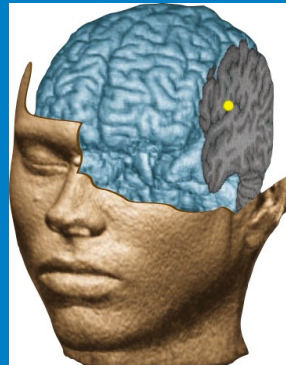


# Cognitive Barriers to External Resource Management – Top Management Perspective

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Kari Iloranta





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**Kari Iloranta**

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**Abstract**

This research addresses a significant unresolved problem, the slowly evolved top management cognition of the strategic opportunities of supply management. It brings a top management perspective to the supply management literature and studies the implications of cognitive processes for supply management-related decision making. The existing supply management literature does not offer frameworks for these issues.

The core of the empirical part of this case research consists of interviews with the top management team members in three industrial companies, focusing on five supply management related change processes within those.

As theoretical lenses I utilise the established concepts of bounded rationality, managerial cognition, and institutionalisation. Referring to the literature on organisation theory, I will build on the idea that the barriers to cognition of the increased importance of external resources are barriers to the optimal economic performance of the firm.

In this paper I suggest that the general management orientation within industrial firms is based on mental models of a firm that purchases mainly simple goods for production needs, although presently the majority of the resources utilised by an industrial company are external. These historical mental models are implanted into the minds of new generations in the form of education, form the basis of general functional organisational models and concepts of strategy, and influence discussions in the economic media. Through these various forms, the mental models' implications tend to strengthen each other and constitute a vicious circle that effectively creates a barrier to cognition of the strategic opportunities offered by SM and external resources.

I argue that two key factors in the slowly evolved cognition of the strategic importance of external resources are: 1) the whole value of the external spend within industrial firms is not regularly reported and is rarely calculated. 2) strategic differentiation opportunities through strategic supply management (SSM) are not recognised as a result of limited education in modern SSM.

I suggest a need for paradigmatic change in general managerial thinking, from operational purchasing towards external resource management. This change would have remarkable implications for reporting practices, strategy processes, management teams' agendas, organisation, education, and cross-organisational training and it would also bring new insights to economic media in evaluating a firm's performance.

**Keywords** Top management cognition, external resource management, strategic supply management

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Tämä tutkimus käsittelee merkittävää liikkeenjohdon ongelmaa: Miksi ylin johto ei tunnista ulkoisten resurssien merkitystä kilpailukyvyille eikä näe keinoja ulkoisten resurssien tehokkaaseen hyödyntämiseen ja johtamiseen. Tutkimus tuo ylimmän johdon näkökulman hankintatoimeen ja avaa hankintojen ja ulkoisten resurssien johtamisen päätöksentekoon liittyviä kognitiivisia prosesseja.

Tutkimuksen empiirinen osa muodostuu kolmen keskiuuren yrityksen johtoryhmien kaikkien jäsenten haastatteluista ja viiden ulkoisiin resursseihin liittyvän muutosprojektin analyyseistä näissä yrityksissä.

Teoreettisina näkökulmina käytän rajatun rationaalisuuden, johdon kognition ja institutionalisoitumisen tunnettuja konsepteja ja viitekehyksiä. Yleisiin organisaatioteorioihin pohjautuen lähdän siitä, että ulkoisten resurssien merkityksen tunnistamisen esteet rajoittavat koko yrityksen kilpailukykyä ja menestystä.

Tämän tutkimuksen perusteella näen, että ylimmän johdon yleiset käsitykset ulkoisten resurssien merkittävydestä perustuvat perinteisen tuotantokeskeisen teollisuuden luomiin ajatusmalleihin, vaikka nykyisin keskimäärin noin 80 % yrityksen käyttämistä resursseista on ulkoisia. Nämä historialliset ajatusmallit siirtyvät sukupolvelta toiselle, muodostavat pohjan yrityksen taloudelliselle raportoinnille, funktionaaliselle organisaatiolle ja strategiaprosesseille, sekä vaikuttavat ulkopuolisiin analyytikoihin ja talousmedioihin. Usean eri mekanismin kautta nämä ajatusmallit muodostavat itseään vahvistavan noidankehän, joka tehokkaasti rajoittaa ulkoisiin resursseihin liittyvien strategisten mahdollisuuksien tunnistamista.

Väitän, että kaksi keskeisintä tekijää tämän noidankehän muodostumisessa ovat 1) tuotantokeskeinen taloudellinen raportointi, joka mm. ”muiksi kustannuksiksi” hajauttamalla piilottaa ulkoisten resurssien suhteellisen tärkeyden ja 2) vähäinen modernin hankintatoimen ja ulkoisten resurssien johtamisen koulutus ja kokemus, jotka estävät strategisten mahdollisuuksien tunnistamisen johtoryhmätasolla.

Ehdotan paradigmaattista ajattelutavan muutosta operatiivisesta ostamisesta strategiseen ulkoisten resurssien johtamiseen. Tällä muutoksella olisi suuri vaikutus johdon agendaan, raportointikäytäntöihin, strategiaprosesseihin, organisaatioon ja koulutukseen sekä peruskoulutustasolla että ammattilaisten valmennuksessa. Se toisi myös analyytikoille uusia näkökulmia yritysten onnistumisen arviointiin.

**Avainsanat** Johdon päätöksenteko, ulkoisten resurssien johtaminen, strateginen hankintatoimi

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# Cognitive Barriers to External Resource Management – Top Management Perspective

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Aalto University, School of Science

## *Preface*

“If it is so good, why don’t all the firms do it?”

This research addresses a significant unresolved problem, the slowly evolved top management cognition of the strategic opportunities of supply management. It brings a top management perspective to the supply management literature and studies the implications of cognitive processes for supply management-related decision making. The existing supply management literature does not offer frameworks for these issues.

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“If you want to go quickly, go alone; if you want to reach far, go together!”

This work has been a long journey, and would not have succeeded without support and encouragement by many colleagues and friends. My late parents encouraged us children to always aim high and not to be satisfied with less.

An important first phase of this thinking process was the authoring exercises of books on supply management: “Hankintojen johtaminen – ostamisesta toimittajamarkkinoiden hallintaan” (Iloranta, Pajunen-Muhonen, Tietosanoma 2008/2009/2012/2115), which still seems to be the only managerial textbook which takes a holistic top management view of PSM and external resources, and “Kumppanina työterveyshuolto” (Seuri, Iloranta, Räsänen, and Tietosanoma 2010), which humbly opened these insights within the healthcare sector, to be deepened and broadened later. Special thanks to my co-authors Hanna Pajunen-Muhonen, Markku Seuri, and prof. Kimmo Räsänen for the lively and insightful discussions during the writing work and our editor Tiia Vanhala at Tietosanoma for tireless encouragement and advice towards clearer formulations of evolving thoughts.

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## *Terminology*

Terminology is a highly important factor in studying cognitive barriers, because the used terms and wordings frame perceptions and cognitions (Bateson G., 2000).

The terminology relating to purchasing and, more generally, to external resources is incoherent, not only across firms and industries but also across academic discourses, schools, and authors. Since the 1980s, to differentiate it from passive purchasing, evolving active approaches to the acquisition of external resources have been described with words such as sourcing and supply management. The word “sourcing” emphasises the search process, often associated with new suppliers from lower-cost countries, and “supply management” to the will to exert more active control over suppliers across the firm’s borders. Since the 1990s, the word “strategic” has often been connected to sourcing and supply management, often by consultants, to differentiate it from operational purchasing. Cox and Lamming (1993) suggested the term “external resource management” to reflect the totally different organisational capabilities and skills better than operational purchasing. The term “extended enterprise” has been employed to describe the inclusion of external resources within the scope of management (e.g. Buhman, Kekre and Singhal 2005)

In general, the terminological evolution reflects the evolving relationship with suppliers and supply markets, from transactionally-oriented, purely operational activity towards a more strategic approach to external resources. A variety of terms in general speech is employed when discussing the management of a firm’s purchases, suppliers, and supply markets. “Buying”, “purchasing”, “procurement”, “sourcing”, “supply chain management”, “supply management”, “purchasing and supply management”, “supply base management”, “supply chain management”, “supply network management”, “supply market management”, “supply-demand network management”, and “external resource management” are all terms somehow relating to the acquisition and utilisation of external resources.

However, depending on the speaker, school of origin and context, all of these terms are employed with various meanings, often conflicting and overlapping, even in a firm’s internal communications. New terms are often brought to the firm either by junior recruits from university, by external advisors and consultants or by experienced employees from other firms. Normative isomorphic process aligns the terminology of professionals through e.g. joint training sessions, meetings and seminars. Mimetic process conveys the terminology from more advanced firms to less advanced (Dimaggio and Powell 1983). Contagion is a good wording to describe the spreading processes (Kamann and Bakker 2004.).

### *The terms employed in this paper*

#### Supply management

I understand the supply broadly: All activities across the organisation aiming at the effective acquisition and

utilisation of external resources and supply markets' evolving opportunities to meet the organisation's long-term objectives. In comparison to SCM, strategic supply management (SSM) aims to emphasise the strategic structuring of supply chains and networks, not only the operational efficiency of existing chains. Thus, supply management has strategic content and should not need to be emphasised by the word "strategic". These terms include and address more limitedly perceived activities such as sourcing, purchasing, and procurement, which are typically employed with more transaction-oriented meanings.

