that each company should focus on a few core business activities that will bring long term competitive advantage (Quinn, 1999; Quinn and Hilmer, 1994). The outsourcing tendency entailed value adding role in the strategic decisions (Quinn, 1999), which meant strategic decisions should be made through value-based thinking rather than cost-based thinking. In reference to that, PSM's contribution to company's strategies (as an enabler) was understood and PSM discussions turned more strategic. According to Bailey et al. (2005) and Lysons and Farrington (2006), purchasing had become proactive instead of being responsive. However, in SCM research the trend was opposite: the whole

supply chain must become responsive through “agility” so that a company can survive in volatile markets (Christopher, 2000).

In the 2000s eBusiness was a big trend in business because of the development of the Internet (Hopkins, 2011). It entailed a whole new dimension for PSM: intellectual assets and information. As industrialized economies had shifted from natural resources to intellectual assets during the last decades (Hansen et al., 1999), the shift had generated a whole new focus for management: information sharing, communications and knowledge management (Hadaya and Cassivi, 2009). In that case, achieving competitive advantage, management focus had shifted not only to the importance and the utilization of knowledge and information in companies, but also between companies (Monczka et al., 1998; Li et al., 2005).

The rise of the Internet also enabled the acceleration of globalization. In PSM that meant increasing need for extended procurement and overall orientation of purchasing activities in order to secure the profit base of a firm (Arnold, 1989, p. 19; Christopher, 1998). Moreover, globalization was thought to offer the best opportunity to achieve major performance gains (Trent and Monczka, 2003). As international purchasing achieved strategic significance, it generated a higher level purchasing, global sourcing (Arnold, 1989, p. 19-20; Trent and Monczka, 2003; Monczka et al., 2005).

Even though SCM was still considered the major research area and business focus in the 2000s, PSM had achieved strategic importance. By the 2000s, at the latest, PSM was not seen as merely a function or operational business area for reducing costs anymore. From the strategic perspective purchasing was characterized more as a value adding function (Saunders, 1997; Hughes et al., 1998; van Weele, 2002; Baily et al., 2005; Lysons and Farrington, 2006).

Today PSM is expected to bring value as modern PSM is seen more sourcing than purchasing (Trent and Monczka, 1998; Paulraj and Chen, 2005b; Chan and Chin, 2007; Hopkins, 2010). The foundation of the modern purchasing and supply management is based on the value chain theory (Porter, 1985). Traditionally authors refer to Porter's (1985) value chain when describing the purchasing and supply function in industrial companies (van Weele, 2002). However, the traditional value chain model of Porter includes only an internal perspective of a firm and does not acknowledge the value adding activities between the firms in a supply chain. Therefore, value chain thinking needs to be expanded towards relationships and activities between buyers and suppliers which several authors have underlined in purchasing and in supply chains (see e.g. Smeltzer et al., 2003; Melnyk et al., 2010).

2.3 PSM Maturity

PSM maturity models, along with the evolutionary development, shape the conception of PSM. Maturity has been defined as the level of professionalism in the purchasing function (Rozemeijer et al., 2003, p. 7). According to Schiele (2007), a maturity model describes auditable stages which an organization is expected to go through in its quest for greater sophistication. Purchasing organizations in mature level apply world-class best practices, while unsophisticated organizations fail to employ those (Ellram et al., 2002). This creates an assumption that greater maturity is associated with better performance (Schiele, 2007).

Today's turbulent business environment requires companies to change their business strategies to maintain or achieve competitiveness. The development of purchasing and supply management is worth of emphasizing in this connection. Reck and Long (1988) developed one of the earliest typologies of purchasing function development. The model evaluates the competitive role

and contribution of purchasing to any type of company (see figure 5). The model of Reck and Long (1988) reflects strategic alignment that forces PSM renewal from the stage 1 to stage 4 – from ‘Passive’ to ‘Integrative.’ This development mirrors the shift from administrative function to a strategic function - or to ‘a competitive weapon’ of the organization as Reck and Long (1988) portray in their research.

In Reck and Long (1988, p. 4) model, purchasing is described as ‘Passive’ in the stage 1 which represents the poorest level of purchasing if considered its contribution to company strategy and business. In this stage purchasing is a transactional and clerical function without any strategic direction. The stage 2 is ‘Independent’ where purchasing embrace the latest technologies and tools used in the outside market. By this stage purchasing does not have evident contribution to competitive advantage. However, in the stage 3, purchasing characterized as ‘Supportive’ as its status is recognized - purchasing is acknowledge being essential for business and it is seen to strengthen and support firm’s competitive advantage. In the stage 4, purchasing is characterized as ‘Integrative.’ In this stage purchasing is an integral part of firm’s competitive strategy and purchasing actions are proactive. In addition, firms competitive success is enabled by the skills and capabilities built over the three previous stages. In reference to the development stages, the model depicts the initial understanding of capabilities and skills and their role in PSM.

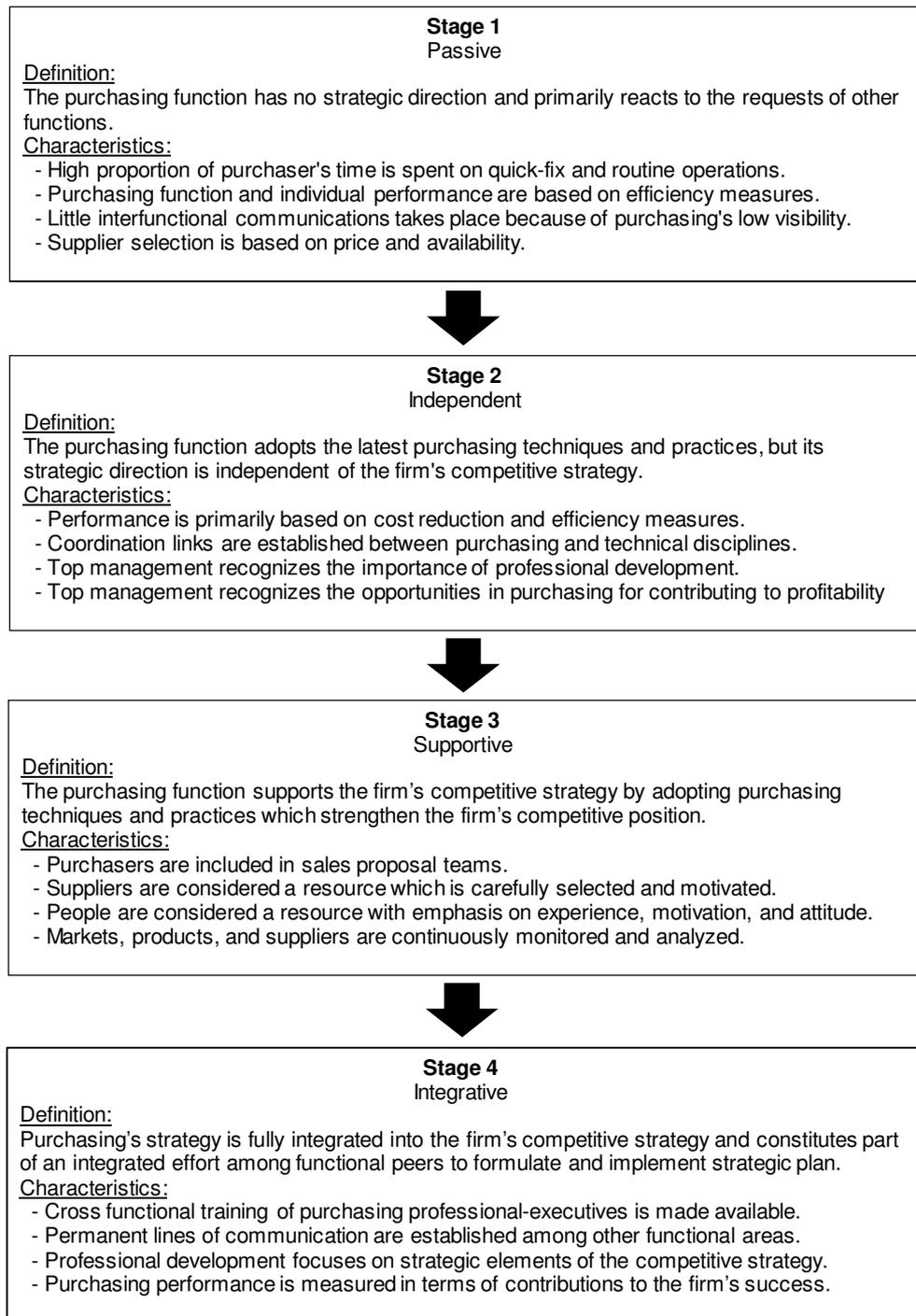


Figure 5. Strategic stages of the development of a purchasing function (adapted from Reck and Long, 1988, p. 4)

Reck and Long (1988) development model lacks the professionalism aspect as it is concentrated on describing organizational development. To understand the connection between PSM development and PSM professionalism, Van Weele et al. (1998) have identified the maturity model. This model identifies six development stages over time, and points out the areas in which PSM may develop in terms of professionalism in a company (Figure 6).

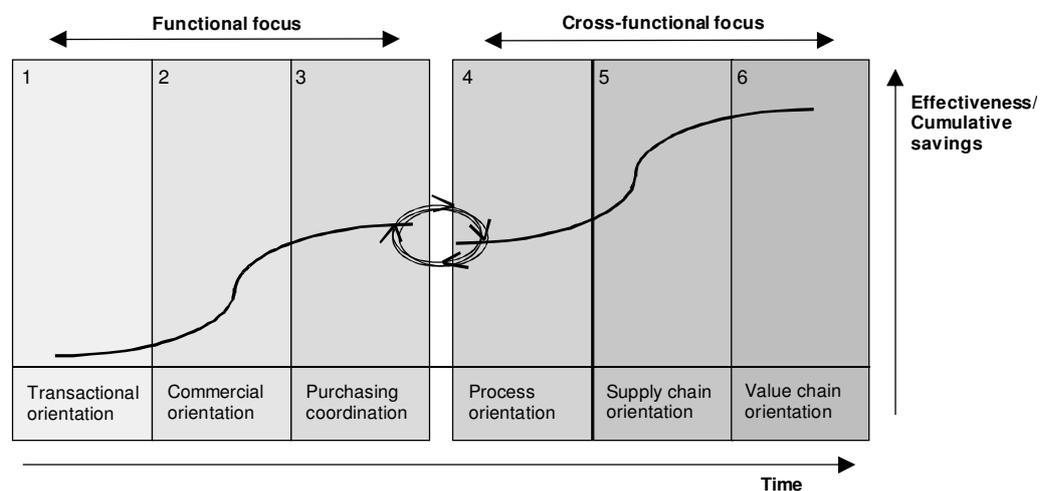


Figure 6. Purchasing development model (adapted from van Weele, 2002, p. 110; van Weele et al., 1998, p.)

The lowest level of maturity is about *transactional orientation* where purchasing is defined as a passive operation where purchasing professionals are mere administrators of tasks. The second level is *commercial orientation*, where bid techniques, commercial proposals comparisons, and use of pre-qualified suppliers are utilized to achieve an elaborate approach to commercial details. PSM strategy is characterized by an emphasis on low unit prices and the impact of these savings in the company results. The third stage is *purchasing coordination* where sourcing strategies begins to be integral part of the PSM activities. Aim is to capture the benefits of internal

coordination and synergies. Besides price and costs, the role of PSM is recognized as an important contributor to the quality of products purchased. In stage 4, *process orientation*, the strategic importance of PSM is finally recognized. PSM function focus is on the total cost (reducing total cost). In this stage, PSM is more process-oriented and seeks to organize the PSM function around the internal stakeholders. In stage 5, PSM is *supply chain oriented*. PSM's focus is on the entire supply chain and in cooperation with suppliers (and supply partners). Aim is new products development and cooperative production planning. The final stage 6, *value chain orientation*, is the most sophisticated development phase. In this stage PSM focuses on customer and end user perspective, in more detail focus is on customer value. In stage 6 PSM strategy is diluted in the overall business strategy. In addition, information systems are set in place to integrate both upstream as downstream chains. (van Weele et al., 1998; van Weele, 2002; Axelsson et al., 2006)

According to Axelsson et al., (2006) the first three initial stages have a functional approach in common, in which PSM works with relative independence or isolation. In the last four stages, focus is cross-functional instead. The direction of the PSM progression from left to right (stages 1-6) is not always natural (Axelsson et al., 2006). According to (Axelsson et al., 2006), sometimes organizations can 'go back' one or more stages, depending on changes in macroeconomic conditions (external factors) or even in the corporate business strategy (internal factors).

PSM maturity model can be adapted into a useful purchasing maturity assessment tool to define 'as-is' level of PSM (Axelsson et al., 2006, p. 201). Assessment tool contains seven different dimensions: *strategy, structure/organizational alignment, sourcing, supplier management, steering and supervision, system, and staff and skills*. The tool contains questions related to each dimension. These questions are supposed to be answered

'as-is' manner at first, and next questions are answered 'to-be' manner to establish the gap between current level and future level. This results implications for development and action plans. As a result, the maturity wheel diagram can be illustrated to recognize the areas of PSM that need development (see figure 7).

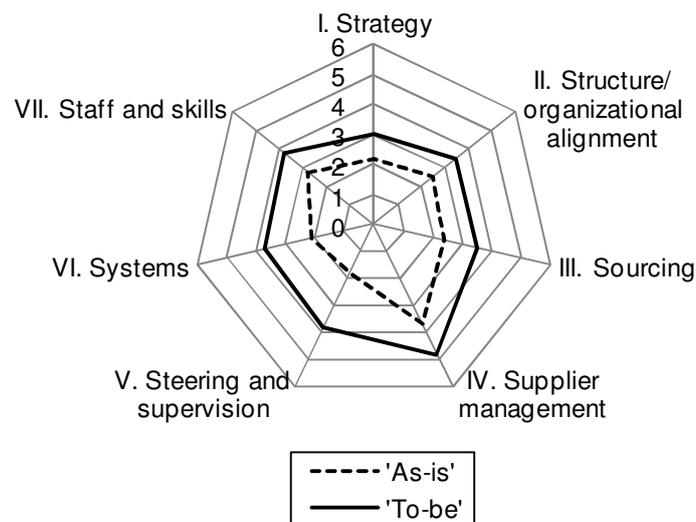


Figure 7. The maturity wheel diagram (adapted from Axelsson et al., 2006, p. 203)

2.4 Trends in PSM

In future the focus of PSM is shifting towards capabilities, resources, and competitive advantage. As PSM has evolved during time, the development of the best practices has not (González-Benito, 2007). Thus access to capabilities is becoming more important than merely purchasing or sourcing a product or service (Hughes et al., 1998, p. 73). On the other hand, PSM scope has expanded to cover external resources and therefore companies have become more willingness to commit resources to develop supplier

performance capabilities and work over company's boundaries (Trent, 2007, p. 23; Cousins et al., 2008, p. 113).

As far as competitiveness is discussed in research, a lot of interest has been put into competitive advantage resulted from the use and development of unique resources and capabilities (Prahalad and Hamel, 1990; Hamel and Prahalad, 1996). According to Coates and McDermott (2002) maintaining competitive advantage requires competitive strategies. Even though competitive advantage thinking is widely adopted in the different field of business, development of the phenomenon has lagged (Coates and McDermott, 2002, p. 435). Moreover, Wolf (2005, p. 17) argues that PSM has strategic potential to contribute competitiveness. Wolf (2005) address that long-term perspective for building networks of competence is required if conventional purchasing can transform into strategic purchasing. Because of this, capable people and capabilities are becoming a highly valuable strategic asset. According to Trent (2007, p. 14), strategic supply will not happen without the right people.

The determining factor in capabilities and skills is finding the fit between staff capabilities and the need of the organization (Saunders, 1997, p. 294). In addition, strategic supply requires alignment to overall corporate objectives (Narasimhan and Das, 1999; Brown and Cousins, 2004) as corporate business strategies change. That creates a challenge for PSM professionals to respond to these changes. If PSM capability, in other words skills and competencies of PSM professionals, is not at the required level and cannot respond to strategic change, the organization cannot to fulfill its strategic objectives (Cousins et al., 2008, p. 111). Figure 8 presents the role and importance of PSM capability in corporate strategy, and the overall idea of PSM's strategic alignment.

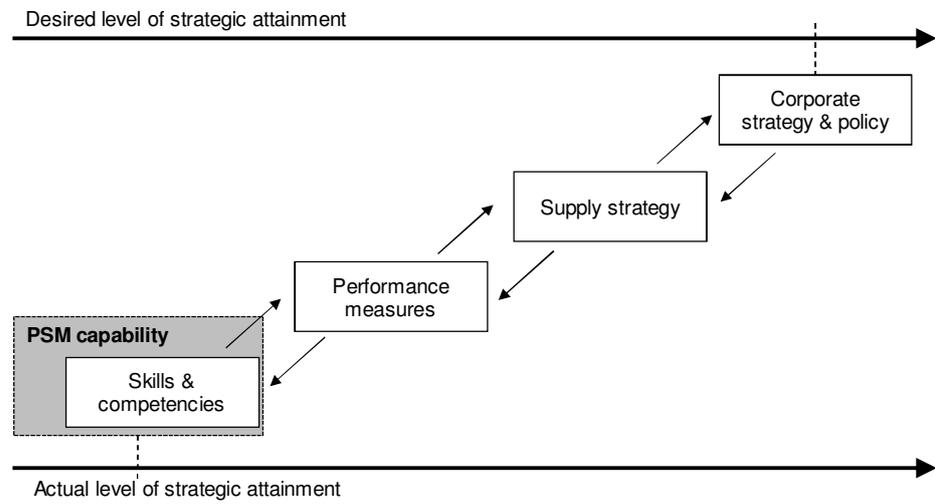


Figure 8. The strategic alignment model (adapted and modified from Cousins et al., 2008, p. 112)

3 PURCHASING AND SUPPLY MANAGEMENT PERFORMANCE: A CAPABILITY-BASED VIEW

In purchasing and supply management (PSM) an accurate performance measurement of the PSM's impact on firm performance is found to be a particularly difficult job due to several conceptual problems (Van Weele, 1984, p. 18). PSM performance conceptions have changed over time due to the evolutionary development of PSM as the nature of PSM has transformed from administrative function to a more strategic function (see e.g. Kraljic 1983; Freeman and Cavinato 1990; Ellram and Carr, 1994; Carr and Smeltzer, 1997; Carr and Smeltzer, 1999; Cousins and Spekman, 2003). Moreover, the definition of PSM performance differs a lot depending on how PSM is understood and organized in a company (Kraljic, 1983). PSM development and maturity differences have made PSM performance (as a phenomenon) complex, multi-dimensional, and unstructured. In this chapter is first introduced the conceptual problems of PSM performance to get the pre-understanding to the multidimensional topic. Then key PSM performance dimensions and critical PSM performance factors are presented to assess a systematic framework for understanding PSM performance. Finally, the role of capabilities in PSM performance framework is discussed.