#### Strategic Supply Management:

A more holistic and strategic view is to include customer needs and the firm's business strategy as factors of definition of supply management, e.g. "the selection of most suitable suppliers and relating to them in such a way that supports the market strategy of the company in satisfying end customer needs" (Dirk-Jan Kamann's Customer Driven Supply Management).

Our university level textbook widens this view further, linking the internal capabilities of a firm openly into the concept of strategic supply management. We suggest, that strategy development at all levels (company, business, purchased category) should be an iterative interplay between the evolving customer needs, global supply market opportunities and internal (core) capabilities (Iloranta & Pajunen-Muhonen 2015).

#### Purchased spend, external spend:

All the externally purchased spend, both direct and indirect purchases, investments, materials, goods and services, outsourced activities, and also including, for example, rents and financial services. This interpretation is broader than those which are generally used.

#### PSM

The term PSM (Purchasing and Supply Management) is employed in the text when generally addressing all the organization's interfaces with suppliers and supply markets.

#### SM, SSM

SM (Supply Management) is used as a general term when addressing supply-related activities. SSM (Strategic Supply management) is employed when emphasising modern strategic thinking.

During the interviews, the Finnish word “hankinta”, translated as procurement, was employed, the aim being to cover all the PSM- and SSM-related issues with a neutral, generic term.

#### External resources, external resource management

To emphasise the broadest perspective on supply, the term “external resource management” has recently been employed to cover all external spend and resource usage. This perspective has evolved during the study. It was not employed during the interviews, although it arose with regard to the broadest scope of procurement during two interviews in the case company Alpha. Key differences in comparison to strategic supply management are: a) the emphasis on the idea of suppliers as manageable communities of (human) resources, and b) the existence of external resources that are not visible in companies’ public reporting (e.g. sales representatives, supporters, and public services). All traditional purchasing and supply-related terminology describes limited functions/activities within external resource management.

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## 1. Introduction and motivation

Over the last century, supply management (SM) in average industrial companies has evolved from passive purchasing towards strategic supply management (SSM). Radical changes in economic geography and in global transparency and reachability have accelerated the change over recent decades.

Over the last thirty years, globalising supply markets have received growing interest in industrial firms, and increased activity in the consulting world and academic research (Participant observations within A. T. Kearney, Booz Allen Hamilton, and Aalto University). Many high-performing companies have publicly indicated that active utilisation of supply market opportunities has been a key source of competitive advantage (e.g. Dell, IKEA, Nike, Nokia, Apple, Kone).

The share of the external spend has slowly grown to become the major cost element

The share of the externally purchased spend has continuously increased throughout the era of industrialisation and the content of the purchased spend has become more diversified and complex (e.g. Lysons & Farrington 2000). This evolution seems to comply well with Adam Smith's (Smith 1776) early insight that the division of labour becomes more finely-grained as markets are allowed to develop freely. In an industrial company, the externally purchased spend accounts for, on average, approximately 80% of the company's total costs, including investments (Kivistö, Puumalainen, Tervonen & Virolainen 2005; Hines 2004; Axelsson 2005). The externally purchased spend is thus by far the major cost factor of industrial companies. Even a small saving or incremental added value within this large cost mass would thus be economically significant.

Opportunities to differentiate from competition by means of strategic supply management have significantly increased

Before the present era of global transparency and reachability, three large groups of factors relating to communication, logistics, and politics limited SM's opportunities to contribute to a firm's performance. When both international transportation and communication were slow and expensive, it was natural to select suppliers locally or nationally. Political interests in protecting national industries were usual in most countries after the Second World War (Roth 1994). In Finland, until the '80s a foreign product had to be more than 30% cheaper than a Finnish product before it could be accepted in public tenders. After the Second World War, the general political atmosphere appreciated exporting firms as the nation's knights, and mostly neglected the advantages of the international division of labour, even being hostile towards imports (Iloranta 1973). Both the relative cost advantage of nearby suppliers and political resistance to foreign suppliers tended to limit the scope to proximate suppliers. When suppliers operate under the same legislation and societal circumstances, many factors involved in their cost structures are similar; for example, personnel costs, interest rates, and taxation. These tend to build similar price structures and minimise differences in pricing. When suppliers are situated nearby, they most probably know each other, for example, through acting in the same trade unions and clubs. When competitors are well connected, there is a higher risk of

mutual arrangements, for example, price agreements, joint allocation of customers or projects, avoidance of fierce price competition, or other ways of limiting competition. In these conditions, formal competitive tendering is probably a relatively ineffective process. When the differences between the prices that are offered are small, or only one supplier is clearly interested, bargaining and hard negotiation are the buyer's only tools. However, these tools are weak when the supplier knows that there is no real alternative. The expected bargaining discount is included in the proposed price.

In sum, in circumstances where both logistical and political factors limit alternatives and price differences, the purchasing function has had few opportunities to differentiate between competitors. Thus, purchasing as a task was not considered important for the firm's performance and played a supporting role in the internal value chain, understood to be a part of logistics, supporting production and acting reactively to production, product development, marketing, and sales (Fox & Rink 1977; Porter 1985). Political and technological (i.e. low-cost telecommunications, the Internet, and effective logistics) changes have had a major impact on the global business environment, making it transparent, open, and connected.

#### Supply management meets generic criteria of strategic importance

Along with the evolving interest and growing opportunities, the word "strategic" is often attached to SM, to emphasise the relative economic importance, identified significant opportunities, or just a novel approach to the acquisition of external resources. The term "strategic" is regularly employed as an everyday phrase in speech. However, many authors have identified that the exact meaning is not so clear:

*"The term 'strategic' is often misused by business organizations and some academics. Firms will use the term to mean important rather than the nature of the word itself. The concept of planning, forward thinking etc. is embodied in the phrase, as opposed to a reactive approach, i.e. having a knee-jerk reaction to change. The proactive argument is very pertinent, especially when applied to the area of supply management."* (Cousins & Spekman 2001)

*"Since its first mention in the Old Testament, the concept of strategy has been largely a semantic issue. Numerous authors have focused their attention on the concept of strategy but have failed to comprehensively investigate its historical evolution."* (Bracker 1980, p. 219)

The term "strategy" has its origins in the Greek word *strategos*, "a general" (further from "army" and "lead"). As a verb, *stratego* means to "plan the destruction of one's enemies through effective use of resources". Socrates was one of the first to show the analogy and usefulness of this thinking in business: "Both in war and business it is important to plan the use of available resources to meet the objectives." (Bracker 1980, p. 219). From this, a simple interpretation can be made that strategy means to reach one's goals through the effective use of the available resources.

The generic definition of strategy, suggested in the previous paragraph, emphasises supply markets' and purchasing and supply management's (PSM) roles as important factors in an industrial firm's strategy, because the externally purchased spend represents approximately 80% of the resources utilised.

The situation has not always been the same. In times when the classical concept of industrial organisation was born, most of a company's resources were internal labour that could be coordinated within a hierarchy. In the present business environment, characterised by global openness, speed, and transparency, most resources lie outside the company and can be coordinated by PSM. When most of a firm's resources are external, their effective utilisation is most probably key to the firm's strategy. It would be natural for supply markets and SM to play a visible role in the annual strategy process.

My first approach to the phenomenon of interest was a preliminary study on "Is purchasing strategic?", presented at NOFOMA 2008 (Aminoff, Iloranta & Juhantila 2008). We wanted to shed light on the differences between companies regarding supply-related potential. In some companies, top management had really recognised the opportunities and their importance; in other companies, SM was perceived as a purely operational activity. For me, the most important insight from this study is the idea that SM-related decisions might possibly depend more on managerial perceptions than numerical facts.

### **1.1 Literature suggests a strategic role for supply management**

Several authors have already identified a demand for developing more strategic approaches to supply (e.g. Kraljic 1983), the need to integrate supply strategy with company/corporate strategy (e.g. Spekman 1981; Trent 2007) and, further, with external resource management (Cox and Lamming 1997; Hall 2000; Tanskanen, Iloranta, Laiho, Kaipia, and Saloranta 2012). What is common to all these articles is an insight into the increasing importance of SM for an industrial company.

The SM literature suggests that professional SM (SSM) has a strong influence on a firm's performance (e.g. Axelsson 2005; Chen, Paulraj & Lado 2004; Gunasekaran, Patel & McGaughey 2004; Hughes, Day, & Hughes 2005; Hall 2000; Laseter 1998; Rajagopal & Bernard 1994; Giunipero, Handfield & Eltantawy 2006; Schiele 2007; Trent 2007; Iloranta & Pajunen-Muhonen 2008/2012/2015; Hoffmann 2010). "Supply chain strategy, knowledge and action are key antecedents to firm performance" (Craighead, Hult, Tomas & Ketchen 2009). Hoffman (2010) shows that the fit between corporate strategy and SCM "positively impacts the performance of the firm" but that most of the literature still relates supply chain (SC) strategies to the functional level.

Joseph Carter and Ram Narasimhan (1996) found a very strong positive correlation between company performance and PSM performance. A study by the Supply Management Institute and McKinsey revealed a strong positive correlation between a company's earnings before interest, tax, depreciation and amortisation (EBITDA) margins over a three-year period and the company's purchasing capabilities (Reinecke, Spiller and Ungerman 2007). Trent (2007) reports several studies which indicate that the best-performing companies have developed their SM activities towards the strategic level.

## 1.2 Limited top management recognition

Although external resources represent round 80% of the cost structure of average industrial companies, they seem to enjoy minimal interest in management teams (participant observations within A.T. Kearney, Carta Corporate Advisors, and Booz Allen Hamilton). Strategy processes typically try to be visionary and cover environmental evolution, customer market analysis, technological visions, and internal core capabilities well, but how often are the evolving global supply markets carefully evaluated? Top management participates with pleasure in marketing activities and meets large customers regularly, but how often does top management have a joint meeting with key suppliers? Research and product/service development activities are regarded as crucial for the firm's success, but often R&D units seem to do their work in closed silos, with minimal exposure to supply market opportunities, or in the worst case hanging themselves on one active supplier. Sales, marketing, R&D, and production are normal backgrounds to top management positions. How many CEOs have a background within supply management?

There have been a lot of triggers towards a change during the last two decades. Since the early 1990s, some global consulting companies (e.g. A. T. Kearney and Booz Allen Hamilton) have helped international companies to make significant savings through intensive "global sourcing" and "strategic sourcing" projects that mainly utilised labour cost differences between national economies and reshaped purchasing organisations more towards global sourcing organisations. In addition, these projects witnessed the power of PSM coordination across fragmented business units (BU) and also the huge needs for training and education in modern SM (the sources of these perceptions are participant observations and A. T. Kearney's and Booz Allen Hamilton's databases). Many leading companies achieved significant profit improvements through systematic sourcing processes, some publicly stating that the effective utilisation of supply networks was the key enabler of growth and profit (e.g. Kone and Nokia); however, followers remained rare. Even if a consulting firm was commissioned and significant cost-saving improvements made, the organisation often reverted to business as usual after the project was completed. Many companies changed very little. Why?

Hughes et al. (2005) stated that less than 20% of the company executives they studied link purchasing with strategic issues such as shareholder value and return on capital. This indicates that management does not fully recognise the link between the role of PSM (i.e. external resources) and the company's long-term (i.e. strategic) performance. In the chapter 2 I will refer to selected literature to open this link.

## 1.3 Linkage between cognition and a firm's economic performance

In this chapter I will develop a simple model that suggests that managerial cognition is an important mediator between changes in the business environment and the performance of a firm. The cognition processes and mechanisms will be further deepened in the literature review, in Chapter 2.

The core idea of modern organisation theories is the basic concept of contingency theory; there is no best way to organise, although an organisation must fit the environment to perform well: "The structure and process of an organisation must fit

in its context, if it is to survive or be effective” (Drazin & Van de Ven 1985). Tom Burns and G.M. Stalker (1961) studied the efficiency of organisational models by combining the ideas of scientific management and the emerging human relations schools within the emerging electronics industry and found that different environments call for different styles of organisation (Hatch 1997; Burns et al. 1961). They concluded that there is no single optimal way to organise, but the best form depends on the situation, or the environmental context. This idea evolved slowly to become termed “contingency theory” in the literature: to perform optimally, a firm must continuously fit its structure, strategy, and processes to the changing context, or the contingencies of an evolving environment.

Ron Adner and Constance Helfat (2003) demonstrate empirical proof that, in the pursuit of the firm’s economic performance, top management decisions and activities are significant factors in a company’s reactions to environmental changes. Several other studies (e.g. Rosenbloom 2000; Tripsas and Gavetti 2000) support their findings. It is suggested that a firm’s long-term performance depends on top management’s decisions, on the way the management builds, integrates, and reconfigures organisational resources and competencies to meet the challenges of the evolving environment (Adner and Helfat 2003, Hambrick & Mason 1984, Walsh 1995, Narayanan, Zane & Kemmerer 2011, Kaplan 2011, Kor & Mesko 2013, Eggers & Kaplan 2013).

To be able to make decisions through which the organisation reaches an optimal fit with the environment, management’s first role is to identify and recognise important issues and changes in the external environment. In the strategy literature, the capabilities to build, integrate, and reconfigure organisational resources and competencies are termed “dynamic capabilities”, a concept proposed by David Teece, Gary Pisano and Amy Shuen in 1997, and further developed by, for example, Sydney Winter (2003) and David Teece, (2009). The basic idea had already been put forward by Edith Penrose in 1959 when she identified that routine capabilities to maintain a firm’s operation are insufficient to make the firm grow, develop, and change. Penrose (1959) identified entrepreneurial capabilities as skills needed to change and develop the firm. Lately it has been further emphasised that managerial cognition is an important dynamic capability (Kor & Mesko 2013, Eggers et al 2013).

Dynamic managerial capabilities have been seen as the key mechanism to adapt the firm’s capabilities to the evolving conditions of the business environment (Kor & Mesko 2013). Adner and Helfat (2003) divided the concept of managerial dynamic capabilities into human capital, social capital, and cognition. They included managerial cognition as one of the three components in their concept. An individual executive’s human capital and social capital (i.e. as perceived by Adner and Helfat 2003) can be regarded as important factors and building blocks of his/her cognitive processes and have a strong influence on how he/she perceives the world, what he/she recognises, and which environmental changes gain his/her attention and lead to activity (Kor & Mesko 2013). Human capital, in the forms of education and individual experience, sets the foundations of mental models, social capital offers tools to reflect and develop them with others, and the cognitive frames act as filters for signals from the environment. These issues will be discussed further in Chapter 2.

Although, in an endeavour to clarify and simplify, contingency theory greatly neglects the role of an individual executive in the firm’s performance (Hatch 1997), a

real top executive is typically appreciated for his/her success in sustaining and improving the firm's economic performance. The key criteria can vary from long-term market value to short-term profits, from ROI to next year's dividends. The maximisation of economic performance is generally understood to be the top management's key objective, if not the only task.

It can also be generally expected that management acts to the best of its ability in considering all possible options to improve the firm's performance. Management makes minor and major decisions on short- and long-term issues every day. It can also be expected that any decision made is purposefully based on a belief that this individual decision will improve the firm's performance (Penrose 1959/95). "Managerial action demands a belief that the firm can improve its position" (Bromiley 2005, p. 13), and that a specific action will contribute to this. This view suggests that the opposite will also be true; management will not invest in activities or changes which are not perceived as beneficial for the firm's performance.

When management is expected to continuously maximise the firm's performance, and this maximisation means an optimal fit to the changing environmental context, management is expected to make decisions that lead to better adaptation to the context and to decide on reasonable reactions to changes or expected changes. Cognition of these changes is a key factor in optimal adaptation. Thus, the barriers to cognition are barriers to the optimal fit and performance of the firm. Managerial cognition has thus been placed in a central role between changes in the environment and the firm's performance, also regarding the effective utilisation of external resources, i.e. SSM.

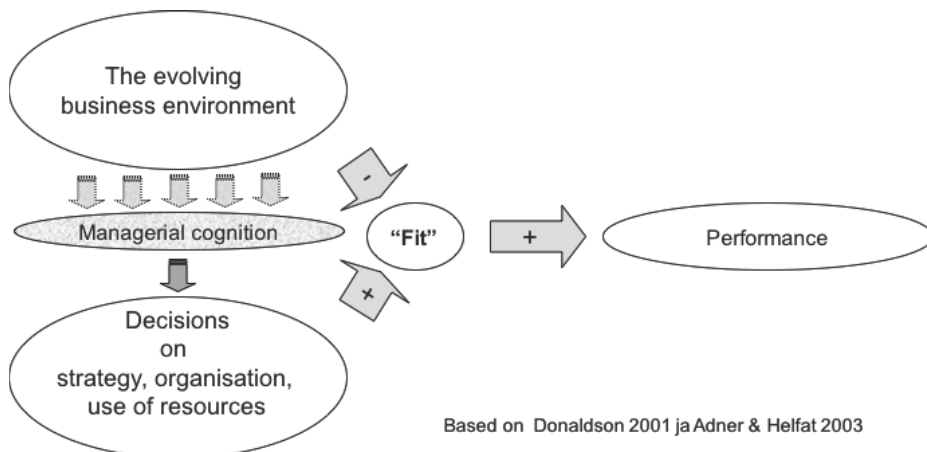


Figure 1. Managerial cognition's role in making the company reach a fit with the environmental context, building on the ideas of Donaldsson (2001) and Adner and Helfat (2003).