3.1 Conceptual Problems of PSM Performance

Conceptualization of PSM performance is the area of concern in both organizational sciences and strategic management (Steers, 1975; Venkatraman, 1990). Conceptualization is necessary from the management perspective because according to Hughes et al. (1998, p.183): "*What gets measured, gets managed.*" In general, performance is measured by very specific and primarily operational performance measures and thus they do

not – or only partially – establish a relationship to the organization’s strategic goals. In other words, performance concept lacks the required strategic perspective (Gleich, 2001, p. 22; Hughes t al., 1998) and do not reflect to the needs for reliable and valid measures that reflect purchasing and supply management strategic contribution (Carter et al., 2005, p. 8).

In PSM performance, the first problem is related to the management that shapes purchasing and supply function with strategies and visions. van Weele (1984, p. 17; 2002, p. 255-256) highlights four different management views that affects purchasing and supply performance: *operational, administrative activity, commercial activity, part of integrated logistics, strategic business area*. These views presents the previously introduced purchasing and supply function maturity, evolution, development, and other business and industry influential matters (chapter 2). Table 1 illustrates the alternative management perspectives, hierarchical positions, and some performance measures typical to the particular management viewpoint.

Table 1. How management may look at purchasing (adapted from van Weele, 1984, p. 17; van Weele, 2002, p. 256)

Alternative viewpoints	Hierarchical position of purchasing	Performance measures	Focus
Purchasing as an operational and administrative function	Low in organization	Number of orders, order backlog, purchasing administration lead time, authorization, procedures, etc.	Efficiency
Purchasing as a commercial activity	Reporting to management	Savings, price reduction, ROI-measures, inflation reports, variance reports	Efficiency
Purchasing as a part of integrated logistics management	Purchasing integrated with other materials-related functions	Savings, cost-reduction, supplier delivery reliability, reject-rates, lead time reduction	Efficiency
Purchasing as a strategic business function	Purchasing represented in top management	‘Should cost’ analysis, early supplier involvement, make-or-buy, supply base reduction	Effectiveness

These management views demonstrate that performance is not understood similarly in business as they present the status of purchasing and supply function. A universal conceptualization is a difficult task if industries are taken into account.

Second problem is related to PSM context – development and maturity stages, which outline company's purchasing and supply function's performance framework. According to van Weele (2002, p. 257), the major problems to understand purchasing and supply performance are: *lack of definition, lack of formal objects, problems of accurate measurement, and difference in scope of purchasing*. To complement van Weele's aspect of the problems, Rozemeijer et al. (2003) have presented a preliminary model for purchasing synergy that indicates the antecedents of purchasing performance: *corporate strategy, purchasing maturity, corporate organization, and business context* (Rozemeijer et al., 2003, p. 4). According to Rozemeijer et al. (2003) purchasing performance contains these factors that will lead to the conception of actual purchasing performance.

Third problem is related to multiple dimensions of performance - what should be measured? According to Carter et al. (2005, pp. 27-31), the most common performance measurement model, balanced scorecard (Kaplan and Norton, 1992) offers a multi-dimensional measurement tool by comprising dimensions as diverse as: *impact on profitability, relationships with internal customers and suppliers, process efficiency, and people management* (see figure 9). However, from the PSM perspective the balanced scorecard lacks organizational input and supplier perspectives (Lardenoije et al., 2005, p. 5). And moreover, despite of purchasing and supply management has good control over basic administrative systems, missing skills are another problem. According to Keough (1994, p. 74) it is often questionable whether the PSM has the capable people to shift quickly to a more strategic orientation. The balanced scorecard lacks these issues and factors also.

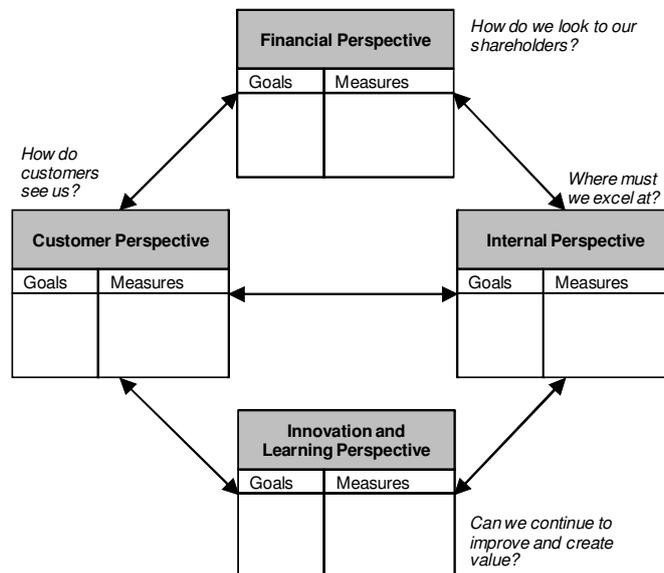


Figure 9. The Balanced Scorecard links performance measures (adapted from Kaplan and Norton, 1992, p. 72)

3.2 PSM Performance Framework: The Key Dimensions

In purchasing and supply management research ‘*efficiency-effectiveness*’ - mindset is probably the most famous purchasing and supply performance mindset. The two performance dimensions efficiency and effectiveness was first connected to purchasing performance by van Weele (1984). According to van Weele (1984, p. 18-19) *efficiency* is the relationship between the planned and actual sacrifices which are made to achieve agreed goals, and *effectiveness* is the extent to which a goal can be met using a chosen course of action. Thus van Weele (1984, p.18-19) describes that performance “*can be considered as the extent to which the purchasing function is able to realize its predetermined goals at the sacrifice of a minimum of the company’s resources.*” Same kind of ideas are presented by Lysons and Farrington (2006, p. 22) who state efficiency can be understood to measure how well or productively resources are used to achieve a goal, whereas effectiveness is a measure of the appropriateness of the goals the organization is pursuing and

of the degree to which those goals are achieved. PSM performance is therefore seen: *"quantitative or qualitative assessment over a given time towards the achievement of corporate or operational goals and objectives relating to purchasing economies, efficiency and effectiveness."* (Lysons and Farrington, 2006, p. 634). These key dimensions of performance are described in figure 10.

Trent (2007, p. 62) have added a perspective for the previous performance definition that helps differentiate between efficiency and effectiveness: efficiency is *doing things right* and effectiveness is *doing the right things*. Even though efficiency and effectiveness are distinct dimensions of performance, they have a relationship (Tersine, 1985). According to Dumond (1991), performance measurement system can focus on effectiveness or efficiency, or both. As both dimensions can be contained in performance perspective and measurement, the dimensions provide different measurement focus to performance: efficiency provides operational measures and effectiveness more likely strategic measures (Tersine, 1985; Cousins et al., 2008, p. 149).

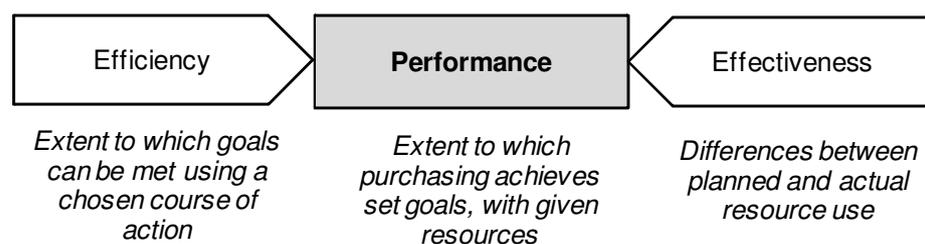


Figure 10. Definitions of purchasing performance dimensions (adapted from Cousins et al., 2008, p. 149)

Measurement of purchasing and supply management can be assessed in hundreds of different ways (Cousins et al., 2008, p. 152). According to Erridge (1995, p. 189) purchasing performance is defined through 'five rights':

right material, right quality, right place, right time, and right cost. These 'rights' represents an overall organizational context but remain too abstractive and too high level topics (Erridge, 1995, p. 189). In addition, Cousins et al. (2006, pp. 152-155) have defined similar major and most common performance categories. According to Cousins et al. (2006, p. 152) the most effective performance measurement system should include measures from the whole supply chain – form internal processes to suppliers and finally to customers. Figure 11 depicts the categories of PSM performance model that should assess the most important performance categories.

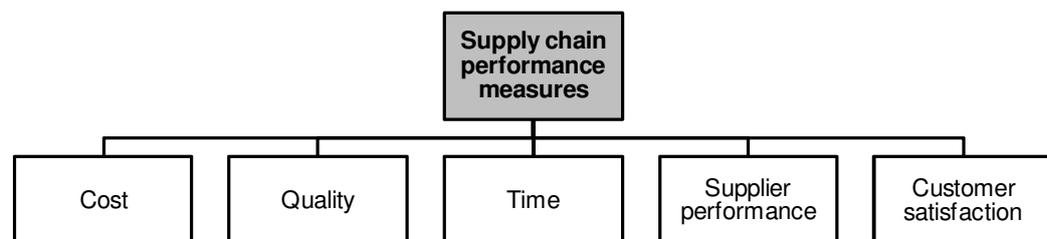


Figure 11. Categories of performance measurement (adapted from Cousins et al., 2008, p. 153).

A more detailed purchasing performance model is presented by Van Weele (2002, p. 259). van Weele's (2002) model contains price/cost, product/quality, logistics, and organizational dimensions (figure 12). In this model purchasing effectiveness is related to the first three dimensions and purchasing efficiency is related to the purchasing organization instead. In van Weele's (2002) model efficiency metrics are usually quantitative and administrative (Van Weele, 2002, p. 255) are related to more operational issues. Effectiveness metrics are more strategic issues as case they are largely qualitative and judgmental (Van Weele, 2002, p. 255).

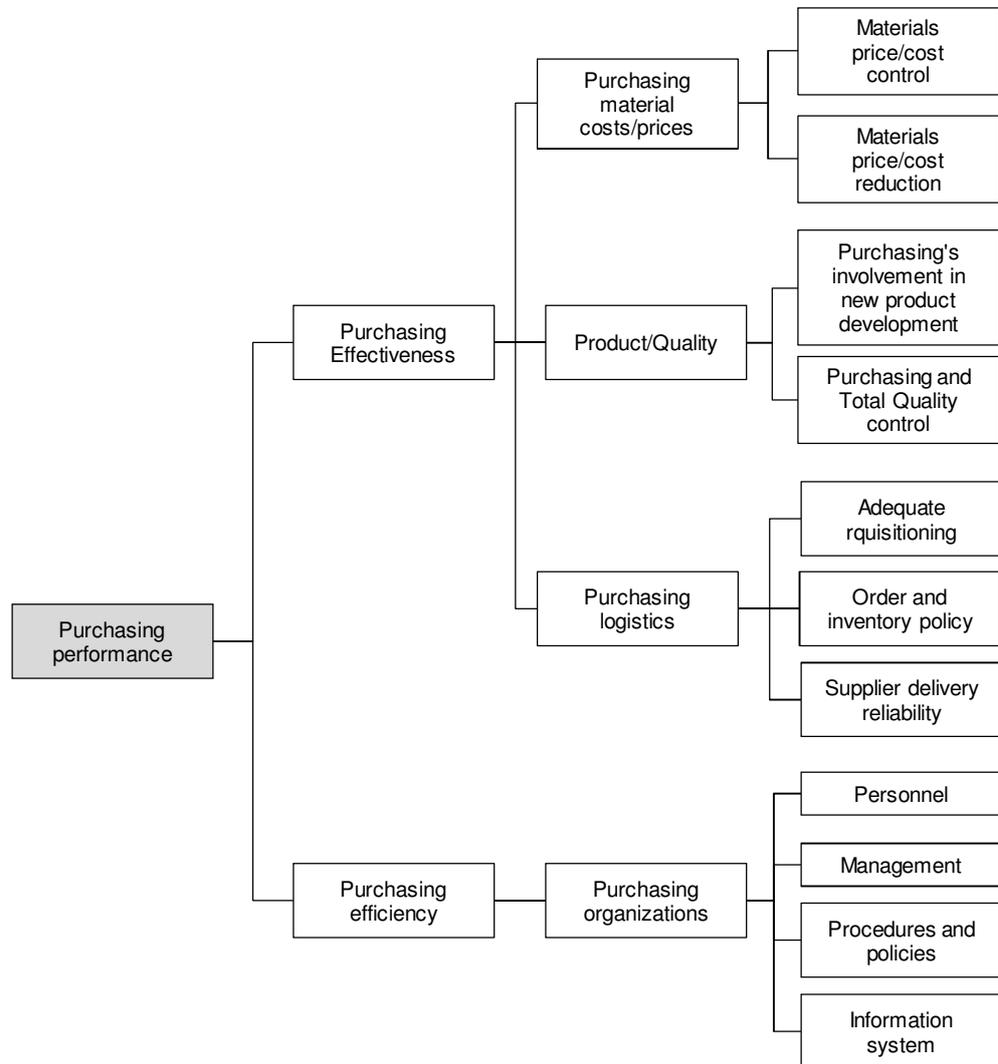


Figure 12. Key areas of purchasing performance measurement (van Weele, 2002, p. 259).

According to Lysons and Farrington (2006, p. 21), the strategic shift means moving from efficiency to effectiveness. From the efficiency perspective purchasing is seen operational. From the effectiveness perspective, purchasing is associated with strategic business area. As presented earlier, Tersine (1985) and Cousins et al. (2008, p. 149) emphasize efficiency to provide operational measures and effectiveness more likely strategic measures. These conceptual differences are important to take into

consideration when structuring a framework for PSM performance (van Weele, 1984; van Weele, 2002).

3.3 PSM Performance Framework: The Critical Factors

A large literature study was executed to study the critical factors. The existing literature, theories, and researches concerning purchasing performance, strategic sourcing performance, and purchasing performance measurement were studied. As a result, the critical factors of PSM performance were collected and situated under the strategic and operational perspective of PSM. These perspectives were adapted from the previous chapter (chapter 2) research findings. Therefore, a systemic view to PSM performance was structured. The PSM performance framework and the found critical factors are presented in table 2. These factors are discussed next in more detail.

Table 2. A systematic framework to understand PSM performance.

		Kraljic (1983)	Reck and Long (1988)	Keough (1993)	Butler (1995)	Barry et al. (1996)	Trent and Monczka (1998)	Carr and Smelzer (1997)	Saunders (1999)	Das and Narasimhan (2000)	Shin et al. (2000)	Easton et al. (2002)	van Weele (2002)	Chen et al. (2004)	Baily et al. (2005)	Carter et al. (2005)	Monczka et., al. (2005)	Lysons and Farrington (2006)	Paulraj et al. 2006	Cousins et al. (2008)	Schiele (2007)	Chan and Chin (2007)	Cai et al. (2009)	
Strategic perspective "Effectiveness"	Strategic management focus and orientation	X		X			X	X	X				X	X	X	X	X	X	X			X		
	Strategic involvement, purchasing integration	X		X			X		X				X	X	X	X	X	X	X			X		
	Purchasing's organizational structure	X		X	X	X			X			X	X	X	X	X	X	X	X			X		
	Cost reduction, cost leadership	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	
	Total cost of ownership					X	X	X	X	X	X												X	
	Supplier relationships	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X			X	X
	Value creation, added value	X		X				X	X	X			(X)					X	X					
	Customer perspective			X										X				X	X				X	
	Benchmarking								X			X				X							X	
	Innovation and new product development					X					X		X	X	X	X	X	X	X			X	X	
	Resources, capabilities, purchasing skills	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
	Operational perspective "Efficiency"	Supply base optimization			X					X	X	X	X	X	X	X	X	X	X	X				X
		Supplier capability auditing			X	X		X		X	X	X		X	X	X	X	X	X	X			X	X
Price		X						X	X			X	X	X	X	X	X	X	X				X	
Delivery and leadtimes						X			X	X							X			X			X	
Quality monitoring						X		X	X	X		X		X	X	X	X	X	X					
Risk management		X					X	X						X	X	X	X	X	X					
Processes, policies, process improvement		X		X	X	X	X	X	X			X		X	X	X	X	X	X			X	X	
Planning		X	X	X	X			X						X		X						X	X	
Controlling			X		X		X						X			X	X					X		
Communication, information exchange							X	X					X						X					

3.3.1 Organizational and Strategy Context

Carter and Narasimhan (1996) claim that supply decisions have an impact on firm performance and it has been recognized for years. Moreover, the interrelationship of purchasing and supply management with firm's strategy and its involvement in key decision-making issues, the purchasing function can be a major contributor to the firm's overall success (Ellram and Pearson, 1993). In addition, Ferguson et al. (1996) highlights purchasing function's vital role and participation to the firm's strategic planning process, which is based on the long-range growth and business success. Another performance factor is related to the organizational status of PSM. Purchasing is usually low in an organization's hierarchy which is caused by inefficient and insufficient purchasing leadership (Keough, 1994; Lardenoije et al., 2005). According to van Weele and Rozemeijer (1996) leadership and motivation are the prerequisites for improving purchasing performance, which requires different capabilities such as setting of targets, measuring actual versus planned performance through a coherent set of indicators, taking corrective actions when appropriate, for example. According to Monczka et al. (2005) the appropriate organizational structure and human resource skills are essential for effective purchasing and supply management.

3.3.2 Cost and Price

Traditionally PSM's primary function has been to supply the company with the needed goods and services at the lowest possible cost (see e.g. Tersine, 1985, Ellram and Carr, 1994). The purchasing function can thus significantly influence the firm's cost position. As the continuous cost reductions will always be the major issue and focus in supply management (Trent, 2007, p. 62), price and cost will not diminish from the performance metrics (Carter et al., 2000, p.19). Moreover, if glancing SCM literature, cost is often the issue

where to attack to gain supply chain and performance development. Related to this major mindset, a good example is presented by Hughes et al. (1998, p. 126-127): the three-pronged effective cost management program "*Price down - Cost down - Cost out.*" This program pictures the idea and the goals of the pure cost management that is involved in purchasing and supply management. Even though price and cost are important, they do not cover every aspect of performance. Hence, total cost of ownership (TCO) is noteworthy in performance assessment as TCO goes beyond price to include cost associated with such performance factors as quality, delivery performance, and cycle-time (Easton et al., 2002).

3.3.3 Value Creation and Customer Perspective

According to Coates and McDermott (2002), a competitive strategy in the short-term prioritizes cost efficiency, quality, and flexibility of operations as customer needs are static. However, from the value and customer perspective, van Weele and Rozemeijer (1996) see the things opposite: customers have actually become more demanding and their preferences are continuously changing. According to Melnyk et al. (2010), the new supply chain is strategically coupled and value driven, while the old supply chain was strategically decoupled and price driven. Therefore value-based thinking has shifted PSM's focus to end customers - the last actors (individuals or buy groups) in supply chain or network to make service differentiation decisions that cause a supply network to be activated. In other words, value is provided for customers by suppliers who actually supply based on the customer needs (Hughes et al., 1998). Therefore PSM contribution is in supply chain that is seen as a process that precedes the operation of value chain (Cox, 1997; Christopher et al., 2009).

3.3.4 Innovation and New Product Development

PSM can not only contribute to quality but also to innovation and new product development, for example through implementing supplier development programs or integrating suppliers into the product development process (Monczka et al., 2005, p. 24; Watts and Hahn, 1993, p. 13). In fact, constant innovation in manufacturing industry is the second option to survive besides drastic cost reduction (van Weele and Rozemeijer, 1996).

3.3.5 Benchmarking

According to Saunders (1999, p. 154) benchmarking is a technique for adopting best practices and identify gaps that need to be bridged in terms of performance. The study of Sánchez-Rodríguez et al. (2003) showed that, benchmarking in the purchasing function has a significant positive impact on purchasing performance. According to Hughes et al. (1998) benchmarking itself will not provide the best result. Baselining should be considered with benchmarking to assess the level where a company could reach. Benchmarking and baselining provides the best result if they are utilized together: benchmarking takes comparative perspective into consideration and baselining extrapolate supply chain future, i.e. possible benefits (Hughes et al., 1998).

3.3.6 Resources and capabilities

According to Paulraj and Chen (2005a), strategic supply management is driven by several critical factors. In modern turbulent business environment these factors not only bring change but also confront change. Thus successful purchasing and supply management requires adaptability of the supply chain, which is the key issue to success in dynamic business

environment (Melnyk et al., 2010). When talking about adaptability, it is essential to take organizational learning into account, as it is an important issue in PSM (Bessant et al., 2003; Noteboom, 2004). Organizational learning process begins from the individual level. Individual skills, continuous learning, and networking are found to be the three most important competence attributes in purchasing and supply management and supply chain effectiveness (Kayakutlu, G. and Büyüközkan, 2010; Hopkins, 2010). Related to the concept of competitiveness, Carr and Smeltzer (1997) and Chen et al. (2004) have found that effective purchasing and supply management influences the firm's performance. For example, according to Keough (1994, p. 72) a skillful employee could extract price discounts in contract negotiations which require a set of purchasing skills needed to cover specific issues of the purchase and important decisions. The required skills are related to challenging materials specifications, questioning products and their package designs, and influencing "make" versus "buy" decisions, for example (Keough, 1994, p. 72). Therefore capability and skills of the personnel of PSM play a crucial role in supply success and further in business success.

3.3.7 Suppliers Management

Most attention, after price and cost reduction, has probably been paid to collaborative buyer-supplier relationships that enhance firm's competitive edge (Carr and Pearson, 1999; Krause et al., 2001; Chen et al., 2004; Paulraj et al., 2006). Therefore long-term relationships are the objective in supplier relationship management (SRM). In its entirety, buyer-supplier relationships are crucial issue for competence of PSM as business relationships have the impact on companies and customers, and their evaluation, creation and management (Hughes et al., 1998, p. 6). What comes to the quantity of suppliers, supplier base optimization is a mean to keep supplier base in a minimally manageable level (Janda and Seshadri, 2001, p. 303)

3.3.8 Quality and Time

Besides price and costs, the role of PSM is recognized as an important contributor to the quality of products purchased (van Weele et al., 1998; van Weele 2002; Axelsson et al., 2006). In addition, quality and time are usually the core dimensions in performance models (see e.g. van Weele, 2002; Cousins et al., 2006). What comes to quality, it can be defined through product or service quality, fitness for use, performance, availability etc. (Lysons and Farrington, 2006, p. 267) or total quality management (TQM) that represents an integrative management concept where quality process of delivered goods and services are continually improved (see e.g. Evans, 1993, p. 837). Especially TQM have found to have a direct impact on improved firm performance (Easton and Jarrell, 1998; Samson and Terziovski, 1999).

Time is usually related to order processing times, leadtimes, delivery times, and cycle times (Tersine, 1985; Dumond, 1991; Trent and Monczka, 1998; Gunasekaran et al., 2004; González-Benito, 2007; Cai et al., 2009). Even though high quality and low cost mindset will not diminish, time-related capabilities are rapidly becoming the next generation of order winners (Monczka et al., 2005, p. 663).

3.3.9 Communication and Information sharing

The necessary PSM skills include analytical skills, communication skills, and general management skills (Keough, 1994; Van Weele, 1984). According to Carr and Smeltzer (1998), communication is relatively important in purchasing as information is needed to share not only between purchasing organization or in an organization but also among supply chain. Moreover, buyers and suppliers share important information relating to materials and product design issues aiming to improve the quality of the products, reduce customer

response time, and increase cost savings through greater product design and operational efficiencies (Carr and Pearson, 1997; Chen et al., 2004)

3.3.10 Risk management

As PSM is dependent on internal and external resources, several risks can arise and the impact is reflected to performance. Typical risks are for example, technical, commercial, contractual, and performance risks (van Weele, 2002). Dealing with external resources contains supply risk (Kraljic, 1983; Harland et al., 2003). Therefore risk management is heavily needed to include in performance concept. Supply risk management aim is to decrease product risk (Hallikas et al., 2005), process, control, demand, environment risk (Christopher and Peck, 2004), disruption, price, inventories and schedule, technology, and quality risk (Treleven and Schweikhart, 1988).

3.3.11 Planning and Controlling

Another performance factor is purchasing's strategic planning and managerial perspective that acknowledge different maturity levels (Freeman and Cavinato, 1990; Schiele et al., 2007). Hence, purchasing maturity related dimensions such as procurement planning and purchasing structures should be associated with performance (Schiele et al., 2007). A strong argument is that planning and forward thinking embody the phrase proactive, which PSM should be if it is aimed to preserve its competitive advantage in changing business environment (Baily et al., 2005; Cousins and Spekman, 2003, p. 21).

3.4 PSM Performance Framework and Capabilities

PSM's value is usually measured in monetary units and PSM performance definitions have featured financial performance as the primary outcome. In most cases PSM performance is commonly measured with achieved cost savings and price reductions. Supply savings come from the total spend with suppliers that is the single largest cost category for most companies (Johnson and Leenders, 2010). However, continuous change in business environment has created new demands and complexity (Beamon 1999; Gunasekaran et al., 2001; Johnson and Leenders, 2010). Hence, PSM value has found to consist of intangible issues and non-financial factors as well (Gunasekaran et al., 2001).

Purchasing capabilities and skills are not only related to strategic purchasing but also to a firm's financial performance and supplier responsiveness (Carr and Smeltzer, 2000). In this case resources are not equal to capability because resources can be all kinds of assets such as organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness (Barney, 1991, p. 101). In addition, Carr and Smeltzer (1997) rather focus on the skills and knowledge of purchasing employees. The resource dependency among resource-based view together can foster competitive advantage through resources capabilities that a firm can possess on their own and through relationship-specific resources and capabilities.

The research of González-Benito (2007) shows that aligning purchasing capabilities with business strategy is important if purchasing performance is aimed to improve. According to González-Benito (2007, p. 914) it is necessary for companies to improve particularly purchasing capabilities, rather than replicating practices that have been beneficial in other companies.

According to Narasimhan and Das (2001), the effect of certain purchasing practices on performance is stronger when the strategic integration of purchasing is stronger. This refers to the purchasing and supply maturity as same practices are not equally good for any company in any industry. González-Benito (2007, p. 914) explains that the capabilities that companies generate are not equally necessary at any company. In this case, managers should define own purchasing and supply capabilities required by the company and look for those practices in which company is able to exploit such capabilities in the most efficient way (González-Benito, 2007).

Another thing that is needed to involve in PSM performance definition is perspective and objectivity. According to literature findings purchasing performance can be achieved by executing specific internal and external purchasing practices, in addition to other internal and external performance drivers. From the external point of view, leading-edge companies have found to have a global competitive sourcing process that searches for main suppliers with world-class capabilities and global presence (Van Weele and Rozemeijer, 1996). From the capability perspective, leading purchasing organizations have found to have the skills to show suppliers how to perform better (Keough, 1994). This calls for capabilities to work cross the firm boundaries (Cousins et al., 2008, p. 113).

In conclusion, the critical factors in the structured PSM framework (table 2) must be understood through capabilities. In other words, every critical factor involves capabilities and skills so that they can contribute performance. Without capabilities, the critical factors will not function. Therefore, capabilities are eventually the enablers of PSM performance (figure 13).

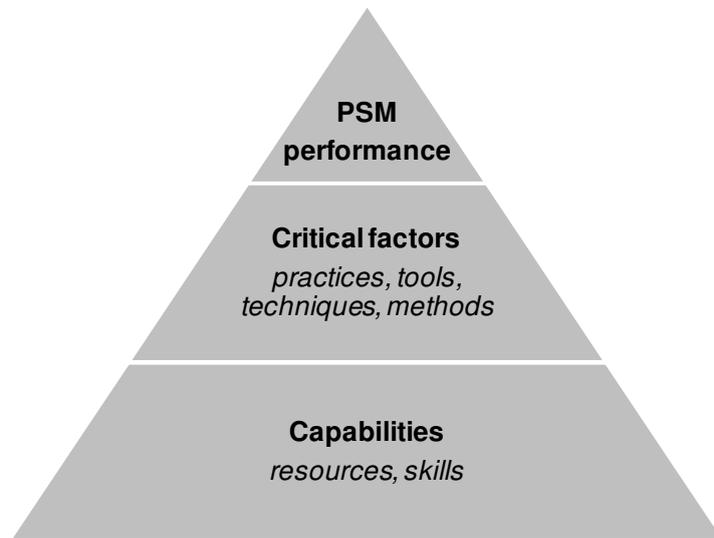


Figure 13. Capabilities as enablers of PSM performance.

4 RESEARCH METHODOLOGY

Gleich et al. (2009) outlines that present performance concepts and models have difficulties in evaluating the bottom line impact of PSM. Practical and empirical perspectives of PSM performance are needed to consider in this research, if the role of capabilities in PSM performance is aimed to study in a practical level. Therefore this thesis began with examination of existing theory (literature review). Theory framework of PSM, capabilities, and PSM performance were presented in the literature review aiming to create the pre-understanding and mindset of the research topic. Pre-understanding was needed because purchasing and supply management performance and capabilities, as terms, are multidimensional and unstructured. The literature study findings motivated to search for research methods to comply with the literature findings, i.e. to provide means to research multidimensional and unstructured research topic. It required scientific approaches to attempt to ground theoretical concepts with reality. In addition, relatively open-ended approach to the research process was required because of the unstructured nature of the research objective. Therefore, theoretical and empirical research is conducted in this study. This chapter presents research methodology for empirical research.

4.1 Research Design

The research process in this study is adapted from Stuart et al. (2002, p. 420) research model that represents the generic research and dissemination process that is made up of five critical stages as illustrated in figure 14.

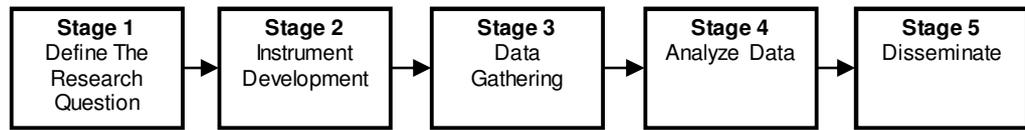


Figure 14. Research process model (Stuart et al., 2002, p. 420)

In this thesis qualitative research was selected as the research strategy because of the qualitative research is argued to be a good method for studying especially unstructured, complex, and multi-dimensional research problems because it is flexible and exploratory method (Eriksson and Kovalainen, 2008). An academic qualitative research uses interviews, surveys, observation and document information for data collection methods (Lee and Lings, 2008). From these, the interview is probably the most popular data collection technique (Lee and Lings, 2008). Another possible way to collect qualitative data is the Delphi method. It is a systematic procedure to research experts' opinions about the future (Azani and Khorramshahgol, 1990). The data collection in Delphi process is possible to execute through questionnaires and interviews (Gordon, 1994). Due to the unstructured, complex, and multidimensional research topics, qualitative research methods, especially case oriented approaches are suitable when there are no ready-made ways to parse the research question (Dubois and Araujo, 2007, p. 171).

The empirical research design (see figure 15) follows the principles of the Delphi method in stage 1, semi-structural interviews in stage 2, and case research in stage 3. These methods are presented next in more detail.

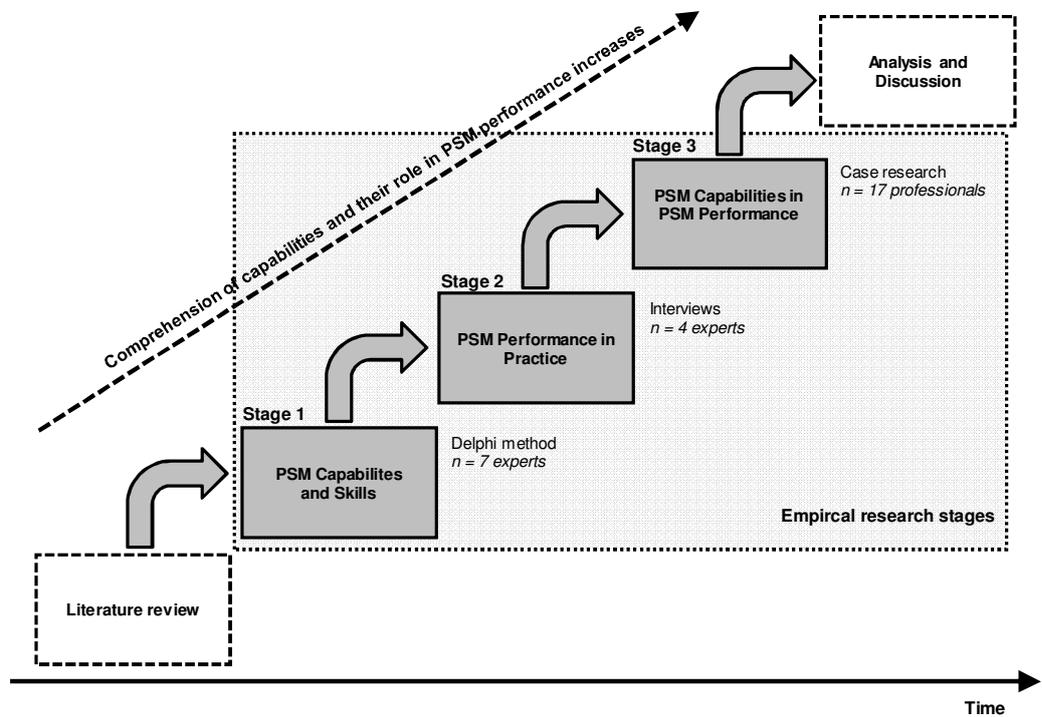


Figure 15. Research process.

4.1.1 The Delphi Method

The Delphi method is a widely used forecasting tool as its aim is to describe possible futures (Azani and Khorramshahgol, 1990; Linstone and Turoff, 2002). The Delphi method was originally developed for collecting and structuring future related information (Fowles, 1978; Gibson & Miller, 1990). In addition, the Delphi method is also found to be useful method for analyzing complex and multidimensional problems (Gibson and Miller, 1990). The typical Delphi process consist more than two round of expert panels where the experts' contribution is in identifying driving forces and variables which affect the future (Gordon, 1994). In each round the experts answer questions. Questions can be placed through questionnaires or interviews. After each round, answers are analysed, summarized, and finally reported back to the

panel members in the form of new questionnaire (Gibson and Miller, 1990; Gordon, 1994).

The selection of participants is the first and most important stage of the Delphi process (Gordon, 1994). Another critical stage is related to facilitation of the dialogue among the experts or a small group of knowledgeable individuals (Gordon, 1994). Moreover, an appropriate and well structured group communication process is needed to obtain a useful result for the Delphi study objective (Linstone and Turoff, 2002, p. 5). At least the design of questionnaires and feedback system to the panel members should be well structured in advance (Azani and Khorramshahgol, 1990; Gordon, 1994). The anonymity of the respondents assures honest answers and a greater freedom of expression to the experts (Gibson and Miller, 1990; Gordon, 1994).

4.1.2 Semi-structured Interview

To explore the deep structures of the phenomenon, “thick” descriptions that explore multiple dimensions and properties are needed in qualitative research (Hirschman, 1986). These descriptions are generated using qualitative techniques such as asking open-ended questions and examining multiple data sources, which can be executed through interviews, observations, and documents (Hirschman, 1986; Maxwell, 1996). From these research methods, an interview is very common in qualitative business research (Gordon, 1994). Moreover, interviews can also be a part of the Delphi process - interviews can be used instead of questionnaires (Lee and Lings, 2008) because interviews provide an efficient way to gather rich, empirical data especially when the phenomenon of interest is highly episodic and infrequent (Eisenhardt and Graebner, 2007, p. 28). In this instance, if the interview situation remains fairly informal and conversational, the output data is systematic and comprehensive (Eriksson and Kovalainen, 2008).

In general, an interview is often a face-to-face appointment or telephone discussion that is organized into a series of questions and answers (Eriksson and Kovalainen, 2008, p. 78). Organizing to interviews requires transforming research questions into interview questions, which are not supposed to be confounded with each other (Glesne, 1999, p. 69). According to Bryman (2006) structured interview and questionnaire research are utilized more in quantitative side of research, whereas in the qualitative side the semi-structured interview tends to predominate. In semi-structured interviews the interviewer has a pre-prepared outline of topics or themes but the set-up in interview situation is more flexible than in structured interview: interviewer can ask questions in order that fits best in the situation and also different ways from different participants (Lindlof and Taylor, 2002; Eriksson and Kovalainen, 2008).