#### 1.4 The research gap

The drivers and rationale of new and more strategic SM approaches have been described well in the literature since the 1980s. Much of the research is limited to

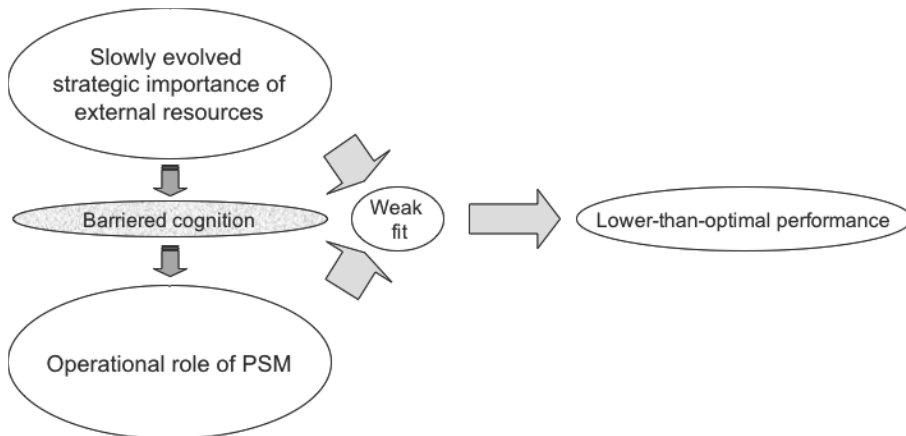
rational benefits, operationally optimal solutions, and best practices; however, implementation and human resource issues have received less attention (Fawcett, Magnan & McCarter 2008; McCarter, Fawcett & Magnan 2005). Barriers and behavioural hindrances to SSM seem to be especially weakly covered (Moberg, Speh & Freese 2003) and the more recent literature does not seem to cover this gap.

The barriers to SSM have been studied to some extent. Fawcett et al. (2008) conducted a broad quantitative and qualitative study on the benefits, barriers, and bridges of successful SCM. Factually, their focus was limited to the barriers to SC collaboration and partnerships. Collaboration does not fully address the field of SSM in the broader sense employed in this paper, although it is an important dimension. With regard to the barriers, it can be perceived as an almost related proxy. Cooperation and collaboration are features of modern SM that exceed traditional company limits, for which the traditional purchasing orientation offers no tools. As cooperation and collaboration are important dimensions of SSM, but not of traditional purchasing, the barriers identified to cooperation and collaboration are also barriers to full-scale SSM. As the primary barrier to successful SC collaboration, Fawcett et al. (2008) identified human behaviour in different forms: “organizational culture and structure, functional conflicts, lack of managerial commitment, conflicting and non-transparent processes, policies, and procedures, performance measurement, information sharing, lack of trust, resource constraints, and complexity of SC networks”. All the issues are inherently such that top management will be involved, with their activities impacting on the issues.

Koen Vandembemt and Paul Matthyssens (2005) studied barriers to strategic innovations and suggested that the barriers have both cognitive and structural dimensions. The cognitive dimension relates to the mental models of individual executives, based on perceived outdated cause-and-effect relationships. With time the cognitive barriers have become embedded in the structures, routines, and cultures of firms (Vandembemt & Matthyssens 2005). This study offers relevant views, because a change from operational PSM to strategic SM can be seen as a company’s internal strategic innovation, suggesting changes in organisation, resource allocations, and processes.

Bendoly, Croson, Goncalves, and Schultz (2010) pointed out that case studies on cognitive psychology are rare within operations management. Approaching cognitive barriers through analysis of top management’s perceptions of SM will, thus, also contribute to filling this broader gap.

The phenomenon of interest, barriered cognition of SSM opportunities, can be described as a detailed version of the figure above (Figure 2).



Based on Donaldson 2001 ja Adner & Helfat 2003

*Figure 2. The views of the SM literature crystallised into the general model (Figure 1); barrièred cognition as the driver of the operational role of PSM, leading to a weaker-than-optimal fit to the business environment, further leading to a lower-than-optimal performance*

This research will focus on barriers to top management cognition of strategic opportunities through effective utilisation and management of external resources; that is, SSM.

#### **1.4 The research question**

Drawn from the above, a good research problem within management sciences seeks unsuspected relationships that change actions and perspectives. The research question comprises four components: “What?” and “How?” describe and define the range of the research problem; the core question “Why?” asks for an explanation, and “Who, when, and where?” seek limits to the scope of the explanation’s validity (Whetten 1989).

On the basis of the above discussion and references, I defined the research question as:

*What are the potential barriers and hindering mechanisms to top management cognition of the strategic importance and opportunities of supply management and external resources?*

This question addresses both the individual level and top management team level in looking for barriers to managerial cognition.

### **1.5 Exploratory interest and challenges**

The interest and objective of this research is to identify and understand barriers to the strategic use of external resources (SSM). This would allow top management to improve the firm's performance through mitigating the barriers.

Weick noted that “the contribution in social sciences does not lie in validated knowledge, but rather in the suggestion of relationships and connections, that had previously not been suspected, relationships that change actions and perspectives.” (Weick 1989). The identified research gap, cognitive hindrances to strategic supply management (SSM), with its mechanisms, relationships, and connections is, to date, unexplored as such, although there is a large and growing body of research on cognitive distortions and hindrances in the psychological and sociological and managerial literature. This research will address “a significant unresolved problem” (George 2014) of the management of industrial firms.

Studying individual perceptions is an exceptional challenge regarding the research approach. Martin Lindström (2009) employed brain research instruments to compare people's expressed comments on trade advertising and their simultaneously measured brain reactions to them. He noted that the verbally expressed opinions and the visualised activities and reactions in human brains were often in conflict. His findings suggest that an answer to a study question does not automatically correspond to, and might even be in conflict with, an interviewee's real perceptions, which actually guide his/her behaviour. To avoid this dilemma of direct questions and to explore real internal individual perceptions, the phenomenon to be studied cannot be addressed directly, but somehow indirectly. The interview preparations, setting, and questions should avoid triggering possible preconceptions or biases in any form.

### **1.6 Ontology and epistemology**

Philosophers of science have argued, at least since Plato and Aristotle, whether absolute truths exist or whether all we can know is only our individual perceptions, our own relative truths. During recent decades, it has been increasingly strongly suggested that the latter perspective is better aligned to our growing understanding of how our brains function (Durchland 2002). A physical light signal penetrating the lenses of our eyes is coded to electrochemical neural signals before transfer to the brain for interaction with earlier neural formations to create a “picture”, a mental image. There is no physical objective link between the external world and our brain. A complex subconscious process is needed to bring, for example, a voice or colour to our attention; what we consciously sense is an outcome of complex subconscious filtering and conclusions (Durchland 2002, referring to early works by Wilhelm Wundt 1862 and Hermann Helmholtz 1867-1925). All we are able to know is constructs, ideas, interpretations, hypotheses, and meanings that our brains create from various sensed signals and our individual experiences. We cannot know whether another individual perceives an issue in a similar manner.

The philosophy behind cognition and mental models is directly linked with ontology and epistemology. The literature discussed in the previous chapter suggests that our perception of the world is internally constructed. Each of us endeavours to build a rational image of the world from our individual experiences. As these perceived

images of the world potentially differ between individuals, all we can study is what we ourselves perceive; that is, visual, lingual, gestural, and behavioural signs and symbols, how people describe their perceptions, and our own interpretations of what they might be perceiving (Durchland 2002).

In any event, the existence of a single real world is less important if everyone perceives the world differently. Disciples of George Kelly describe this as follows: “it could be said that...epistemology (investigating the nature and origin of knowledge) is placed in front of ontology (investigating the nature of being and existence), and that a distinct boundary between these two realms is blurred” (<http://www.pcp-net.org/encyclopaedia/ontology.html> 24.4.2015). The philosophy developed by Kelly has been termed constructive alternativism, which “is the idea that, while there is only one true reality, reality is always experienced from one or another perspective, or alternative construction. I have a construction, you have one, a person on the other side of the planet has one, someone living long ago had one, a primitive person has one, a modern scientist has one, every child has one, even someone who is seriously mentally ill has one. Yet no-one's construction is ever complete -- the world is just too complicated, too big, for anyone to have the perfect perspective.” (Boeree 1997).

Morgan and Smircich (1980) advise that the ontology, epistemology, and methodology of a phenomenon being studied should be well aligned. In this study, I will address such human issues as identification, cognition, perception, and knowledge of supply management. During the preliminary studies and the literature reviews, I have developed a preliminary understanding that any phenomenon is probably understood in different ways by different individuals, who impose their individual mental constructs on their findings of the external world and, thus, actively create their individual perceptions of reality. A constructionist perspective rests on the assumption that human beings impose their internal perceptions on the external world and, in so doing, actively create their individual realities. Thus, it seems to be natural to take constructionist epistemology as the philosophical basis for further research.

### **1.7 A priori constructs for research planning**

In order for a study to have a better focus, Eisenhardt (1989a) suggests developing possible a priori constructs in an early phase of a study. Preliminary ideas about possible explanatory factors make it easier to direct the research setting and questions towards the best exploration of the focal phenomenon.

#### *Seeking potentially related factors across multiple disciplines*

My original question was: “If strategic supply management seems to create such opportunities to enhance competitiveness, why don't all companies do it?”