4.1.3 Case Research

Case research provides an excellent means for developing understanding for the subject matter that is very complex and hard-to-grasp (Meredith, 1998; Eriksson and Kovalainen, 2008). Case-based research represents the intersection of theory, structures and events (Gubrium, 1988). Hence, case research is a scientific approach that attempts to ground theoretical concepts with reality (Stuart et al., 2002). Because of observational richness of case-based approaches, they provide means of extensions to existing concepts (Stuart et al., 2002). Therefore case research methodology is appropriate and essential not only when theory does not exist or is unlikely to apply, but also when theory exists but the environmental context is different (Stuart et al., 2002, p. 423).

Due to the complexity of the research topic, research questions can change in case research (Eriksson and Kovalainen 2008). Therefore, research object,

its boundaries and context are often emergent outcomes of the research process (Dubois and Araujo, 2007). According to Bryman (2006) qualitative research is depicted as a research strategy whose emphasis is on a relatively open-ended approach to the research process that frequently produces surprises, changes of direction and new insights. Therefore, in case studies defining the research questions require appropriate skills from the researcher (Stake, 1999). That compels researcher to progressively construct the context and boundaries of the phenomena under investigation as theory interacts with methodological decisions and empirical observations (Dubois and Araujo, 2007, p. 171)

The goal of any case research is to understand as fully as possible the phenomenon that is studied through '*perceptual triangulation*' because in all qualitative research knowledge depends heavily on the perceptions of the actors and of the observer or case compiler (Bonoma, 1985, p. 203). Therefore case study is a suggested research method especially when non-standard forms of behaviour are examined and aimed to understand (Schein, 1986). Gleich et al. (2009) outlines that present performance concepts and models have difficulties in evaluating the bottom line impact of PSM. In the context of this study, involving the bottom line impact of PSM into the case study is important. Practical and empirical perspectives of PSM performance are needed to research the role of capabilities in PSM performance in a practical level.

4.1.4 Description of the Delphi-panel Experts

Empirical study began with careful selection of the participants for the Delphi process. All the participants to be involved in the expert panels ought to have national-level expert status on the research topic. Eventually seven experts were chosen from the different industries to ensure that different views of

purchasing and supply management, capability, tools, and practices related knowledge will be covered in appropriate extent. Every selected expert holds managerial position in their organizations. Three of the experts were purchasing directors, three chief executive officers (CEO), and one works as senior consultant. The interviewees represent different industries and divergent organizations: both industrial and service sectors, and public and private sectors were represented. The companies that experts represent were also diverse: amount of employees ranging from ten to nine thousand employees (in Finland) and turnovers from 1 million Euros to 800 million Euros.

Expert A is procurement director in a large construction company. Expert B is purchasing manager from a food industry company. Expert C is a purchasing director from a company from environmental and waste management industry. Expert D is CEO in an organization from the public sector, and expert E is CEO in a purchasing and supply management services company. Expert F is CEO in the firm which provides a purchasing and supply platform. Finally, expert G is a senior consultant who works with purchasing and supply management, logistics and operations management. Table 3 presents the summary of the Delphi panel experts.

Table 3. Summary of the Delphi panel experts.

Expert	Title	Industry	Organization	Sector
A	Supply management director	Construction	Purchasing	Private sector
B	Purchasing manager	Food industry	Purchasing	Private sector
C	Supply management director	Environmental management	Purchasing	Private sector
D	Chief executive officer (CEO)	Education services	Purchasing	Public sector
E	CEO	Services	Management	Private sector
F	CEO	ICT Services	Management	Private
G	Senior consultant	Management Consultancy	Operations Management, Purchasing and Logistics	Private

4.1.5 Description of the Interviewees

For the semi-structured interviews, four interviewees were selected to give a more practical perspective to PSM performance. Interviewee A was selected due to his consultancy position and wide comprehension of different type of purchasing and supply organizations. Interviewee B was selected because of his operational perspective and broad knowledge of everyday purchasing work. Interviewee B is category manager and works in the construction industry. Interviewee C was selected from the engineering and service industry to provide financial perspective to PSM due to his job position (controller, procurement). Interviewee D is CEO in an ICT service providing company that provides a platform for purchasing and supply management functions. Interviewee D was expected to provide tools, practices, and technologies perspective, but also overall picture of PSM. Summary of the interviewees is presented in table 4.

Table 4. Summary of the interviewees.

Interviewee	Job title	Industry	Organization	Sector
A	Senior consultant	Management Consultancy	Operations Management, Purchasing and Logistics	Private
B	Category Manager	Construction	Purchasing	Private
C	Controller, Procurement	Engineering and service	Purchasing	Private
D	Chief Executive Officer (CEO)	ICT Services	Management	Private

4.1.6 Selection and Description of the Case Company

A case company was chosen for assuring validity and reliability of this study. The selected case company is a large construction company with over 50 000 employees worldwide and turnover over 10 billion Euros. The argument for choosing this particular company as the case company is based on the size and scope of the purchasing organization. Because of the size, diverse respondent groups could be utilized for data collection to cover different

purchasing organization's levels. Respondents in the case company represented managerial level of purchasing and supply function. The respondents were divided into three groups:

1. **Purchasing leaders** – they represent sector and regional purchasing leaders who represent operational purchasing management level in purchasing organization
2. **Purchasing managers** – they represent middle management in purchasing organization
3. **Purchasing management team members** – they represent the top management in purchasing organization

4.2 Data Collection

The data collection process comprised the following three stages: 1) identifying the attributes of PSM capability and PSM tools, practices and methods that are critical in to competence, 2) validating the characteristics in interviews, and 3) assuring the reliability in the case study.

4.2.1 Stage 1: The Delphi Method Data Collection

In the stage 1 of the empirical study, research was conducted in four steps (figure 16): (1) prestudy, (2) expert panel round 1, (3) expert panel round 2, and (4) gap analysis. The step 1 is based on the information on the relevant capabilities and skills found in previous study and combined with the empirical findings from the data collected in Finland in autumn 2010 (Koivisto-Pitkänen et al., 2011).

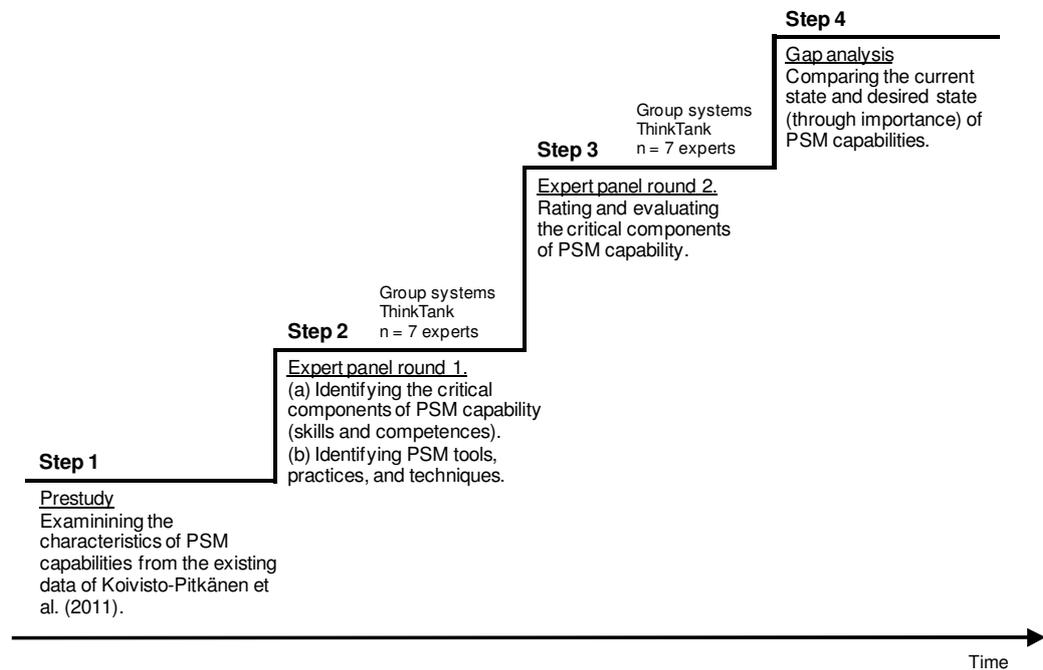


Figure 16. Research process steps in empirical research stage 1.

In step 2, the Delphi method was used to collect the insights of professionals of purchasing and supply management concerning the skills and capabilities that are required in PSM actions. The first round of the expert panel (n=7) was conducted by utilizing web-based group decision support system (Think Tank). In this stage the experts were asked to name PSM capability attributes that are important and critical to secure organization's competence. As a result, a list of capabilities and skills in mixed order and with mixed focus was gathered. After the first panel, all the mentioned capabilities and skills was read through and discussed for validation and to remove inappropriate capabilities. PSM related tools, practices, and techniques were collected for further use (see appendix 1).

In step 3, the second round of the expert panel was arranged again with the help of group decision support system (Think Tank). The same seven experts from the first expert panel (n=7) were involved. This time experts were first asked to evaluate the current level of PSM capability attributes in a Likert

scale 1-7 (1 = extremely low, 7 = extremely high). After that, participants were asked to evaluate the importance of the PSM capability attributes in future, also according to the previously mentioned a Likert scale 1-7. The both expert panels round 1 and round 2 were arranged during spring 2011.

4.2.2 Stage 2: Interviews Data Collection

In stage 2, semi-structural interviews were arranged during autumn/winter 2011. Interviews were held separately with each interviewee. Five different sub-topics were covered through five different questions:

1. Which are the critical components of PSM performance measurement?
2. Which tools, practices or methods are the most important for PSM performance in your company?
3. Which are the critical factors of PSM performance?
4. What problems are related to PSM performance?
5. How PSM performance should be developed?

Data was collected first separately from every interview, and afterwards integrated into one data.

4.2.3 Stage 3: Case Research Data Collection

The case research was conducted by web-based questionnaire, which was assessed based on the results from the empirical research stages 1 and 2. Altogether 17 responses were received from the web-questionnaire. The number of answers from each respondent group is presented in figure 17. Majority of the answers came from purchasing leaders (10 respondents). Purchasing managers gave four responds and purchasing management team members three. The data was collected during spring 2012.

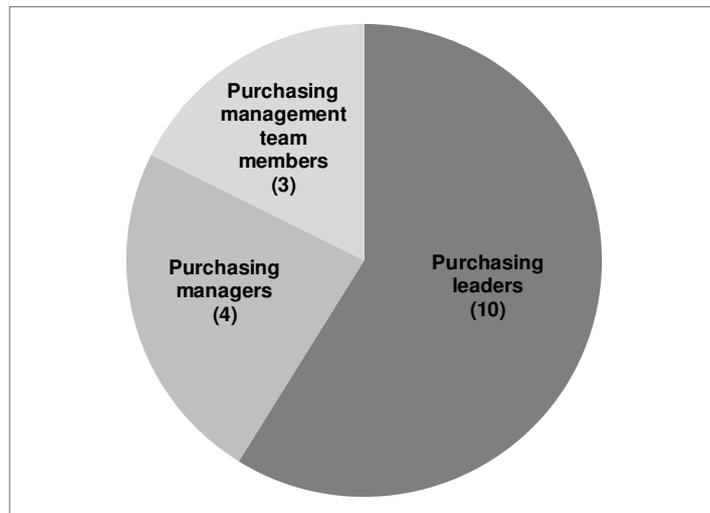


Figure 17. Description of the responds by respond group.

4.3 Data Analysis

Every data from the three research stages was analyzed first separately in each stage excluding stage 3. In stage 3, the data received from the case research were analyzed first. Sequential data analysis was then conducted by synthesis: literature review results and results from the empirical research stages 1, 2, and 3 were analyzed as compound data. The results and analysis are presented in chapter 5.

4.4 Validity and Reliability of the Study

In qualitative research is challenging to assure the scientific nature of the research (Eriksson and Kovalainen, 2008; Gibson and Miller, 1990). Therefore evaluation of the validity and reliability of the study is one of the most important parts in academic research (Eriksson and Kovalainen, 2008).

Validity describes the degree how well a study reflects the specific concept that the researcher was attempting to measure (Eriksson and Kovalainen, 2008). To achieve in-depth understanding of the phenomenon and to increase the validity of the results, methodological and data triangulation must be applied (Denzin and Lincoln, 2000; Yin, 2003). Therefore, multiple sources of evidence are suggested to use for establishing a validity and reliability of the study (Yin, 2003). In complex research topics this is a necessary procedure to adopt. According to Dubois and Araujo (2007), the use of multiple respondents makes possible to capture a variety of perceptions and meanings of complex research topics.

Reliability is the extent to which a study's operations can be repeated, with the same results (Yin, 2003; Eriksson and Kovalainen, 2008). According to Stuart et al. (2002) reliability of the study can be enhanced in two ways: firstly through a case study protocol, or secondly through maintaining a case study database. This would allow another researcher to repeat the analytical procedures, beginning with the raw data (Eriksson and Kovalainen, 2008). Using a case study protocol and developing a case study database should be conducted as they could increase the reliability of the study (Yin, 2003; Beverland and Lindgreen, 2010). Moreover, according to Ellram (1996, p. 104): "a case study protocol includes the interview guide, as well as the procedures to be followed in using the test instrument."

5 EMPIRICAL STUDY

Empirical study in this thesis is divided into three different stages (figure 18). In stage 1, the Delphi method is applied to identify PSM capabilities and skills. Aim is to get a basic aspect to the predominant situation in a national level: to identify the most common capabilities, tools and practices. Stage 1 results will set the foundation for the stage 2, where stage 1 results are utilized. In stage 2, PSM performance is studied through interviews to collect practical and complementary perspectives to PSM performance, its enablers, and critical factors. At the end of the stage 2, literature findings and empirical findings (from stages 1-2) are synthesized to validate the research results.

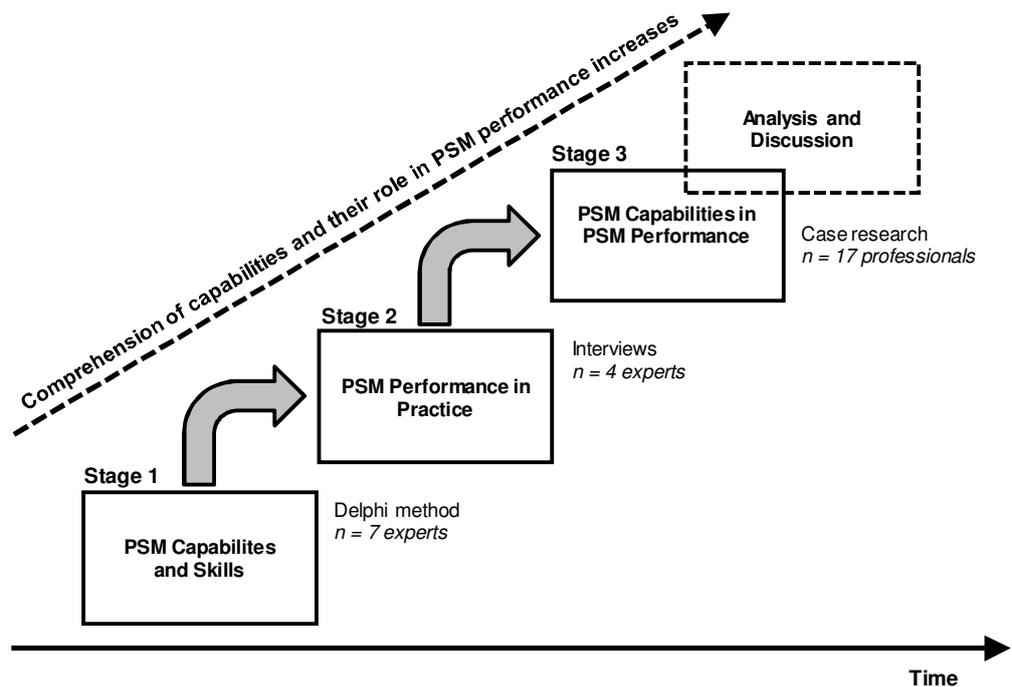


Figure 18. Empirical research process.

Next, in stage 3, based on the previous two empirical research stages, a case research is executed to get an appropriate practical aspect for the role of

PSM capabilities in PSM performance. Moreover in stage 3, reliability of the final research results' is tested. Finally, the research results is discussed and analyzed. In this chapter these stages are presented in chronological order starting from stage 1 and ending to stage 3.

5.1 Stage 1: Results from the Delphi Method

Aim of gathering PSM capabilities and skills, and executing gap research was to find out whether the capabilities in PSM are important or not. The gap research findings represent the prerequisites of the research and provide the basics for further research stages.

Altogether 29 skills were valued in the Delphi panel. The average scores of the current level and importance of PSM capabilities are gathered into table 5. The gaps between the current level and importance of PSM capability components were defined by using gap analysis. The gaps were studied exploring the average scores of both current level and importance. If the gap value is negative, there is a deficiency in the level of current skill level and in the skill importance. Vice versa, if the gap value is positive, the skill level is better than required.

The finding from the Delphi method (expert panels round one and two) is outstandingly straightforward: an obvious gap could be found in the current level of supply management skills (Figure 19). If looked at the gap between the current level of PSM capabilities (solid line) and the desired level (importance) of PSM capabilities (dashed line), an overall gap is distinctive. The largest gaps are presented in descending order in clockwise starting from Total cost analysis in top of the figure. The result indicates that capabilities: *total cost analysis, service buying, salesmanship, cross-functional awareness, leadership/management, measurement, strategic thinking, value delivery,*

general business view, supplier relationships and networks, market knowledge, and risk management are far away than they are supposed to be if regarding the importance of these capabilities.

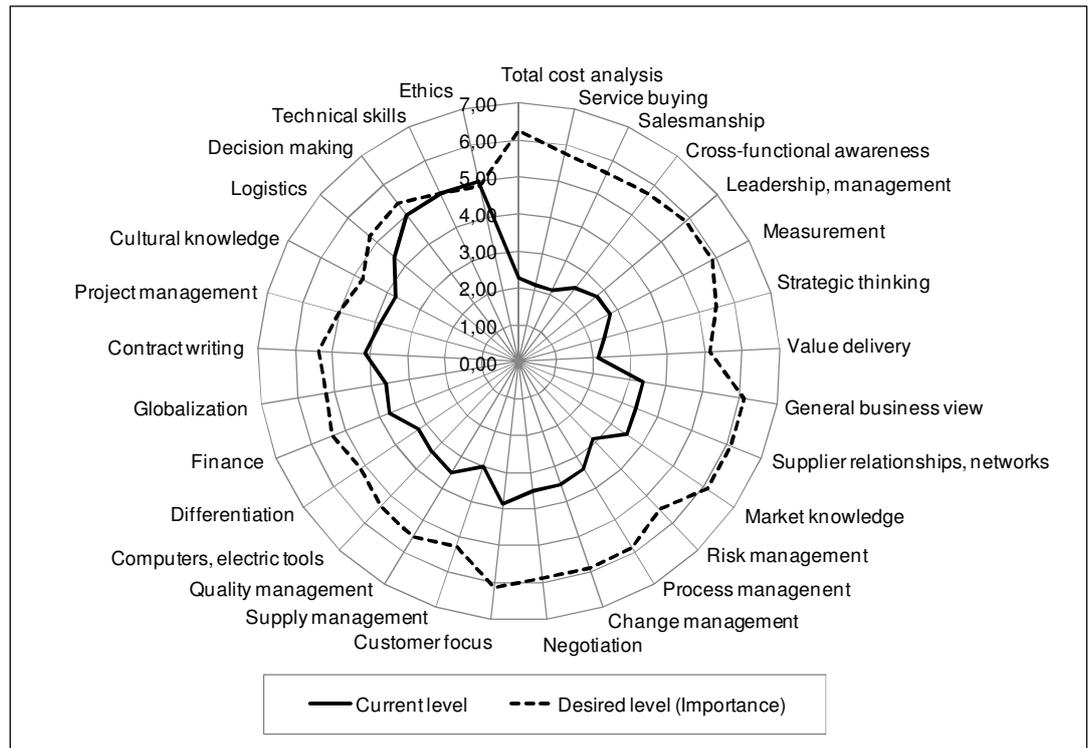


Figure 19. Gap research results.

The skill gaps are negative in almost every skill if looked at the “Gap” -column in table 5. Only two skills (*ethics* and *technical skills*) in the upper left area of the figure 19 are exceptional and do not fit into the previous statement. In ethics, a positive gap was found. It indicates better ethics related skill level than required. Instead, technical skills did not have any gap at all. It means that companies have decent technical skills in purchasing and supply organizations.

Table 5. The findings from the expert panels (The Delphi method).

PSM capability attributes	Current level	Desired level (Importance)	Gap
	Avg. Score	Avg. Score	
Total cost analysis	2,25	6,25	-4,00
Service buying	2,13	5,75	-3,63
Salesmanship	2,13	5,63	-3,50
Cross-functional awareness	2,50	5,71	-3,21
Leadership, management	2,75	5,88	-3,13
Measurement	2,75	5,88	-3,13
Strategic thinking	2,38	5,50	-3,13
Value delivery	2,13	5,13	-3,00
General business view	3,38	6,13	-2,75
Supplier relations, networks	3,38	6,13	-2,75
Market knowledge	3,50	6,13	-2,63
Risk management	2,88	5,50	-2,63
Process management	3,38	5,88	-2,50
Change management	3,50	5,88	-2,38
Negotiation	3,50	5,88	-2,38
Customer focus	3,88	6,13	-2,25
Supply management	3,00	5,25	-2,25
Quality Management	3,50	5,50	-2,00
Computers, electric tools	3,38	5,38	-2,00
Differentiation	3,25	5,13	-1,88
Finance	3,75	5,38	-1,63
Globalization	3,63	5,25	-1,63
Contract writing	4,13	5,38	-1,25
Project management	3,88	5,00	-1,13
Cultural knowledge	3,75	4,75	-1,00
Logistics	4,38	5,25	-0,88
Decision making	5,00	5,38	-0,38
Technical skills	5,00	5,00	0,00
Ethics	5,00	4,88	0,13

The calculated gaps were divided into three categories according to the gap value (Table 6) to describe the distribution of the gaps. The categories were formed subjectively by dividing the skills in reasonable sized frequencies. Among the studied 29 purchasing professional skills, remarkably large gaps could be identified in 12 skills. Medium gaps could be found in 10 skills and

small gaps in 5 skills. One skill had no gap at all and one skill had a positive gap.

Table 6. Identified gap categories.

Gap category	Gap value	Number of Skills in the category
Large gaps	-2.51 and bigger	12
Medium gaps	-1.5 to -2.50	10
Small gaps	-0.01 to -1.49	5
No gap	0.00	1
Positive gap	+0.01 and bigger	1

The largest gaps were found in total cost analysis, service buying, salesmanship, and cross-functional awareness (gap value -3.21 to -4.00). A noticeable finding is that the most important skill, total cost analysis, had the biggest gap. The trend is that the experts systematically saw other skills with big gaps very important. The most interesting medium gaps are supply management and change management. These two skills were seen relatively important (especially change management; importance 5.88), but the current level of them is seen far lower than it should be. Overall, the skills in this category fall into more common business expertise area. The skills in small gaps category represent general business skills excluding logistics and contract writing that are core skills in supply management. The importance of these skills is found to be the lowest. Only one skill attribute (ethics) were found to have a positive gap (+0.13) and one skill (technical skills) had no gap at all.

5.2 Stage 2: Results from the Interviews

In stage 2, PSM performance was studied in practice using semi-structured interview. The aim was to collect complementary information to complement

the research findings found in the previous stage, and to complement the findings of the literature study. This stage is divided into five sub-topics that represent the questions asked in the semi-structural interview research.

5.2.1 PSM Performance Components

First question was focused on critical components of PSM performance. Interviewees were asked to mention components, attributes, and factors that they know or understand to relate to PSM performance. Results from the interviews varied relatively much depending on the status of the interviewee. Interviewee A highlighted the importance of *spend* that encompass category management: performance was understood through a category management framework. According to interviewee A, the first step to understand PSM performance is to structure and define a framework so that PSM measurement and also management is possible. Framework is always company specific which indicates that it is not possible to create a one and only definition for PSM performance. According to interviewee A, PSM performance measures will emerge automatically if PSM performance framework and processes are prepared well. Appropriate approach to PSM performance framework development should be based on the company targets. In other words PSM performance framework is supposed to integrate in company's targets. Moreover, that means that the performance measures have to measure the whole PSM categories.

From the operational perspective, interviewee B underlined the meaning of savings in PSM performance. In PSM performance savings means money, contract compliance, controlling over electric tools, and overall spend and savings management. Interviewee B also stated that money is always beyond everything in PSM so it cannot be ignored in this case. Contract compliance mirrors cost effect and tendency of PSM performance: high contract

compliance indicates good PSM performance, and vice versa low contract compliance indicates low PSM performance. Utilization of electric tools also got a lot of interest. Electric tools was understood to help to manage PSM performance as data can be gathered and analyzed to get a grasp of the current performance level, and probably to create a perception from the PSM performance areas that need improvement.

Interviewee C's vast experience in both operational and strategic purchasing tended to support this study well. Interviewee C's experience, aspects, and recent change in job position provided also a financial perspective to PSM performance management. According to interviewee C, cost savings is the main internal component of PSM performance. Such internal performance areas as overall spend, cost per supplier, cost per product line, cost per region, and cost per category are crucial to form a view to PSM performance. Importance of budgeting was also mentioned. Even though the cost is considered to be extensive part of PSM performance, operational components are as important as the cost-based areas in PSM performance. The mentioned operational components were leadtime, deliveries, quality (and quality monitoring), supplier reclamations, levels of storage, and period of storage. Third larger PSM performance component focus on external performance and it was named to suppliers. Supply base, number of contracts, number of active suppliers, number of strategic suppliers, supplier audits, and suppliers' financial performance audits were the most crucial supplier related issues that are involved in PSM performance from the interviewee C's point of view. The fourth component was seen to be supply market knowledge including purchasing price follow up and product profitability follow up (indirectly). Finally, a larger perspective to PSM performance was discussed. Interviewee C named innovations and continuous improvement as the edge of development perspective of PSM performance. In some manner they have to be included in PSM performance. However, interviewee C could not clearly mention how they are supposed to

include into PSM performance because they tend to be abstractive issues. One option interviewee C proposed was that they should form the basis or the framework for PSM performance.

To get a bit different aspect to PSM performance, interviewee D was selected into this study. As interviewee D is a CEO of a PSM software company, interviewee D could provide best practice type of knowledge. In accordance with interviewee D, the first and the most important thing of PSM performance (and also in performance measurement in general) is the amount of request for quotations (RFQ). In a matter of fact, RFQs should be seen same way as sales. That is explained through offer calculations: RFQs are reverse phenomena to sales but as important because RFQs include information that sales need to know later. Another objective in PSM performance is money-based measures that provide the hard aspect of performance, cost savings. Cost savings are the major element in performance as it reveals the truth of performance and it can be applied in different ways such as cost savings per time unit, cost savings per product structure etc. In reference to the importance of cost savings, a real and strong support for cost savings measurement have to be assessed if PSM performance is aimed to monitor and/or developed. Interviewee D sees PSM performance as a cross-functional task that requires different and all-round/cross-functional skills.

5.2.2 PSM Performance Tools, Methods, and Best Practices

To find out the appropriateness of PSM performance management, the interview was structured to contain questions concerning PSM tools, methods, and best practices. This question appeared to be interesting for every interviewee because they named a wide-ranging list of tools, methods, and best practices. In spite of the vast list, one tool rose above all: spend. Spend was seen almost unanimously the most common and also the most

important tool for managing PSM performance. Three of the interviewees mentioned spend as the backbone of PSM performance. One of the interviewees emphasized that not a single method can be a backbone of PSM performance as companies and their businesses vary. However, every interviewee touched on spend and the influence of it during the interview. Even though spend was seen so important, spend by itself was not seen the answer for PSM performance management. Common view was that spend should be well executed and assessed before it is useful. If assessed well, spend will cover well all the PSM performance areas and finally can provide a decent framework for PSM performance management.

Another shared issue was electric tools. Mentioned electric tools were Enterprise Resource Planning system (ERP), Business Intelligence (BI) tools, eAuction tools, eCatalogues Supplier Relationship Management (SRM) systems, supplier scorecards, and financial systems. Another, even surprising, electric tool was Excel® (spreadsheet application). According to the interviewees Excel® has a common system status for nearly every kind of analysis and provides more flexible data handling than the specialized purchasing systems.

Interviewee A emphasized the meaning of PSM strategy beyond every action. Every tool and method is supposed to somehow contribute to the actions that complies set strategies. For example, supplier relationship management and different scorecards have to focus on embodying PSM performance targets. If thinking of best practices of PSM performance in general, operational efficiency is usually in focus and strategic focus is lagging.

5.2.3 Critical Issues and Factors of PSM performance

The question concerning PSM performance critical issues and factors was found to be extremely important among the interviewees. All interviewees saw particular importance to understand PSM performance in an organization: which factors have an effect on PSM performance and which are the most relevant to include in PSM performance framework. The result was an extensive list of important factors which require capabilities and skills, i.e. are capability and skill enabled. Factors were named from internal, external, purchasing process, and tools and technologies perspectives. As a result, a list of the most effective PSM performance factors was gathered. The list is presented below in the table 7.

Table 7. PSM performance factors – summary of the interviews.

PSM Performance Factor	Explanation	Perspective
Purchasing and supply strategy	PSM strategies must be connected to business strategy	Internal
Purchasing and supply processes	PSM processes vs. Business processes - must be harmonized	Purchasing process
Overall PSM competency	Purchasing organization leader's competence and ambitions	Internal
Framework for PSM performance	Strategic sourcing vs. Operative purchasing	Internal
Objectivity in PSM	The fundamentals of PSM performance	Internal
Purchasing and supply organization	Decentralized purchasing vs. Centralized purchasing	Internal
Industry specific issues	Contracting practices, common working principles, industry knowledge	External
Business development and change management	Change management issues in purchasing and supply organization	Internal/external
Capabilities	Human resources and skills, "right amount, right quality"	Internal
PSM tools, systems, and data	Data utilization and data management	Tools and technologies
Purchasing and supply output	Feedback to comprehend and find out the future directions	Internal

Purchasing strategy and purchasing processes were the top two PSM performance factors, and which that every interviewee emphasized. For a

company target setting is impossible if there are no plans to follow. Thus strategies and effective processes are needed to assess a framework for PSM performance. In addition, PSM processes should be harmonized with company's business processes so that the targets are clear for everybody. When strategic and process perspectives were discussed, discussions turned into competencies and skills of purchasing and supply management staff. In more detail, purchasing and supply organization leaders' competence and ambitions were regarded critical issue because leaders have a lot of effect especially on performance framework and target setting. This was seen as a problematic issue - often purchasing and supply organization leaders' competence is not adequate or there is no competence at all. In the latter case, competence is missing and there are not planned capability and competence development plans. Competence and skills of purchasing and supply managers were expected to define how well framework for PSM performance could be set.

A largely supported factor was found to be objectivity of PSM. Objectivity is not limited to purchasing and supply managerial level. Objectivity is heavily needed also in everyday purchasing and supply actions among the purchasing and supply employees. Lack of objectivity was seen to be the cause for slipping from PSM performance related targets and strategic targets. Thus the fundamental base of PSM performance is not properly designed. And moreover, PSM performance is dependent on capabilities and skills of the purchasing and supply organization. Not any system or tool will increase PSM performance if organization does not have capable and knowledgeable people. Another organizational issue that has an effect on PSM performance is the organizing of purchasing and supply function. Transformation from decentralized purchasing organization structure to centralized structure was seen to add effectiveness of the purchasing and supply work and also enhance cost controlling and cost-effectiveness.

From the external perspective, industry-specific issues were found to involve in PSM performance. Especially much attention was paid to contracting practices and common principles how to do purchasing and supply across company borders. This indicates the need for industry-specific knowledge and practices. The significance of industry knowledge and practices to PSM performance will outcome from seamless cooperation with suppliers and vendors. Another external factor affecting PSM performance understanding is the change and development of company's business and business strategies. This factor could also be reviewed from the internal perspective but interviewees saw this issue's influence coming from outside purchasing and supply organization. The strategic direction of the strategy and business development shapes PSM performance framework as purchasing and supply organization needs to react to changes and land its own new strategies that will fit to company's business strategies. This also means that PSM performance framework should include change management factor. Change management from managerial level to employee level is thus important for performance.

Capabilities as part of PSM performance was found to be a rather novel factor that not many of the interviewees emphasized because they had not thought about it. Capabilities were already mentioned in purchasing and supply organization leader level by some interviewees. However, two interviewees underlined also the importance of employee level capabilities. Company's PSM capabilities should be developed further but also lift the number and quality of the capabilities in the required level. What comes to PSM capabilities, in a company there should *"right amount, right quality"* of capabilities, as one of the interviewees explained. Therefore, identifying and developing PSM capabilities will affect PSM performance at least through baselining the capabilities company have at present. Another option is improving PSM performance by figuring out what capabilities to develop.

The factors from the technology and tool perspective were referred to purchasing tools, systems, and data management. This perspective is heavily operational as it was explained that data management, data utilization, and also proper data handling will lead to a better operational results such as time savings and useful information for decision making.

Finally, purchasing and supply output was treated as an indicator for future directions of purchasing and supply work. It means deciphering future changes in purchasing and supply work and prepare for new PSM strategies. Therefore PSM performance measurement should provide feedback to comprehend and find out which way purchasing and supply is moving in daily work. Naturally, output of daily work will provide input for restructuring and updating PSM performance framework and performance measurement metrics.

5.2.4 Problems in PSM Performance Conception

In literature study PSM performance was found to be a fragmented concept. Therefore, problems of PSM performance were asked from the interviewees to collect practical information, in other words complementary information for the literature findings. During the interviews this predominant theme was found to be true as the interviewees emphasized the lack of big picture of PSM performance and the difference in comprehension of what is actually involved in PSM performance. An interesting finding was that PSM was understood various ways, not only among the interviewees but also among the companies and in different organization levels.

Major problem was found to be processes. In more detail, different perspectives to processes were seen problematic. Usually employees think they discuss similar work issues even though those work issues are

eventually put into action in different ways. This creates an enormous problem to handle if people do not understand each other or share common practices. Moreover, these kinds of issues are seen differently, for example some employees conceive performance in its entirety but some very elaborate. That leads to situation where means to impact performance cannot be decided or even recognized. One example of this kind of problem is total cost of ownership (TCO) which often divides employees' opinions and engender problems in creating a common understanding of its meaning to performance.

What makes things even worse is the everlasting seeing things through either strategic perspective or operational perspective. This is seen as one of the biggest problems in PSM performance. PSM performance should feature not only strategic understanding but also operational know-how. Relating to the previous problem, one interviewee foregrounded that purchasing's strategic involvement and importance is not very well or at all understood in an organization. This leads to a dilemma which way to sum up PSM performance: top-down or bottom-up? This leads back to the dilemma if the performance focus should be in strategic issues or in operational issues?

One mentioned problem that precedes the previously mentioned problems is the poor level of internal actions and especially lack of cooperation. If cooperation among the purchasing employees is not in a good level, it easily will lead to misunderstanding of PSM performance. Another major problem is related to the purchasing function's position in an organization. One of the interviewees heavily underlined this problem as the major issue that interfere PSM possibilities to impact overall business performance. Common negative attitudes towards purchasing function prevent the formation and development of the perception of PSM performance framework. This is validated through the lack of power of purchasing function in a company. That means that if purchasing function cannot execute its strategies it is hard to form a PSM

performance concept what to measure. Moreover, this problem will not vanish until top management and other organization acquire and gain PSM knowledge. In other words, this means that purchasing function needs to give its reasons to its existence in an organization.

During the interviews, every interviewee mentioned the difficulties in data management and proper utilization of systems. This refers to capabilities and skills issues like one of the interviewees summarized. Mentioned antecedents to this problem were fragmented data, lack of collaboration, and lack of information sharing. Gathered and available data is not usually trustworthy and coherent which leads to the misrepresentation of results. Organizations have several systems in use simultaneously, which is partly the reason for non-coherent data. Data processing also becomes more difficult as data must be gathered from several systems. Therefore data processing is usually done in spreadsheet applications (e.g. Excel®).

PSM performance measurement was also mentioned as a significant problem. Interviewees shared a common opinion towards measurement as they all criticized too extensive measurement system and the enormous number of measures. In addition, in most cases PSM performance measures are not related to each other and even worse “hard” and “soft” measures are mixed. What seems to lead to this problem is the unawareness of the meaning of the measurement – PSM performance is not well understood concept and thus the enabling factors of PSM performance are lacking. Another lacking issue is inadequate target setting. PSM performance does not include the targets that create the framework for the measurement and measures assessment. One interviewee mentioned that PSM measurement systems are often built through feeling not through knowledge, which makes measurement systems unpractical or reasonable. That is why PSM performance includes partial optimization which makes the level of

understanding PSM performance and PSM meaning and importance to a company worse.