In the first phase, I concentrated on the evolution of the strategic literature across fifty years to identify possible rational reasons and environmental factors that would explain the phenomenon. My philosophical orientation was positivistic, expecting the reasons to be quantifiable, measurable, and testable with statistical and numerical analyses. I did not manage to find reasonable explanations for the phenomenon from the strategy literature, although I learned, for example, that top management in slow-moving industries typically follows general environmental trends, whereas in high-

speed industries the management's focus is typically more on operational activities and also supply management (SM) (Eisenhardt 1989b). This explains why some high-speed firms (e.g. Nokia) have been known for active development of strategic supply management (SSM). However, at best, this can only explain a small part of the preliminarily identified variations between firms.

When this approach did not seem to deliver much, the next insight was to evaluate whether the phenomenon relates to some organisational features. The literature on organisation theories, partly overlapping with the previously reviewed strategic literature, sheds light on this. The closed system-open system dichotomy was a powerful insight that makes a radical difference regarding PSM orientation. However, although the lessons learned made it easier to understand the focal phenomenon better from several perspectives, they did not explain the reasons for or the root causes of the phenomenon.

Lectures on industry evolution (Course on Industry Evolution, Helsinki University of Technology, Industrial Management, Autumn 2005) by Prof. Juha-Antti Lamberg and Prof. Peter Muurman led further to the identification of the importance of the bounds of rationality, belief systems, and mental models in individual and managerial decision making (e.g. Tikkanen, Lamberg, Parvinen, & Kallunki 2005). The importance of the evolutionary history and path dependence of both firms and human decision makers raises individuals' experience and education as important explanatory factors of behaviour.

Earlier, I addressed the evolution of the role of purchasing and supply management (PSM) in a working paper, a broad literature review from the first descriptions of the purchasing function in the 1800s to the first introductory concepts of interorganisational SM in the 1980s and further to the 1990s, the era of the opening of global trade and transparency (Iloranta 2006). This longitudinal evaluation of the literature on PSM endeavoured to take a co-evolutionary perspective, looking for linkages between the evolution of environmental contexts and the evolution of the role of purchasing as described in the literature. In times of crisis and economic turbulence (e.g. after the 1929 downturn and during the Second World War) supply management rises into the management's focus, as the availability of key materials and components is weaker than earlier, but crucial for the firm's existence. This interest settles again when the business environment has stabilised and the supply market offering grows.

To understand better the factors involved in SM's strategicity, we decided to conduct a study (in a team) on the strategicity of PSM in selected industrial companies (Aminoff et al. 2008). The small empirical part of this study aimed to be a preliminary study to detail the scope of a larger research study. However, I now regard the most important empirical result of this piece of work as being the finding that within leading companies which have developed SSM systematically for years, SM is a cross-organisational business issue, while, in companies that have lagged behind, purchasing has only played a traditionally functional and operational role. In the leading companies, such as Kone and Nokia, purchasing was also clearly perceived as strategic and important and also broader terms (strategic sourcing, supply management) were regularly used.

The literature review within this piece of research covered fifty years of the literature on the evolving supply management, strategy and organisational theory. We drew a simple conclusion that to be strategic for a company, the company's SM must satisfy two conditions:

- the purchased spend must represent a relatively significant share of the cost structure or the value added of the company;
- the company must be able to differentiate itself from its competition through methods of SM.

High economic value does not make an issue strategically important if we cannot differentiate within it. High differentiation opportunities do not make an issue important if it is economically unimportant. However, the issue clearly has high strategic value if the economic value is high and differentiation opportunities are significant. This simple logic suggests that cognition of an issue's relative strategic importance requires cognition of both the relative size and the opportunities to differentiate oneself from the competition. Both of these components have been put forward by, for example, Peter Kraljic (1983) and Michiel Leenders and David Blenkhorn (1988).

This finding also guided me to differentiate between these two dimensions with regard to managerial cognition. Perception of SM's strategicity demands recognition of each of these two dimensions, both the relative size of the external spend and opportunities to differentiate within it.

#### *Developing preliminary constructs*

One of the first perspectives on SSM was put forward by Leenders and Blenkhorn (1988). Their concept is based on the idea that SM needs a "long term strategic perspective congruent with the organisation's objectives and strategies" and that this "is synonymous with a top management perspective on supply potential" (Leenders et al. 1988, p. vii).

As Leenders et al. clearly include top management's role in their thinking and understand supply very broadly, I selected their criteria for SSM as the key construct for further work. I will elaborate their thoughts further in the sub-chapters that follow.

Leenders et al. (1988, p. 7) propose the following attributes for SM when it is regarded as "an asset in organizational objectives and strategies":

- part of the competitive edge, and
- a continuous top management concern

To really be a part of the continuously evolving competitive strategy, SM would be a natural part of the regular strategy evaluation and development process. The demand for proactivity and end customer drive would suggest that supply market evaluation is a key part of strategic analyses, fully comparable to customer market evaluations. This demand is not met if supply market evaluation is, for example, merely a sub-project of the SC strategy and only weakly or not at all visible to top management. As an indication of recognised strategicity in this dimension, I define a recognised role in the company's regular strategy process.

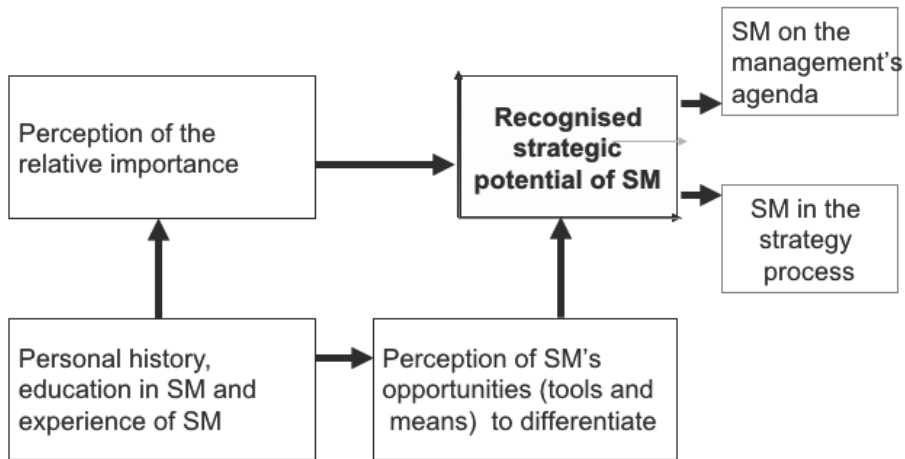
A continuous top management concern would most probably be perceived through continual discussions of SM-related issues within the top management team. If the strategic potential of SM is recognised and continuously utilised as an important source of competitive edge, SM-related issues would naturally be a regular discussion topic on top management's meeting agenda. Probably, the chief procurement officer's (CPO) formal presentation of price indices or inventory value development does not meet the criteria for strategic discussion. To enable understanding of the evolution of global supply markets and to develop supply strategies and meaningfully discuss alternatives, a level of knowledge of the markets and the methods with which to address them is necessary. As an indication of recognised strategicity in this dimension, I define the perceived regularity and importance of SM issues on top management's meeting agenda.

As the key construct for research planning purposes, I define perceived strategicity, the recognised strategic potential, which is indicated by a recognised role in the strategy process and a regular presence on top management's discussion agenda.

#### *Developing a preliminary model*

Formal education is an important part of the lifelong experience. This also means that identification, cognition, perception, and knowledge of different SM-related alternatives depend on an individual's experience and education concerning professional SM. It would be natural to expect that the deeper the education and the broader experience an executive has in different business situations, the more alternative methods can be added and experiences to identify and utilise supply market opportunities he/she would clearly have. He/she also probably identifies the relative size of the external spend more clearly and, thus, recognises the relative importance of SM. However, limited education and experience concerning SM in a stable business environment would probably make the executive only perceive limited opportunities or no alternatives; thus, the perceived importance and strategic value is low.

The research approach should address these two factors, individual education and experience, as potential explanations for the missing cognition of SM management's relative strategic importance and possibly endeavour to understand further root causes and hidden mechanisms. These preliminary expected mechanisms can be drawn in diagrammatic form (Fig. 3):



*Figure 3. Simple ideas of drivers and implications of management cognition of the strategic supply management.*

The model in Figure 5 was intended to be utilised only for appropriate detailing of the data gathering process and interview questions, possibly to be rejected later. Open interview questions would also allow other possible factors to become visible and analysable.

### **1.8 The structure of the research**

The flowchart shown in Figure 4 gives an overview of the research process. In the text I will present all the literature reviews in Chapter 2, although many of them were performed in parallel with the empirical part of the research. Otherwise, the text follows the logic of this flowchart. The process of the analysis will be described in more detail in Chapter 4.