5.2.5 Suggestions for PSM performance Improvement

The most common and shared vision for PSM performance development is linked to company's purchasing and supply resources. In companies these purchasing and supply resources should be adequate and high quality. Every interviewee agreed that current purchasing and supply related problems in companies originate from the lack of appropriate resources. One interviewee highlighted purchasing and supply education and minimum knowledge of basic issues in purchasing. Developing purchasing and supply staff would lead a better understanding of PSM and PSM performance. In addition, management staff's purchasing and supply knowledge are seen rather low which creates problematic behavior towards purchasing and supply. In this case, developing management's PSM understanding would lead to better results. At least purchasing and supply employees should get help from other organization units to handle the work that often contains change management tasks. Thus the overall purchasing and supply awareness should be fostered in an organization. One interviewee also added that communication among purchasing and supply staff should be enhanced to stick with the set strategies and targets. This yields cooperation and leadership.

Another PSM performance improvement suggestion was that objectivity in PSM is needed much more. This means that purchasing and supply employees should focus on individual needs and find out the appropriate solutions to solve problems. The increase in objectivity requires relatively much effort from the employee and ability to question common practices. In a high level this means change in attitudes and understanding causality in purchasing and supply tasks so that PSM performance could be understood.

Related to that, renewal of mindset is needed as purchasing and supply is not and should not be understood as same as buying. This issue is also understood to require skillful and knowledgeable employees and resources. If purchasing and supply employees are able to increase their objectivity in their work it will lead to a better understanding of employee's own contribution to overall work, i.e. PSM performance.

Purchasing and supply data and data systems was found to be one of the top development issues in PSM. Purchasing and supply data is usually not accurate and hard to access because the existence of multiple systems. Data management is needed for exploiting data for decision making and conclusions. A solution, suggested by two interviewees, could be one unified data system or decreasing the number of systems. This could have an effect on PSM performance improvement if purchasing and supply employees could get easily the most out of the purchasing and supply data and find information that is connected to PSM performance. Third large development idea is related to PSM status in an organization. PSM is not seen to have a link to result making business units. So that PSM would not remain a separate function, organization's processes are needed to standardize. The first step to increase PSM status is to map processes and unify them with organization's units. In this occasion strategic and operational purchasing is needed to separate so that other organization would see and understand that PSM can provide much more than serving organization only as an internal service unit. This development step requires PSM framework where strategic and operational purchasing and supply is distinguished.

5.3 Synthesis of Theoretical and Empirical Research Findings: Incorporating PSM Capabilities into PSM Performance

Research findings were synthesized in two phases. Validating the research results began with the comparative study and synthesizing the literature study findings and empirical study findings. The PSM factors and capabilities found in the literature study and in the empirical research stage 1 (the Delphi method), were compared to involve the practical perspective to the found PSM capabilities and skills found in literature study (figure 20).

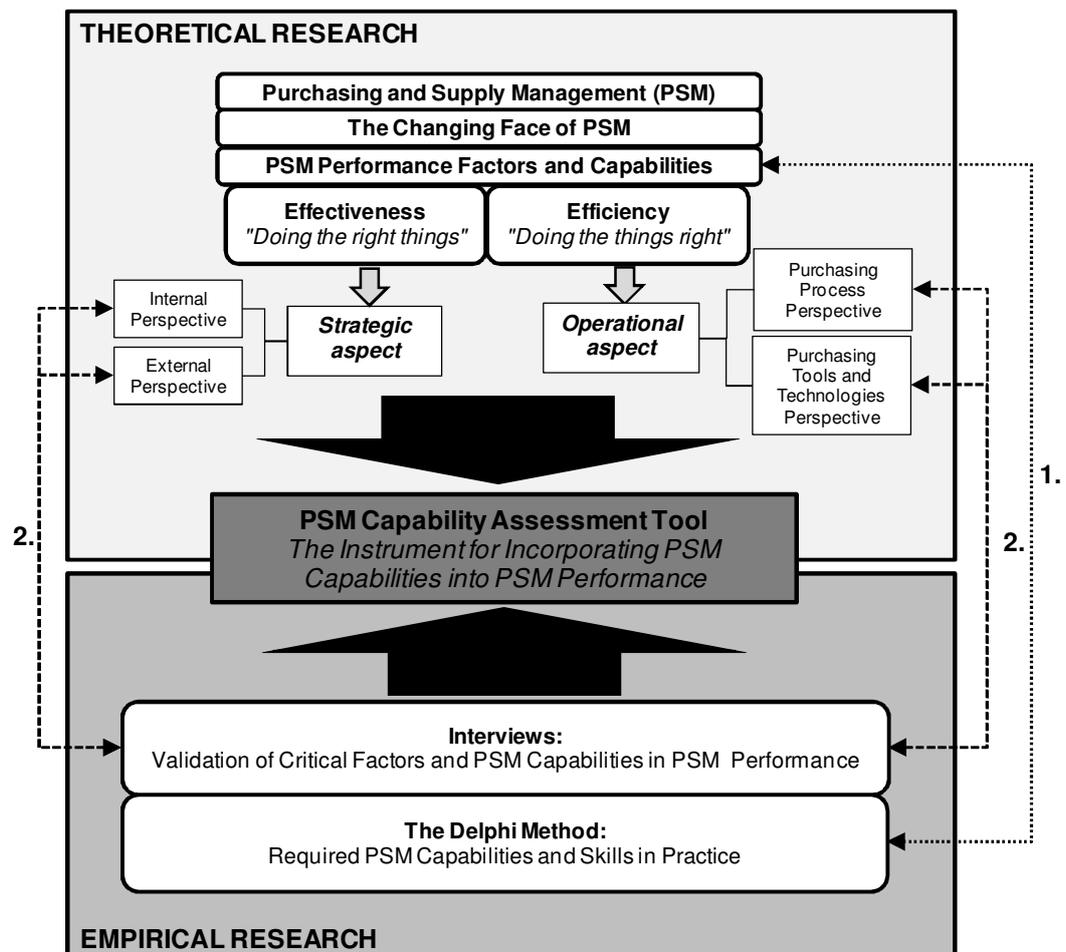


Figure 20. The synthesis of theoretical and empirical research findings.

As a result, the comparison strengthened the capability perspective. The results from the interviews retold the PSM capability attributes found in the literature study because the interviewees saw the same kind of similarity between PSM performance factors and PSM capabilities. This validation process provided synthesis of the both theoretical and empirical research results (table 8).

Table 8. Pre-results from the synthesis.

	Literature	Research Step 1 Results*	Research Step 2 Results
Internal perspective	Strategic involvement, purchasing integration	Strategic thinking	PSM Framework
	Strategic management focus and orientation	Decision making	Category management
	Cost reduction, cost leadership	Finance	Cost, cost controlling
	Total cost of ownership	Total cost analysis	Cost-effectiveness ("TCO")
	Price		
	Controlling		Budgeting
	Risk management	Risk management	
	Planning	Measurement	Target setting
	Purchasing's organizational structure	Cross-functional awareness	Organization (strategic vs. operational)
	Supplier capability auditing		Supplier auditions, supplier scorecards
		Contract writing	Contract compliance
	Innovation and new product development		Innovation
		Change management	Change management
		Leadership, management	Leadership
	Resources, capabilities, purchasing skills	Supply management	Knowledge, skills, capabilities
	Processes, policies, process improvement	Process management	Purchasing processes
	Communication, information exchange		Communication
			Cooperation
			Objectivity
			Spend, financial systems
			Savings
			Continuous improvement
		Benchmarking	
			Ethics
			General business view
			Salesmanship
		Differentiation	
		Cultural knowledge	
		Project management	
		Service buying	
External perspective	Supplier relationships	Supplier relations, networks	Supplier relationship management
			Suppliers' financial performance
			Supplier orientation
	Supply base optimization		Number of suppliers
		Market knowledge	Supply market knowledge
	Quality monitoring	Quality Management	Quality
	Value creation, added value	Value delivery	
Purchasing process perspective	Customer perspective	Customer focus	
		Globalization	
	Logistics	Leadtimes	
Delivery and leadtimes		Deliveries	
		Request for Quotations (RFQ)	
		Storages (levels and period)	
		Reclamations	
	Negotiation		
Tools and Technologies Perspective			Common practices
			Enterprise Resource Planning system (ERP)
		Computers, electric tools	eSourcing tools
			Excel®
			Data management
	Technical skills		

*research results presented in appendix 1 are not included in this table

Secondly, the synthesis results (table 8) was utilized in the next phase where PSM performance aspects found in the literature study (strategic and operational aspect) was compared with the research results from the empirical research stages 1 and 2. This time the research results from the empirical research stage 1 (appendix 1) were involved in the synthesis. The aim was to complement the literature findings with empirical findings to get an appropriate, more systematic, and comprehensive understanding to the role of capabilities in PSM performance framework presented in chapter 3. This was an explorative comparison that combined the PSM performance framework results with PSM performance perspectives found in the empirical research (internal, external, purchasing process, and purchasing tools and techniques perspectives). This study indicated that found PSM performance factors are strongly connected to resources that were seen as enablers of PSM performance.

However, some inconsistencies were found. An interesting observation from the interviews was that such PSM performance topics as total cost of ownership, taking advantage of supplier markets, innovation and R&D cooperation with suppliers was not discussed very much. Instead, those factors were found to be important in literature study and also in the gap analysis in Stage 1. An explanation for that might be the lack of common understanding what these factors mean. Especially total cost of ownership was seen problematic among the interviewees. In conclusion, validation of the results strongly associated with the PSM capabilities found in the literature study.

The result of the synthesis, in summary, is the PSM performance framework that is founded on internal perspective, external perspective, purchasing process perspective, and purchasing tools and technologies perspective (table 9). These perspectives are divided further into subcategories which include the critical capabilities of PSM performance.

Table 9. Final results from the synthesis.

INTERNAL PERSPECTIVE	PURCHASING PROCESS PERSPECTIVE
Purchasing Strategy	Purchasing Process
Purchasing's strategic focus and strategic orientation	Request for quotations (RFQ)
The integration of purchasing into corporate strategy	Purchase orders
Purchasing target setting	Competitive bidding, supplier competitions
Purchasing's organizational structure (operational separated from strategic)	Delivery reception
Internal communication	Payment transactions
Internal customer satisfaction monitoring	Claims and reclamations
Product and service categorizing (e.g. critical, volume, etc.)	
Understanding end customer needs (e.g. need definitions and mapping)	
Cost Management	PURCHASING TOOLS AND TECHNOLOGIES PERSPECTIVE
Total cost thinking	Purchasing Tools and Technologies
Spend analysis	Information systems integration with suppliers information systems
Lifecycle costs	Financial tools (e.g. Spend)
Budget and budgeting	eAuctions (in sourcing)
Working capital follow-up and monitoring	SRM-tools
Target cost calculation	ERP
Purchasing Development	eCatalogues
Innovations and new product development	Product data management
Purchasing process and operations development (e.g. benchmarking)	Business Intelligence
Quality management, quality thinking	Excel®
Human resources and capabilities development	
Product/service descriptions	
Purchasing Controlling	
Risk management	
Contract management and contract compliance	
Code of conduct compliance	
EXTERNAL PERSPECTIVE	
Supplier Relationship Management	
Supplier categorizing (e.g. portfolio analysis)	
Supplier base optimization	
Supplier network risk analysis	
Supplier capability auditing	
Supplier selection	
Supplier development	
Supplier Performance Measurement	
Delivery monitoring	
Quality auditing (e.g. supplier audits)	
Cost analysis (e.g. open book accounting)	
Service level agreements	
Supplier Orientation	
External communication	
Supply market knowledge (e.g. price analysis, supply market research)	
Reverse marketing	

Even though the validation had provided a structured perspective to the PSM performance related capabilities, research results did not indicate the relationship and interrelationship between PSM capabilities and PSM performance. Therefore, a need for incorporating the theoretical study findings and empirical research findings emerged. For that purpose an instrument that connects PSM capabilities and PSM performance was structured for analyzing PSM maturity from the capability perspective and for evaluation of how capabilities can contribute PSM performance.

For the instrument, that assess PSM capabilities and incorporate them into PSM performance, the scale for PSM's current situation evaluation was adapted from maturity model of Axelsson et al. (2006, p. 163). The scale consists of the following four levels:

1. **Rookie level:** Skill/capability is new and purchasing organization has no experience in applying the skill/capability in practice.
2. **Basic level:** Purchasing organization has basic knowledge about the skill/capability and has some experience in applying skill/capability in practice on small scale.
3. **Senior level:** Purchasing organization has almost full knowledge of the skill/capability and is experienced applying the skill/capability in practice.
4. **Expert level:** Purchasing organization has full knowledge of the skill/capability and is very experienced in successfully applying the skill/capability in practice.

The second step was to set up dimension for exploring the role and impact of the capabilities on PSM performance. The focus of this dimension is to evaluate the importance of a capability so that it would indicate the impact of a capability on PSM performance. The impact on PSM performance was structured using Likert scale 1-4 (1=Not at all, 2=Low, 3=Mediocre, 4=High). As a result, these two dimensions were attached to the validated list of PSM capabilities. This structured PSM capability assessment tool is presented in table 10.

Table 10. PSM Capability Assessment Tool.

INTERNAL PERSPECTIVE	PSM Maturity - Current level				Importance - Impact on PSM performance			
	Rookie	Basic	Senior	Expert	Not at all	Low	Mediocre	High
Purchasing Strategy								
Purchasing's strategic focus and strategic orientation								
The integration of purchasing into corporate strategy								
Purchasing target setting								
Purchasing's organizational structure (operational separated from strategic)								
Internal communication								
Internal customer satisfaction monitoring								
Product and service categorizing (e.g. critical, volume...)								
Understanding end customer needs (e.g. need definitions and mapping)								
Cost Management								
Total cost thinking								
Spend analysis								
Lifecycle costs								
Budget and budgeting								
Working capital follow-up and monitoring								
Target cost calculation								
Purchasing Development								
Innovations and new product development								
Purchasing process and operations development (e.g. benchmarking)								
Quality management, quality thinking								
Human resources and capabilities development								
Product/service descriptions								
Purchasing Controlling								
Risk management								
Contract management and contract compliance								
Code of conduct compliance								

EXTERNAL PERSPECTIVE	PSM Maturity - Current level				Importance - Impact on PSM performance			
	Rookie	Basic	Senior	Expert	Not at all	Low	Mediocre	High
Supplier Relationship Management								
Supplier categorizing (e.g. portfolio analysis)								
Supplier base optimization								
Supplier network risk analysis								
Supplier capability auditing								
Supplier selection								
Supplier development								
Supplier Performance Measurement								
Delivery monitoring								
Quality auditing (e.g. supplier audits)								
Cost analysis (e.g. open book accounting)								
Service level agreements								
Supplier Orientation								
External communication								
Supply market knowledge (e.g. price analysis, supply market research)								
Reverse marketing								

PURCHASING PROCESS PERSPECTIVE	PSM Maturity - Current level				Importance - Impact on PSM performance			
	Rookie	Basic	Senior	Expert	Not at all	Low	Mediocre	High
Purchasing Process								
Request for quotations (RFQ)								
Purchase orders								
Competitive bidding, supplier competitions								
Delivery reception								
Payment transactions								
Claims and reclamations								

PURCHASING TOOLS AND TECHNOLOGIES PERSPECTIVE	PSM Maturity - Current level				Importance - Impact on PSM performance			
	Rookie	Basic	Senior	Expert	Not at all	Low	Mediocre	High
Purchasing Tools and Technologies								
Information systems integration with suppliers information systems								
Financial tools (e.g. Spend)								
eAuctions (in sourcing)								
SRM-tools								
ERP								
eCatalogues								
Product data management								
Business Intelligence								
Excel®								

5.4 Stage 3: Results from the Case Research

In stage 3, aim was to study the role of PSM capabilities in PSM performance in a sophisticated way. The role of capabilities was studied in a selected case company so that the reliability of the research would be assured. For that purpose the capability assessment tool, structured in the previous stage (stage 2), was implemented in a case company to collect data. Next is introduced the maturity results and after that the importance of PSM capabilities on PSM performance.

5.4.1 PSM Capabilities Maturity

The maturity results from the PSM capability assessment tool are presented in table 11. In total, PSM capabilities average score was 2.37 which means overall somewhat better than basic level. The most matured capabilities were found relate to purchasing controlling (avg. score 2.75), purchasing process (avg. score 2.71), and purchasing strategy (avg. score 2.65). The lowest maturity was found in the capabilities related to supplier performance (avg. score 2.07), and purchasing tools and techniques (avg. score 2.08).

Table 11. Current level of capabilities in the case company including different respond group scores.

Perspective	Capability category	Purchasing Leaders (avg. score)	Purchasing Managers (avg. score)	Purchasing Management Team Members (avg. score)	Total (avg. score)
Internal	Purchasing Strategy	2,68	2,55	2,70	2,65
	Cost Management	2,40	2,25	2,41	2,36
	Purchasing Development	2,22	2,30	2,13	2,22
	Purchasing Controlling	2,87	2,42	2,78	2,75
External	Supplier Relationship Management	2,27	2,17	2,22	2,24
	Supplier Performance Measurement	2,10	1,94	2,17	2,07
	Supplier Orientation	2,10	2,09	2,11	2,10
Purchasing process	Purchasing Process	2,65	2,54	3,11	2,71
Purchasing tools and technologies	Purchasing tools and technologies	1,94	2,26	2,31	2,08
				Total	2,37

Results indicate a rather small difference in maturity. The overall maturity level is between basic and senior levels. Due to the results, it can be argued that capabilities are pretty well governed in the case company. Figure 21 illustrates the differences between the respondent groups: *purchasing leaders, purchasing managers, and purchasing management team members*. Purchasing management team members saw that purchasing process related capabilities were the best governed in the company. In addition, these capabilities were understood to be the only capabilities that are in the senior level. Instead, purchasing leaders and managers saw purchasing controlling capabilities as the best handled capabilities. However, purchasing leaders and managers ranked purchasing process related capabilities as the second best.

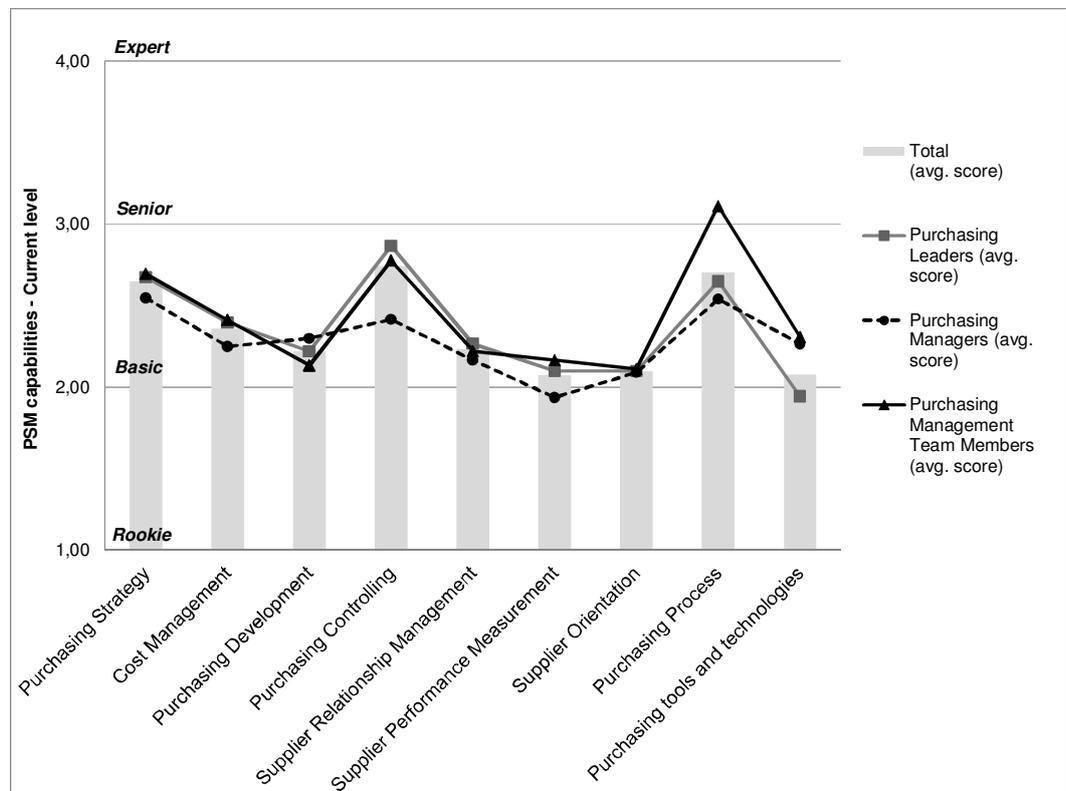


Figure 21. Current level of capabilities presented within different respondent group scores.

Table 12 below depicts the detailed results from the maturity part of the PSM capability assessment tool. The top 10 currently well adopted capabilities mostly belong to internal perspective (code of conduct compliance, purchasing's strategic focus and strategic orientation, total cost thinking, contract management and contract compliance, understanding end customer needs, and purchasing target setting). Three capabilities from purchasing process perspective (request for quotations (RFQ), competitive bidding/supplier competitions, and purchase orders) gained the top 10. Only one capability from tools and techniques perspective, Excel®, was understood to be governed well in the case company.

Table 12. Top 10 governed PSM capabilities in the case company.

PSM Capability	PSM Maturity - Current level (avg. score)
Code of conduct compliance	3,29
Request for quotations (RFQ)	3,24
Purchasing's strategic focus and strategic orientation	3,00
Competitive bidding, supplier competitions	2,94
Excel®	2,82
Total cost thinking	2,81
Contract management and contract compliance	2,76
Understanding end customer needs (e.g. need definitions and mapping)	2,76
Purchasing target setting	2,76
Purchase orders	2,76

These top 10 capabilities were evaluated to basic/senior level as the average score ranged from 2.76 to 3.29. From the external perspective capabilities none could make into the top 10 which indicates that supplier-related capabilities in the case company are not very matured. If looked these capabilities in more detail from the appendix 2, the low scores can be seen to stuck near basic level (score 2.0). Otherwise, the top 10 results indicate strong know-how in strategy- and process-related capabilities.

5.4.2 PSM Capabilities Importance - Impact on PSM Performance

Overall findings from the case research heavily indicated the high impact of PSM capabilities on PSM performance (table 13). Every capability category got relative high evaluations, over 2.50 (see table 13). In its entirety, PSM capabilities impact on PSM performance was 3,30 (average score). This indicates strong relationship between capabilities and PSM performance. Moreover, due to these results it can be argued that capabilities are critical to PSM performance.

Table 13. Impact of PSM capabilities on PSM performance in the case company.

Perspective	Capability category	Purchasing Leaders (avg. score)	Purchasing Managers (avg. score)	Purchasing Management Team Members (avg. score)	Total (avg. score)
Internal	Purchasing Strategy	3,48	3,65	3,17	3,46
	Cost Management	3,24	3,33	3,18	3,25
	Purchasing Development	2,94	3,10	3,07	3,00
	Purchasing Controlling	3,73	3,58	3,44	3,65
External	Supplier Relationship Management	3,29	3,54	2,67	3,24
	Supplier Performance Measurement	3,43	3,38	3,00	3,34
	Supplier Orientation	3,03	3,09	2,56	2,96
Purchasing process	Purchasing Process	3,20	3,67	3,67	3,39
Purchasing tools and technologies	Purchasing tools and technologies	2,82	3,14	2,59	2,86
				TOTAL	3,30

Purchasing controlling related capabilities were found to be the most important for PSM performance (avg. score 3.65). Purchasing strategy capabilities were found to be the second important (avg. score 3.46), purchasing process capabilities the third important (avg. score 3.34), supplier performance measurement capabilities the fourth important (avg. score 3.34), and cost management capabilities the fifth important (avg. score 3.25). However, supplier relationship management capabilities were found very close to cost management with average score of 3.24. Purchasing

development capabilities gained prompt mediocre importance (avg. score 3.0). Under 3.0 avg. score got only supplier orientation capabilities (avg. score 2.96) and purchasing tools and technologies capabilities (avg. score 2.86).

The overall research results are presented in figure 22. Some significant differences were found among the three respondent groups. The found differences tended to concentrate on supplier-related capabilities.

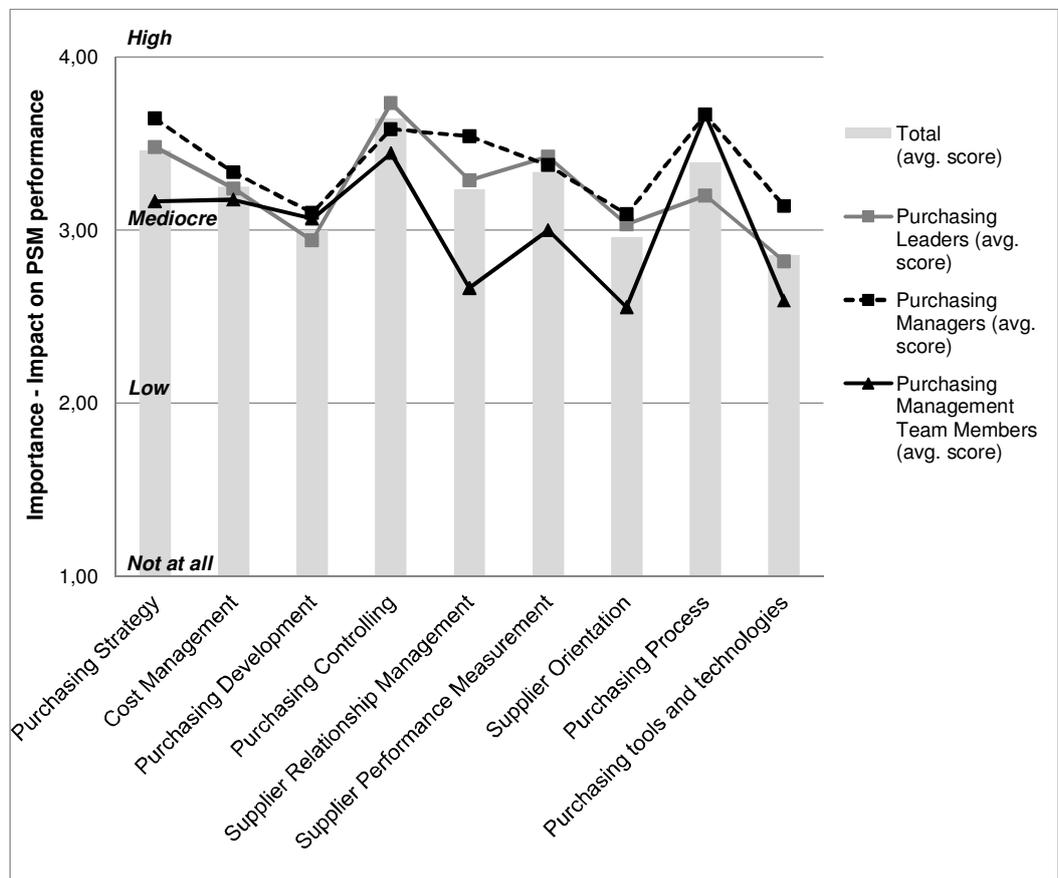


Figure 22. The impact of capabilities on PSM performance within different respondent group scores.

Supplier related capabilities were seen to have lower impact on PSM performance if looking purchasing management team member's average

scores: supplier relationship management avg. score was 2.67, supplier performance measurement avg. score was 3.00, and supplier orientation avg. score was 2.56. Instead, purchasing leaders and managers perceived more impact on those capabilities (supplier relationship management avg. score 3.29/3.54, supplier performance measurement 3.43/3.38, and supplier orientation 3.03/3.09). Purchasing tools and technologies related capabilities also divided opinions a little. Purchasing leaders and purchasing management team members regarded those capabilities' impact low/mediocre (avg. scores 2.82 and 2.59), whereas purchasing leaders regarded those capabilities to have slightly over mediocre impact (avg. score 3.14).

Table 14 demonstrates the role of capabilities in PSM performance. The top 10 most important capabilities in PSM performance were select to demonstrate that the most important capabilities were not divided evenly according to the four performance perspectives.

Table 14. Top 10 PSM capabilities affecting PSM performance.

PSM Capability	Importance - Impact on PSM performance (avg. score)
Contract management and contract compliance	3,82
Total cost thinking	3,81
Understanding end customer needs (e.g. need definitions and mapping)	3,76
The integration of purchasing into corporate strategy	3,76
Request for quotations (RFQ)	3,71
Human resources and capabilities development	3,71
Risk management	3,71
Purchasing target setting	3,65
Supplier selection	3,65
Purchasing's strategic focus and strategic orientation	3,63

The majority of the most important capabilities were related to the internal perspective (contract management and contract compliance, total cost

thinking, understanding end customer needs, the integration of purchasing into corporate strategy, human resources and capabilities development, risk management, purchasing target setting, purchasing's strategic focus and strategic orientation). From external and purchasing process perspectives only two capabilities were rated into top 10. From external perspective, only supplier selection (avg. score 3.65) reached top 10. Same was in purchasing process perspective where Request for Quotations (RFQ) (avg. score 3.71) was the only capability to reach top 10. A noteworthy finding is that from purchasing process perspective not any other capability reached the top 10. If compared these results with the current state results, the results indicate that purchasing process is currently well governed and therefore respondents could not see it so important for PSM performance.

5.4.3 Managerial Implications for PSM performance Improvement

For the future development, the most important capabilities affecting PSM performance was studied using gap analysis. The overall results (appendix 3) reveal diverse gaps ranging from 0.12 to 1.53 (avg. scores). To demonstrate the most important capabilities due to the need of development, the ten most important gaps were examined. These top 10 capabilities that require development are presented in figure 23 that contains not only the most important capabilities affecting PSM performance but also the most important capabilities to develop in the case company. The largest gap was found in risk management (gap value 1.53). This is a noteworthy finding as risk management has not emerged in previous research results or any particular interest has not fallen upon it during the study. However, the gap analysis results implicates that risk management should be developed and requires efforts in future. Another significant finding is supplier related capabilities such as delivery monitoring, quality auditing, and supplier development. These capabilities were the most underrated capabilities in reference to purchasing

management team members perceptions (see figure 22), but now these supplier-related capabilities emerged in this context as one of the most important development targets. Moreover, purchasing tools and technologies related capabilities were also noticed to contain potential for development as SRM tools and information systems integration with suppliers' information systems. What makes these particular capabilities significant is that they are strongly related to supplier-related capabilities.

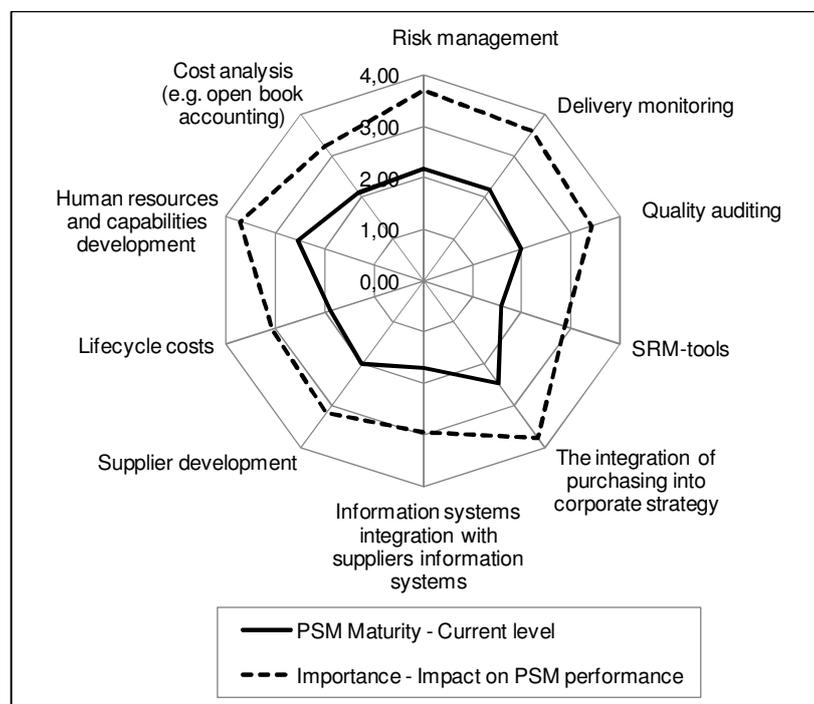


Figure 23. Top 10 the most important capabilities influencing PSM performance.

Important strategic capabilities such as the integration of purchasing into corporate strategy, lifecycle costs, human resources and capabilities development, and cost analysis (e.g. open book accounting) should also reckon in if PSM performance is aimed to enhance. From the development perspective, the presence of human resources and capabilities in this gap analysis results strengthen the study objectives of this whole research: capabilities are critical to PSM performance.

6 CONCLUSIONS

This thesis presents an extensive literature review that presents the theory framework for purchasing and supply management (PSM) performance and its critical factors. Due to multi-dimensional and unstructured nature of PSM and PSM performance, PSM evolution, history, development, and trends were researched to sum up the appropriate conception to PSM performance. In empirical research, as the core of this study, PSM related perspectives of performance were explored and established. Moreover, capability perspective was incorporated into PSM performance through critical factors. This research presented a systematic way to measure PSM related capabilities and their impact on PSM performance.

6.1 The Main Results of the Study

Literature study findings emphasized increased strategic nature of PSM. Strategic alignment of PSM indicated that capabilities and resources, in reference to resource-based view of the firm (RBV) and resource dependency theory (RDT), are the standpoint for company objectives. In other words, PSM performance should be thought through capabilities. In modern turbulent business it is relevant to utilize existing resources to improve PSM performance, as PSM performance dimensions, efficiency and effectiveness, represent different competencies and capabilities of the purchasing function. Therefore capabilities, in reference to resource-based view of the firm (RBV) and resource dependency theory (RDT), contain potential and offer future focus for competitiveness. Modern performance management must thus be multi-dimensional, including strategic and operational measures, financial and non-financial measures, leading and lagging indicators, and standard and flexible targets.

The first stage of empirical research provided the comprehension to the PSM capabilities and their current level in a national level. Further, these capabilities were studied more through gap analysis that revealed the straightforward result: PSM capabilities are far away from the level they should be in. Major gaps were found in total cost analysis, service buying, salesmanship, and cross-functional awareness amongst others. The found gaps had particular characteristics: capabilities that fell into major gap category are relatively abstract and novel for purchasing and supply employees. Instead, capabilities in medium gap category were related to common business expertise area, and capabilities in the small gap category represent general business skills. That indicates that PSM capabilities have not evolved within the PSM evolution and development. The maturity of the PSM is not yet in a required level, which indicates lack of strategic aspect and also lack of leadership.

In the empirical research stage 2, aim was to study the feasibility of the current literature by exploring the opinions and sights of the experts. The main research result from the empirical research stage 2 was the validation of the PSM capabilities as critical factors of PSM performance. This was achieved through complementing research findings from the literature and empirical findings creating the synthesis. As a result from this synthesis, the PSM capability assessment tool was structured. At this point, a holistic approach to PSM capabilities and their relationship to PSM performance were incorporated. Interviewees gave perceptions to PSM critical factor and to capabilities. PSM capabilities were seen as enablers of PSM performance. Contribution of the capabilities to PSM performance was also understood through four perspectives, internal, external, purchasing process, and tools and technologies perspectives. These perspectives represent modern and more strategy focused PSM where business boundaries are dimmed and work has become supplier related. Another implication is the increased

importance of common understanding of PSM, cooperation, data and data systems utilization, and common effective practices and tools.

In stage 3, the PSM capability assessment tool was implemented in the case research to attain an objective and more sophisticated perspective to the role of PSM capabilities in PSM performance. Again, PSM capabilities were found to be enabling factors of PSM performance. PSM capabilities were also understood to have strategic bonds and their importance was understood in different purchasing and supply organization managerial level. As the empirical research results were incorporated into the theoretical research, the validity and reliability of the study were assured. Summary of the entire empirical research is presented in figure 23.