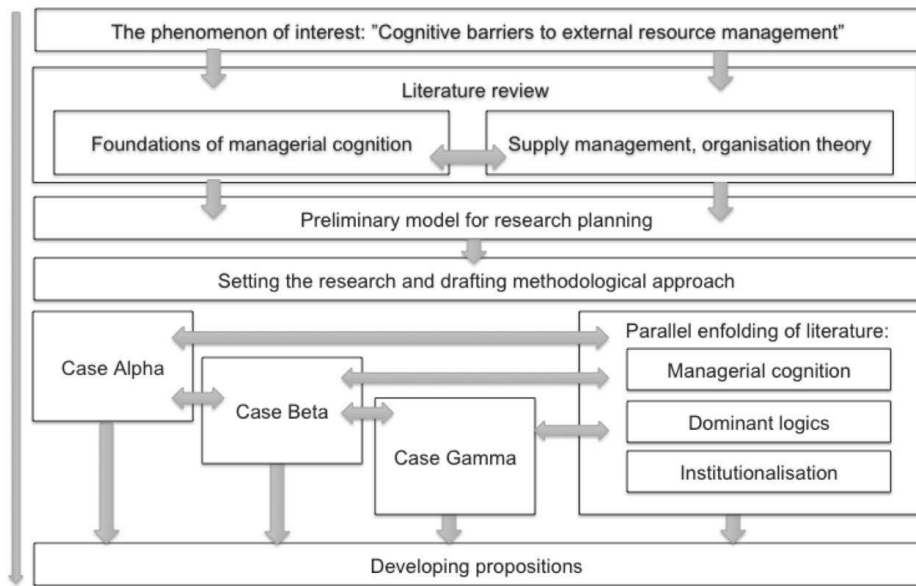


Figure 4. An overview of the research process

## 2. Literature review

The challenge of this work lies in its multidisciplinary nature. There is no single theory that explains precisely this phenomenon, but several academic discourses and theories shed light on it from different points of view. A review of the PSM literature is crucial in order to position the findings and propositions in an appropriate context. I will take a co-evolutionary perspective on PSM, because my preliminary literature reviews suggest that even its long-term history may have implications for both individual and group-level perceptions.

To satisfactorily cover the discourses and theories related to the phenomenon under study, several academic discourses have been evaluated in parallel and intertwined with the empirical process. In using more than one theoretical lens, I feel encouraged by Mary Jo Hatch: "...if we are ever to realize the value of theory to practice, then we must master multiple perspectives, for it is in bringing a variety of issues and ideas to the intellectual table that we will learn how to be both effective and innovative in our organizational practices" (Hatch, 1997).

In this review I will address the literature in the following order:

- Managerial cognition
  - o Bounded rationality
  - o Personal constructs as individual explanations of the world
  - o Perception, cognition, and sensemaking
  - o Framing and anchoring
  - o The tendency to standardisation and insufficient adjustment
- A model of an issue's rise to top management's agenda
  - o Education and experience
  - o Factors raising an issue to management's attention
  - o The management team's role in cognition
  - o Dominant logic and the management team's agenda
  - o Institutionalisation, coercive, normative, and mimetic processes
  - o A proposal for an explanatory model
- Top management's role in PSM-related decision making
- The evolutionary development of PSM
  - o Early years of industrialisation until war periods
  - o National protectionist markets, '50s-'70s
  - o Materials management, '60s-'80s
  - o Influence of Japanese management models
  - o Evolving strategic views
  - o Strategic aspects of PSM
  - o Strategic purchasing
  - o Purchasing strategies
  - o Evolution towards strategic activity
- Towards network thinking
- Towards external resource management
- Evolving behavioural views of PSM
- Summary

## 2.1 Managerial cognition

To be able to plan an appropriate research process, I had to develop a preliminary understanding of the processes and mechanisms that stem from a trigger, a change in the business environment, to cognition of their importance and, further, to managerial activity aiming to improve the firm's performance. To understand the real reasons for some issues being recognised as important and worthy of action, or why decisions are made or not made, requires the evaluation of individual decision makers' complex mental processes. Because individual decision makers are not isolated from their teams, organisations, industries, and communities, these broader networks have an influence on those mental processes.

I start by opening up three basic concepts, namely that of bounded rationality by Herbert Simon (1945/1997), personal construct psychology by George Kelly (1963), and contextual framing and anchoring put forward by Gregory Bateson (1972/2000) and Amos Tversky and Daniel Kahneman (1974). By referring to this early literature I wanted to open up the very basic thoughts and insights, because even these basic behavioural views have enjoyed only very limited attention in the supply management literature so far. Later I will summarise my understanding of the managerial cognition literature by assembling from multiple sources a model which constitutes my framework for analysis.

### Bounded rationality

Rationality is an attribute connected to the purchasing and, more generally, operational management literature (Barratt, Choi, & Li 2011). Engineers and executives make "rational" decisions and are sometimes blamed for forgetting the human individual. Top management seems to be generally expected to make highly rational decisions; with a higher management position, the general expectations are for more professional and rational decisions with a greater basis in "cold facts".

Herbert Simon suggested that traditional economic theories contain a hidden expectation of an "economic man" who makes rational decisions and has unlimited wisdom and capabilities: *"Traditional economic theory postulates an 'economic man', who, in the course of being 'economic', is also 'rational'. This man is assumed to have knowledge of the relevant aspects of his environment, which, if not absolutely complete, is at least impressively clear and voluminous. He is assumed to have a well-organized and stable system of preferences, and a skill in computation that enables him to calculate, for the alternative courses of action that are available to him, which of these will permit him to reach the highest attainable point of his preference scale."* (Simon 2010, p. 99)

It is taken for granted by the logic of rational decisions that the decision maker has sufficiently broad knowledge to:

1. understand the scope of the issue,
2. identify all the possible alternatives of behaviour, choice, and decision,
3. understand which of these alternatives are available in practice,
4. understand the potential outcomes of each alternative decision,
5. understand the pay-offs, that is, the efforts, costs, risks, and capabilities needed to implement each alternative, and

6. understand the possibilities and probabilities of reaching the desired outcomes of alternative efforts.

(freely interpreted, Simon 1955/2010)

Herbert Simon's (1997) conclusion was that an executive can never be fully "rational" in decision making as, in a complex world, he/she can never know everything that influences the premises of the decision. He described the individual weaknesses of decision making as "bounded rationality". Simon concludes that "the pattern of human choice is often more nearly a stimulus-response pattern than a choice among alternatives. Human rationality operates, then, within the limits of the psychological environment." (Simon 1997, p. 117).

Simon also showed that individual executives tended to solve a company's general problems with their own tools. For example, salesmen perceived it as wisest to solve their company's challenges through improved activities in sales and production executives through improvements in production. Simon (1997, pp. 298-302) thus gave empirical proof of the old proverb "[i]f you have a hammer, you see nails everywhere". The findings suggest, for example, that the world of salesmen rotated around sales and the world of production executives revolved around production. Were they incapable of grasping a holistic problem from different perspectives? How do they perceive phenomena totally outside their respective functional spheres of sales or production, e.g. supply management?

Simon's concept of bounded rationality indicates that hidden cognitive aspects are important factors in an individual's decisions. With a decision, an executive aims at improving the future state of the firm. However, the executive's personal perceptions guide the logic of which factors are employed and how best to take the firm towards that future state. Simon argued (1997, pp. 299-301) that each executive perceives as important those aspects of a situation that relate specifically to the activities and goals of his/her task or department.

The potential bounded rationality of top management decisions is of special interest, not only because of the importance and broad influence of the decisions but also because the high degree of professionalism expected from top management teams is implicitly associated with objective rationality. The traditional strategic and operational literature seems to take it for granted that firms' management somehow reacts to every change in the business environment and rationally prioritises important issues (e.g. Simon 2010). Executives are seen as "rational conduits in the deployment of capabilities" (Eggers & Kaplan 2013, p. 298). This is strongly questioned in the cognitive literature, which emphasises the importance of noticing, interpreting, and sensemaking processes that impact on how changes potentially affect a firm (Weick 1989; Kaplan 2011; Eggers et al. 2013; Nadkarni & Barr 2008; Narayanan, Zane, & Kemmerer 2011). Executives are bombarded with a huge amount of strategic and less strategic information that often exceeds their cognitive capacity (Simon 1997). Selective attention is one way to address this cognitive overload, filtering issues worthy of reaction (Nadkarni et al. 2008). Selective attention to issues perceived as important facilitates managing in a complex world.

Thus, these perspectives suggest that cognitive aspects are also important factors in top management's decisions regarding the development of strategic supply

management (SSM). The bounded rationality view suggests that, to be able really to make rational strategic supply management (SSM)-related decisions, a executive needs to have both theoretical knowledge and practical experience of SSM.

Personal constructs as individual explanations of the world

Slightly before Simon presented the idea of bounded rationality in *Administrative Behavior* (1945), Kenneth Craik had suggested in *The Nature of Explanations* (1943) that we construct “small-scale models” of reality in our minds, which we utilise to anticipate events. While earlier psychologists had only focused on the externally identifiable behaviour of an individual, Craik was interested in internal mental states and, thus, created the foundations for mental models and cognitive psychology.

George Kelly developed this idea of small-scale models further and published *Principles of Personal Construct Psychology* (1955) and *A Theory of Personality: The Psychology of Personal Constructs* (Kelly 1963), a carefully developed theory of personal constructs as an attempt to describe how individuals perceive the world around them and how they construct models to understand how the world works (Kelly 1963; Gaines & Shaw 2003). Kelly based his theory on the insight that “[a] person's processes are psychologically channelized by the ways in which he anticipates events” (Gaines et al. 2003).