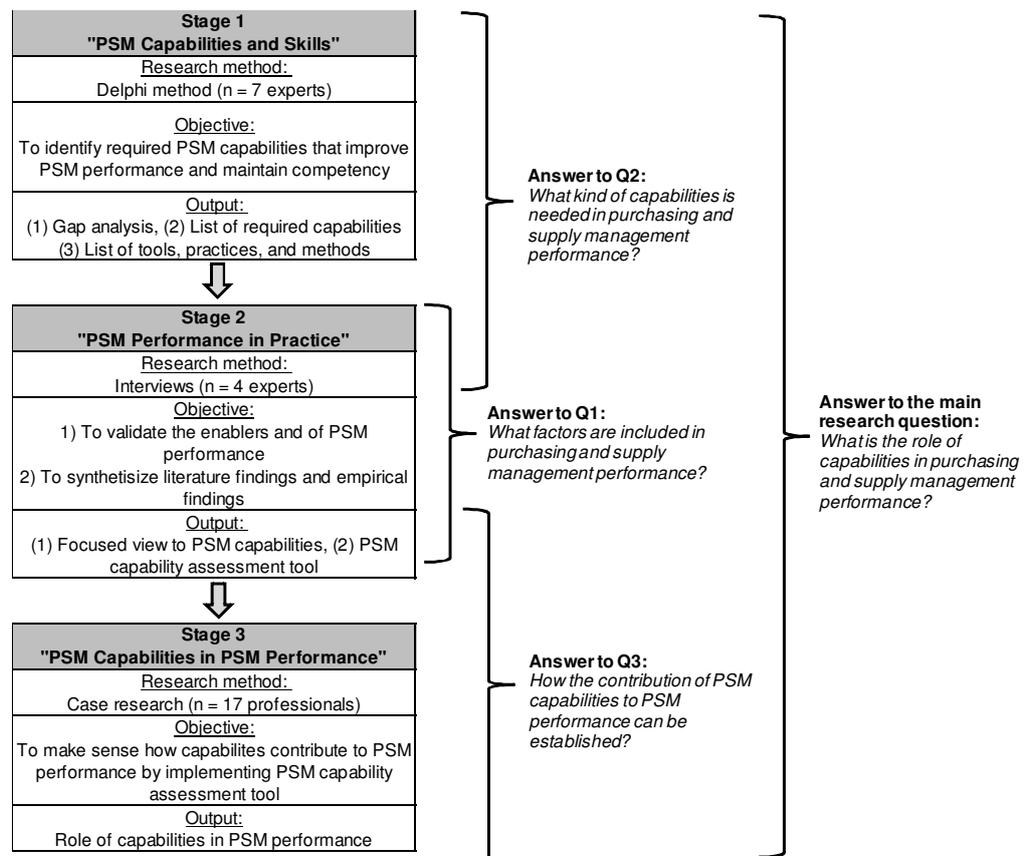


Figure 24. Summary of the empirical research.

In its entirety this study presented the systematic way to assess a PSM capability measurement tool and process how to measure the level/maturity of capabilities and their impact on PSM performance. As the main research result the capabilities' impact on PSM performance was established and tested in a case company. Case research results the PSM capability assessment tool strengthened role of capabilities in PSM performance.

In conclusion, PSM capabilities are relatively new phenomenon and not confessed much in research yet. Usually operational issues are upon capabilities when performance issues are researched. However, the evolution and development of PSM indicates increasing interest into capabilities as PSM is achieving more strategic role in companies. Future trends also support the strategic rise of the PSM, and in this occasion PSM capabilities and resources in general, will have a bigger role not only in maintaining but also in enhancing company's competence and competitive advantage.

6.2 Limitations of the Study and Suggestions for Future Research

The major limitation of this research is related to the sample population. This study was limited to identify PSM capabilities based on seven experts' opinions. In addition, the validity and reliability were tested with only four interviewees. Reliability was tested in a case company with 17 respondents. This limits extrapolating the research results to the general level. However, a common comprehensive grasp of the role of capabilities in PSM performance could be established. A larger sample could present more accurate results. In addition, the last empirical research stage included only 'top-down' perspective to the capabilities and their role in PSM performance as respondents represented only managerial level of purchasing and supply. Therefore, 'bottom-up' approach should be executed to get the employee-level perspective to role of capabilities in PSM performance.

In reference to previous, a suggestion for future research is to implement PSM capability assessment tool in employee-level to collect data for comparing managerial- and employee level perceptions. This should give a complementary results and therefore more comprehensive results. Another suggestion for future research is to research PSM performance impact on company's business performance as it is widely recognized that PSM can influence different aspects of business performance (Carter et al., 2005, p. 17; Ellram and Liu, 2002, p. 35). Therefore, an interesting and natural continuum for this study would be a study that would concentrate on PSM's contribution to business performance and company's competitive advantage. The interrelationship between PSM performance and company performance would support the previous research findings: PSM have already found to have a direct impact on firm's profitability (Carr and Pearson, 2002, p. 1043; Chen et al., 2004, p. 513). Moreover, complementary information from the importance of PSM is needed to expand the understanding of PSM's possibilities to affect profitability. In addition, if PSM can increase profitability, in turn it will most likely have a positive impact on shareholder value also (Ellram and Liu, 2002, p. 32; Ellram et al., 2002, p. 7). Therefore, the future research should focus on such research topic that can possibly present interesting information for decision making in a company, not only in purchasing and supply function. This future research requires quantitative research methods so that the research could provide comprehensive results.

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APPENDICES

APPENDIX 1: Extensive research results from the Delphi Method.

PSM TOOLS, METHODS, PRACTICES, CAPABILITIES

Total costs
Transaction costs
Lifecycle costs
Cost breakdown and partial analysis
Partial optimization reduction
Finance and stakeholders integration into PSM
Cooperation with product development
After sales
Business skills
PSM employees' work rotation
General procurement knowledge dissemination
Training and education
Processes definition and compliance
Supplier relationship awareness
Continuous processes
Supplier categorizing
Supplier strategies
Maverick buying reduction
Customer perspective
Process definitions
Social media
Measurement
Common practices and frameworks
Spend
eTools utilization
No price measurement
Maximize gap between incomes and outcomes
Contract compliance monitoring
Impulses to stakeholders
Common measurement criteria
Inner customer's perspective must be adopted
Measurement process
Purchasing and supply strategic basis
Purchasing and supply strategic orientation
Integrating PSM into business strategy
Cost management, cost leadership
Supplier relationship management (SRM),
long-term relationships
Value thinking, added value
Purchasing and supply organization structure
(strategic and operational separately)
Benchmarking
Innovations and new product development
Supply base optimization
Supplier capability audits
Quality management
Quality monitoring
Risk management
Human resources and capabilities
Purchasing and supply planning
Price-based thinking

Deliveries monitoring
Controlling
Communications and information systems
integration into purchasing and supply
Purchasing and supply processes and
practices development
ABC-analysis
Portfolio analysis (category management)
Business Intelligence
Product and service descriptions
Cost analysis
Price analysis
Spend analysis
Open Book accounting
Customer satisfaction surveys
Value chain analysis
Stock keeping calculations
Target cost calculations
Contract management
Auditions reporting
eAuctions
Enterprise resource planning (ERP) systems
Excel
e-catalogues
Request for x (RFx)
Supply market research
SRM-tools
Financial tools/measures (ROI, RONA...)
Delivery time monitoring
Budgeting
Reverse marketing
Product data management

VALUE CREATING AND ADDING FACTORS OF PURCHASING AND SUPPLY

Achieving and increasing management's
respect
Increase capability and skills
Enhanced management's purchasing and
supply comprehension
Purchasing and supply comprehension and
awareness in entire organization
Highlighting PSM role and importance
Highlighting and emphasizing PSM's potential
Measurement tools implementation
Leadership and management skills addition
and development
Management's commitment addition
Change resistance prevention (communication
etc.)

Enhanced communication and communications skills development
 PSM and R&D interrelationship identification
 Change cascading
 Reaction to environmental change
 Suspiciousness towards suppliers must be reduced
 Not invented here –mindset reduction
 Data systems to support purchasing and supply information needs
 Getting rid of “bad suppliers”
 Unclear roles and responsibilities must be fixed
 Innovativeness increase
 Purchasing and supply staff attitude
 Sufficient resources (human resources, data systems...)
 Best suppliers involvement
 Purchasing and supply early involvement in process
 Strategic supply managed by centralized and by professionals
 Supplier involvement in product development/innovations
 Evidence from purchasing and supply outcomes
 Efficient working practices
 Organization’s reward system engaged in targets
 Globalization
 Working information systems
 Adequate communication inside organization
 Process management

CAPABILITIES THAT ARE CRITICAL AND IMPORTANT TO MAINTAINING ORGANIZATION’S COMPETENCE

Organizational capabilities

Cooperation inside organization
 Clear business plan
 Organization and resource allocation
 Organizational roles and responsibilities
 Top management commitment
 Management system

Business capabilities

Juridics / contracts
 Interpersonal and social skills
 Market knowledge
 Cultural knowledge
 Personal skills and personal development

Industry knowledge
 Education, work experience
 Target setting
 Ability to identify purchasing and supply’s impact on business
 Strategic skills
 Customer needs understanding
 Project management
 Sales skills
 Business knowledge
 Stress management
 Understanding complexes and systems
 Category management knowledge
 Commitment to set targets
 Cross-functional working skills
 Strategic perspective to purchasing and supply

Supplier cooperation and supplier relationships capabilities

Supply market knowledge and relationships
 Networks, supply networks
 Supplier audition
 Early supplier involvement
 R&D cooperation
 Make-or-buy analysis

Operations management capabilities

Purchasing and supply tools, practices and method control
 Process knowledge and control
 Cost management
 Negotiation skills
 Purchasing process and product expertise
 Logistics knowledge
 Language skills
 Follow-up –development mindset
 Information management tools
 Supplier competitions
 Quality planning and steering
 Analytical skills
 Technical skills
 Training skills

Supervision and controlling capabilities

Purchasing and supply responsibility
 Reward systems
 Measurement knowledge
 Purchasing and supply transparency and sustainability
 Supplier auditions

APPENDIX 2: Extensive research results from the case research.

Performance category	Capability	Current level				Impact on PSM performance			
		Purchasing leaders (avg. score)	Purchasing managers (avg. score)	Purchasing management team members (avg. score)	AVG. SCORE	Purchasing leaders (avg. score)	Purchasing managers (avg. score)	Purchasing management team members (avg. score)	AVG. SCORE
Purchasing Strategy	Purchasing's strategic focus and strategic orientation	2,90	3,33	3,00	3,00	3,60	4,00	3,80	3,63
	The integration of purchasing into corporate strategy	2,50	2,50	2,33	2,47	3,80	3,75	3,78	3,76
	Purchasing target setting	2,90	2,50	2,67	2,76	3,70	3,75	3,73	3,65
	Purchasing's organizational structure (operational separated from strategic)	2,80	2,75	2,67	2,76	3,00	3,75	3,38	3,12
	Internal communication	2,50	2,25	2,67	2,47	3,30	3,75	3,53	3,35
	Internal customer satisfaction monitoring	2,50	2,25	2,50	2,44	3,20	3,25	3,23	3,18
	Product and service categorizing (e.g. critical, volume...)	2,50	2,50	2,67	2,53	3,33	3,25	3,29	3,25
Cost Management	Understanding end customer needs (e.g. need definitions and mapping)	2,80	2,50	3,00	2,76	3,90	3,75	3,83	3,76
	Total cost thinking	2,89	2,75	2,67	2,81	3,89	4,00	3,94	3,81
	Spend analysis	2,67	2,75	2,33	2,63	3,22	3,25	3,24	3,19
	Lifecycle costs	1,67	2,25	2,00	1,88	2,89	3,50	3,19	3,06
	Budget and budgeting	2,56	2,00	2,50	2,40	3,00	3,00	3,00	3,06
	Working capital follow-up and monitoring	2,00	1,75	2,33	2,00	2,78	3,00	2,89	2,88
	Target cost calculation	2,63	2,00	2,67	2,47	3,67	3,25	3,46	3,53
Purchasing development	Innovations and new product development	1,90	1,75	2,00	1,88	2,60	2,25	2,43	2,53
	Purchasing process and operations development (e.g. benchmarking)	2,30	2,50	2,33	2,35	2,90	3,50	3,20	3,06
	Quality management, quality thinking	1,90	1,75	1,67	1,82	2,80	3,00	2,90	2,88
	Human resources and capabilities development	2,50	2,75	2,33	2,53	3,60	4,00	3,80	3,71
Purchasing Controlling	Product/service descriptions	2,50	2,75	2,33	2,53	2,80	2,75	2,78	2,82
	Risk management	2,30	1,75	2,33	2,18	3,70	4,00	3,85	3,71
	Contract management and contract compliance	2,80	2,25	3,33	2,76	3,80	3,75	3,78	3,82
	Code of conduct compliance	3,50	3,25	2,67	3,29	3,70	3,00	3,35	3,41
Supplier Relationship Management	Supplier categorizing (e.g. portfolio analysis)	2,40	2,75	2,00	2,41	3,30	3,25	3,28	3,18
	Supplier base optimization	2,30	2,00	2,33	2,24	3,20	3,75	3,48	3,18
	Supplier network risk analysis	1,90	2,00	2,33	2,00	3,10	3,25	3,18	3,06
	Supplier capability auditing	2,10	1,75	2,33	2,06	3,20	3,50	3,35	3,18
	Supplier selection	2,80	2,75	2,33	2,71	3,70	4,00	3,85	3,65
Supplier Performance Measurement	Supplier development	2,10	1,75	2,00	2,00	3,22	3,50	3,36	3,19
	Delivery monitoring	2,30	1,75	2,33	2,18	3,70	3,75	3,73	3,59
	Quality auditing (e.g. supplier audits)	2,10	1,75	2,00	2,00	3,50	3,50	3,50	3,41
	Cost analysis (e.g. open book accounting)	2,00	2,25	2,33	2,12	3,30	3,25	3,28	3,24
Supplier Orientation	Service level agreements	2,00	2,00	2,00	2,00	3,20	3,00	3,10	3,12
	External communication	2,30	2,00	2,00	2,18	3,00	3,00	3,00	2,88
	Supply market knowledge (e.g. price analysis, supply market research)	2,40	2,50	2,33	2,41	3,50	3,50	3,50	3,41
Purchasing Process	Reverse marketing	1,60	1,67	2,00	1,69	2,60	2,67	2,63	2,56
	Request for quotations (RFQ)	3,00	3,50	3,67	3,24	3,60	4,00	3,80	3,71
	Purchase orders	2,60	2,75	3,33	2,76	3,40	3,75	3,58	3,59
	Competitive bidding, supplier competitions	2,90	2,75	3,33	2,94	3,50	3,75	3,63	3,59
	Delivery reception	2,50	2,00	2,67	2,41	2,90	3,25	3,08	3,12
	Payment transactions	2,40	2,25	3,00	2,47	2,60	3,50	3,05	2,94
	Claims and reclamations	2,50	2,00	2,67	2,41	3,20	3,75	3,48	3,41
Tools and Technologies	Information systems integration with suppliers information systems	1,60	1,75	2,00	1,71	3,10	3,00	3,05	2,94
	Financial tools (e.g. Spend)	2,30	2,50	2,67	2,41	3,10	4,00	3,55	3,29
	eAuctions (in sourcing)	1,60	2,25	1,67	1,76	2,60	3,00	2,80	2,59
	SRM-tools	1,50	1,50	2,00	1,59	2,90	3,25	3,08	2,88
	ERP (Enterprise Resource Planning System)	1,40	1,67	2,33	1,63	2,44	2,75	2,60	2,63
	eCatalogues	2,50	2,75	3,00	2,65	2,60	3,00	2,80	2,76
	Product data management	1,90	2,67	2,00	2,07	2,70	2,75	2,73	2,65
	Business Intelligence	1,90	2,25	2,33	2,06	3,00	3,25	3,13	3,00
	Excel	2,80	3,00	2,67	2,82	2,90	3,25	3,08	2,94

APPENDIX 3: Gap analysis results from the case research.

Capability	PSM Maturity - Current level (avg. score)	Importance - Impact on PSM performance (avg. score)	Gap
Risk management	2,18	3,71	1,53
Delivery monitoring	2,18	3,59	1,41
Quality auditing (e.g. supplier audits)	2,00	3,41	1,41
SRM-tools	1,59	2,88	1,29
The integration of purchasing into corporate strategy	2,47	3,76	1,29
Information systems integration with suppliers information systems	1,71	2,94	1,24
Supplier development	2,00	3,19	1,19
Lifecycle costs	1,88	3,06	1,19
Human resources and capabilities development	2,53	3,71	1,18
Cost analysis (e.g. open book accounting)	2,12	3,24	1,12
Supplier capability auditing	2,06	3,18	1,12
Service level agreements	2,00	3,12	1,12
Target cost calculation	2,47	3,53	1,07
Contract management and contract compliance	2,76	3,82	1,06
Quality management, quality thinking	1,82	2,88	1,06
Supplier network risk analysis	2,00	3,06	1,06
Total cost thinking	2,81	3,81	1,00
Understanding end customer needs (e.g. need definitions and mapping)	2,76	3,76	1,00
Supply market knowledge (e.g. price analysis, supply market research)	2,41	3,41	1,00
Claims and reclamations	2,41	3,41	1,00
ERP	1,63	2,63	1,00
Business Intelligence	2,06	3,00	0,94
Supplier selection	2,71	3,65	0,94
Supplier base optimization	2,24	3,18	0,94
Purchasing target setting	2,76	3,65	0,88
Internal communication	2,47	3,35	0,88
Financial tools (e.g. Spend)	2,41	3,29	0,88
Working capital follow-up and monitoring	2,00	2,88	0,88
Reverse marketing	1,69	2,56	0,88
Purchase orders	2,76	3,59	0,82
eAuctions (in sourcing)	1,76	2,59	0,82
Supplier categorizing (e.g. portfolio analysis)	2,41	3,18	0,76
Internal customer satisfaction monitoring	2,44	3,18	0,74
Product and service categorizing (e.g. critical, volume...)	2,53	3,25	0,72
Delivery reception	2,41	3,12	0,71
External communication	2,18	2,88	0,71
Purchasing process and operations development (e.g. benchmarking)	2,35	3,06	0,71
Budget and budgeting	2,40	3,06	0,66
Competitive bidding, supplier competitions	2,94	3,59	0,65
Innovations and new product development	1,88	2,53	0,65
Purchasing's strategic focus and strategic orientation	3,00	3,63	0,63
Product data management	2,07	2,65	0,58
Spend analysis	2,63	3,19	0,56
Request for quotations (RFQ)	3,24	3,71	0,47
Payment transactions	2,47	2,94	0,47
Purchasing's organizational structure (operational separated from strategic)	2,76	3,12	0,35
Product/service descriptions	2,53	2,82	0,29
Code of conduct compliance	3,29	3,41	0,12
Excel	2,82	2,94	0,12
eCatalogues	2,65	2,76	0,12