The key idea is that we build our personal *constructs* in the form of *anticipations* of what will happen as a consequence of something (i.e. causalities) that an action or incident will cause; for example, “a door opens as a result of drawing the handle downwards”, or “harder selling will improve a firm’s performance”. Kelly suggests that an individual works from babyhood as a scientist, trying to construct an improving and widening picture of the world through the identification of small logical interdependencies between issues and to forecast what follows from what (Kelly 1963, Fransella & Niemeyer 2005).

The logical linkages between an individual’s personal construct system, anticipation, and experience are similar to a scientist’s theory, hypothesis, and empirical findings. We are like scientists and continuously endeavour to learn from our experiences of earlier anticipations and improve our anticipations to fit better to what happens in the external world. Our actions are guided by anticipation of what will happen: “What determines our behaviour is not what happens to us but how we interpret what happens to us.” (Rowe 2007).

Constructs are often definable in words, but can also be non-verbal and hard to explain. They develop with time and experience towards a hierarchical system with looser or tighter relationships between individual constructs. There can be overlaps or even conflicts between an individual’s constructs. On the basis of new observations and experiences, both the system and the constructs are continuously updated (Kelly 1963; Ackermann, Eden, & Cropper 1992; Gaines et al. 2003). The construct system is our individual model of the world, trying to describe how it works and to anticipate events and consequences.

Although we can share the ideas of constructs with other people through words and pictures, the details of constructs are particular to each individual and, hence, were

termed *personal constructs* by Kelly (Kelly 1963; Ackermann et al. 1992; Eden et al. 1992; Gaines et al. 2003).

Terms like mental models or schemas have been used to describe the individuality of mental constructs, models of the world, but also as parts of personal construct systems focusing on or limited to certain issues, e.g. management, strategy, or PSM. With time the mental models will stabilise and tend to become resistant to change (Eckerd and Bendoly 2015).

Modern neuroscience confirms and strengthens Kelly's theory. It emphasises the physiological differences between individual brains, as well as the continuous reshaping of physical brain structures with experiences, learning, and insights. (Rock and Schwartz 2006, Rock 2010, Boyatzis 2014). This view has remarkable implications for management, leadership, and education generally and thus also for PSM.

### Perception, cognition, and sensemaking

Important concepts in this work are cognition and perception, which are complex, intertwined, and overlapping. Those concepts have been broadly discussed in the literature but are difficult to define (e.g. Cyert & March 2001; Starbuck 2015; Ascoli, Botvinick, Heuer, & Bhattacharyya 2014; Brandimonte, Bruno, & Simona 2006; Kim, Payne, & Tan 2006). In the literature the terms have been used in a somewhat overlapping manner, as have the other related concepts, such as mental models, cognitive maps, and schemas. It seems to be impossible to separate perception and cognition. One of the most prominent scientists in cognitive psychology, Ulrich Neisser, suggests that the real environment and an individual's cognitive maps (schemas of the environment) and perceptions constitute an interlinked, iterative loop in which perceptual exploration of the environment modifies the existing cognitive maps (schemas) of the environment and these again redirect the perceptual exploration processes (Neisser 1980). Takatalo developed Neisser's model further and suggested a strong role for goal-based motivation, possibly externally triggered, in directing the perceptual exploration and interaction with the environment. This interaction further influences and shapes perception and cognition (cognitive schemas). (Takatalo 2011; Takatalo, Ihanus, Kaistinen, Nyman, & Häkkinen 2014).

Perception is seen as an integral part of, and a result of, cognitive processes. In the executive's mind, cognitive processes guide the emergence of a perception, an ability to see and interpret e.g. financial reports and signals from the business environment from a new point of view. In this sense, a cognitive fit with the organisational environment is necessary for optimal perception of the existing realities. Hence, for example, simply summarising fragmented figures into the total spend on external resources and a view of the differentiation opportunities created by modern SSM will create a cognition of strategic opportunities.

An exact definition and differentiation of the concepts of perception and cognition is not crucial for this study, because my focus is on the factors which act as barriers to perception, cognition, and attention, i.e. somehow set cognitive limitations on an issue's rise to top management's agenda.

Another concept which links perception and cognition to Kelly's constructs is

sensemaking. Sensemaking is searching for contexts where the new perceived issues fit together and make sense. (Weick 1995, p. 133). Through sensemaking we develop our mental models, fitting the newly perceived issues into our existing construct system, by interpreting them to “language, talk and communication” (Weick et al. 2005, p. 409). In this process we label and categorise an issue, and that categorisation leads to cognition, positioning in a certain place in our construct system. Words are a tool for thinking, reforming our mental models. Through words the categories are socially constructed and are subject to evolution as circumstances change. This positioning (categorisation, labelling) also connects the issues to appropriate types of behaviour and actions: “What do I do next?” Categorisation and action are not linearly sequential, but cyclic and iterative (Weick et al. 2005, p. 412). Action may also readjust categorisation.

Weick emphasises the influence of individual mental models on perceptions: “What people keep missing is that what they see is usually the outcome of their own prior actions. What they see is something of their own making” (Weick 1995, p. 134). Perception is not objective, and on the basis of their personal constructs, or mental models, individuals perceive the same events and changes in the environment differently.

In the sensemaking process we try to interpret previous events and (re)connect them in meaningful ways to explain what is happening. We thus “write plausible histories that link these previous happenings with current outcomes” (Weick 1979, p. 13). In this process we actively create truths by assigning meanings to the observed phenomena (Astley 1985).

The concept of sensemaking is in line with George Kelly’s ideas. Sensemaking can be seen as the process of keeping the personally constructed model of the world internally coherent and logical and fitting the new issues/signals/findings into appropriate places in the model. Sensemaking will become an even more important process as there will be continuously more unexpected and unforecastable events and issues in our increasingly complex and uncertain world (Weick 1993). Daft and Weick further suggest that in reality organisations are much more complex, multidimensional, and dynamic than any of the organisational frameworks and models that are used describe them as being (Daft et al. 1984). Organisations are open social systems which process knowledge from their environment and have cognitive systems and memories which save knowledge, behavioural models, mental maps, norms, and values, although individuals come and go. The organisation learns through sharing perceptions. Sharing facilitates the convergence of interpretation, constituting common cognitive maps (Daft et al. 1984). Organisations are seen as interpretative systems with varying levels of activity and formality in their interpretations.

Colin Eden views an organisation as a socially negotiated order (SNO) and argues that strategic processes should be seen more as social than analytical processes, resembling negotiation among the organisational members more than conclusions (Eden 1992). The higher the status of an individual, the stronger his/her influential power in the negotiations, but that position, or status, in the organisation is also an outcome of negotiational processes (negotiated social order, NSO) (Kamann et al. 2004).

## Framing and anchoring

Some researchers regard human reasoning as highly context-dependent (e.g. Simon & Newell 1971). Gregory Bateson developed a concept of psychological framing, proposing that a frame (around an issue) means that different thinking should be applied to an issue within a frame than outside it. He used a frame around a picture as an analogy. He suggested that any message that defines a frame (explicitly or implicitly) also factually gives the receiver instructions as to how to interpret and understand this message. This frame is anchored in cognitive frameworks that guide interpretations (Bateson 1972/2000). The idea of framing fits well with Kelly's idea of personal constructs. The frame links an issue/a signal to obviously relevant parts of individually constructed models of the world and indicates related causal dependencies. The concept of framing has been further developed and applied within psychology (e.g. Minsky 1975) economics (e.g. Tversky & Kahnemann 1981), sociology (e.g. Young 2010), strategic change (Kaplan 2008b; Cornelissen, Holt, & Zundel 2011) and supply management (Tokar, Aloysius, Waller, & Hawkins 2016).

Bateson's perspective suggests that when hearing or seeing a message concerning suppliers, top management probably views and thinks about this message within a frame of purchasing. Referring to Tversky and Kahneman (1984), Bendoly et al. (2010) argue that inappropriate framing through inadequate adaptation to the situational context of the business environment is a key source of flaws in operational decisions. Individual connotations are based on an individual's earlier experiences and his/her personal constructs of the world. Terminology is an important factor in decisions as it builds individual connotations that frame an individual's perception of the issues being discussed.

This perspective further suggests that to be able to understand and interpret the different perceptions of senior executives, it is essential to understand the societal and business environments in which their individual constructs and connotations were born. As learning often occurs through the behavioural models and advice of more senior people, who have constructed their perceptions of the world in a similar way over several decades, it would be beneficial to understand the evolution over an even longer period than that of an individual executive's career. For this reason I will address the long-term development of PSM in Chapter 2.4.

## The tendency to standardisation and insufficient adjustment

Recent findings suggest that individuals develop intuitive standard responses to weak indications resembling previously faced situations (Foster & Kokko 2009). Tversky and Kahnemann identified a human tendency to anchor their estimations in past experiences and, typically, adjust these insufficiently to evolving conditions (Tversky & Kahnemann 1974). Daniel Kahneman (2011) further suggests that we have two different thinking modes, fast and slow, that utilise our brains in different ways. In normal situations we employ our fast thinking mode and respond to seemingly easy and familiar challenges with learned responses. As our brains employ a significant share of energy consumption, this saves both time and energy. When standard responses seem insufficient, we engage our slow thinking mode and evaluate the situation carefully. While this is energy-consuming, it can bring new, broader perceptions and insights and, thus, novel responses to new situations (Kahneman 2011).

The standardisation and anchoring tendencies of human responses can become retarding factors when the environment evolves. A human decision maker tends to utilise previously learnt lessons and easily identify similarities and behave accordingly as before. It might be expected that a very slow change would be especially difficult to recognise as a change and, thus, there is no perceived need to change one's behaviour. Thus, in conditions of slow change, anchoring in previous standard responses and behaviour would be understandable. The share of the average external spend has grown extremely slowly over several decades, but the evolution has been so slow that the evolutionary trend has disappeared among yearly variations. It is understandable that as a result of the relative slowness, the growth stays unnoticed and does not trigger any reframing.

## **2.2 A model of an issue's rise to top management's agenda**

An interesting question concerns which issues are generally recognised as being so important that they attract top management's attention and rise to top management's common agenda. In this sub-chapter, I endeavour to develop a model (see Figure 4 below) of how a signal from the external or internal environment triggers an issue's rise to top management teams' agenda and which factors are suggested to affect/act as a barrier to this process. The model is based on a review of the cognition literature (open searches of the cognition literature among the available journal data in the electronic databases (2008-2015) of Aalto University). With this model, I summarise my understanding and interpretation of the existing theories on managerial cognition, adapted to this problem setting. The model is aimed only at the identification of potential barriering mechanisms.

I sought potential explanatory factors in the literature and identified the following issues, which are potentially important in addressing the question at hand:

- education and experience (e.g. Simon 1945/1997; McKenney & Keen 1974; Hambrick & Mason 1984; Kogut & Zahnder 1996)
- individual attention focus (e.g. Ocasio 1997; Kaplan S. 2008a; Eggers & Kaplan 2013)
- the management team's agenda (e.g. Hambric et al. 1984; Clapham & Schwenk 1991)
- beliefs and dominant logics (e.g. Prahalad & Bettis 1986; Bettis & Prahalad 1995; Tripsas & Gavetti 2000)

More references are given in the sub-chapters that follow; issues are discussed and finally assembled into a model describing my interpretation of an issue's rise to an executive's attention and further to top management's agenda.

### **Education and experience**

George Kelly's idea (1955/1963) of a human being as a scientist who continuously compares, tests, and explains his/her perceptions of the environment against his/her personal constructs of the world conveys the idea of continuous learning and emphasises the role of experience in an individual's mental model of the world. McKenney et al. (1974) stated that "consistent modes of thought develop through training and experience".

Formal education is a process that aims to implant the cumulative experience of earlier generations and the generally approved truths of the prevailing community into the minds of students. DiMaggio and Powell (1983) suggested that formal education can also be a real “iron cage”, limiting the student’s thoughts and perceptions and ultimately his/her model of the world and the influencing mechanisms and causalities between issues. Formal education aims to increase the knowledge level of students and also standardise knowledge levels, even across nations. It is mainly based on prevailing generally accepted models of the world. The logics of the basic models have a strong influence on the explanations taught and mental models adopted, a good example being the debate on evolution and creation theories within the US school system.

Holger Schiele (2007) suggested that the more mature an organisation is with regard to SM-related issues, the more unexploited opportunities it identifies. It would be natural to expect that the more SM-related education and experience an executive has, the more he/she can identify supply market-related alternatives and opportunities (Argote & Ren 2012; Kogut & Zahnder 1996).

SM’s relevance to reaching the executive’s performance goals is also interesting from the perspective of individual education and experience. As discussed earlier, it is argued that a decision maker’s knowledge of the alternatives in a particular situation and his/her understanding of the consequences of these alternatives is naturally highly dependent on his/her individual cognitive base (Simon 2010; March & Simon 1958). Education and functional experience and also an executive’s length of tenure in the organisation are easily observable indicators of the cognitive base (Hambrick & Snow 1977). Individual experience and orientation (i.e. functional aspects) define “the hammer” with which an executive primarily endeavours to solve the challenges ahead (Simon 1997, pp. 296-302). An executive’s education in SSM-related issues and also his/her practical experience within firms in which PSM is appreciated and elevated to the strategic level clearly form a base for its cognition. More deeply educated and experienced executives identify broader opportunities to utilise SM to support organisational goals. I positioned education and individual experience as the basic stepping stones within the preliminary model (see Figure 4).

Factors raising an issue to management’s attention

Attention focus is linked to an executive’s causal logics, or mental model, describing his/her understanding of how the world works; that is, the causal relationships between different phenomena in the business environment. Together, attention focus and causal logic filter and shape the responses of individual executives and management teams to environmental changes (Nadkarni et al. 2008).

In the complex and continuously evolving business environment, members of top management can be regarded as information workers, spending their time in absorbing, processing, formulating, and deploying information on issues, problems, and opportunities (Walsh 1995). They cannot scan every aspect of an organisation or its environment. An executive’s perceptions are limited as a result of his/her selective perception of only some of the visible phenomena. Further, the information selected for processing is interpreted through a filter of cognitive bias and values (Hambrick et al. 1977; McKenney et al. 1974).

McKenney et al. (1974, p. 80) classify the modes of thinking along two dimensions: *information gathering* and *information evaluation*. “Information gathering” relates to the essentially perceptual processes by which the mind organises the diffuse visual and verbal stimuli that are encountered. The resultant “information” is the outcome of a complex coding that depends heavily on mental set, memory capacity, and strategies, often subconscious, which serve to ease “cognitive strain”. They also suggest that information gathering necessarily “involves rejecting some of the data encountered, and summarizing and categorizing the rest”.

Nadkarni et al. (2008, p. 1399) propose that three features bring an issue to the attention focus of an executive: novelty in the context, deviation from expectations, and relevance to reaching the goals. Thus, issues expected to capture the attention of executives are those that:

- a) are perceived as relevant to the attainment of individual goals,
- b) indicate deviation from expectations, plans, and forecasts, or
- c) are unusual or new for the context.

Thus, individual executives focus their attention on environmental changes that seem to be potentially important for the performance of their areas of responsibility and ignore environmental signals concerning changes and phenomena perceived as less relevant, usual, or expected.

#### The management team’s role in cognition

Not only an individual executive’s cognitive processes but also the top management team’s history and dynamics in decision making are important facts in attention and (re)cognition: the properties of individual executives, values and cognitive biases, history, knowledge, and skills are reflected in strategies and organisational decisions (e.g. Hambrick et al. 1984; Bettis & Prahalad 1995; Finkelstein & Hambrick 1990; Kaplan 2011; Narayanan et al. 2011; Eggers et al. 2013).

Individual executives’ perceptions can be aligned with each other and developed towards more common interpretations of the world through rich communication and plentiful discussions. As a broader set of experiences and education are connected, the validity of joint perceptions potentially improves. Adner and Helfat’s social capital addresses the capability of an individual to adapt to and utilise these mechanisms.

However, the literature suggests that performance improvement through alignment and consensus is not always the case. The intellectual level of group decisions might also be weakened for several reasons (e.g. Whyte 1989).

Hambrick and Mason (1984) raised the top management team’s perspective, proposing that a strategic decision is a function of the psychological and demographic composition of an organisation’s top management team. For example, long membership of a team and company can align the team members’ mental models in such a way that environmental changes are interpreted narrowly and something important can remain unnoticed (Tripsas & Gavetti 2000; Reger & Palmer 1996). The management team’s joint perceptions and interpretations of environmental events determine how the company responds to environmental changes. A company’s

resources and organisation and also the company's past performance affect both the attention focus of the management and the management agenda (Clapham & Schwenk 1991).

#### Dominant logic and the management team's agenda

As previously discussed, raw signals from the environment are not addressed until executives interpret their causal relationship with the firm's activities. Joint discussions and interpretations develop joint beliefs in relationships between environmental events and a company's strategic concepts. In the long term, this common causal logic is argued to be the primary basis for decision making (Nadkarni et al. 2008). Prahalad and Bettis employ the term "dominant management logic" (Prahalad et al. 1986) to describe "a shared understanding of the factors relevant to the business's strategy and the relationship between these factors" (Bettis et al. 1995). Thomas Obloj, Krzysztof Obloj, and Michael Pratt define dominant logic as "the manner in which firms conceptualize and make critical resource allocation decisions, and over time develop mental maps, business models and processes, that become organisational recipes" (Obloj et al. 2010). Mezias, Grinyer, and Guth (2001, p. 76) argue for the strength of the collective beliefs of a joint management logic by describing them as "the most pervasive source of inertia", also limiting the identification of new problems: "A change in mindset was necessary before the problem could be diagnosed." The literature identifies several factors that increase the sustainability and power of the dominant logic. Factors driving commitment to the status quo and persistence in pursuing existing strategies are, for example, good past performance, the tenure of management team members, and executives' discretion (Finkelstein et al. 1990; Miller 1991).

Often, behind a management team's dominant logic, an industry's industry-related internal networks offer obvious forums for strengthening common beliefs. These industry-related belief systems can naturally also influence executives' selection for top positions. Like-minded candidates may appear most attractive and the dominant logic need not be questioned.

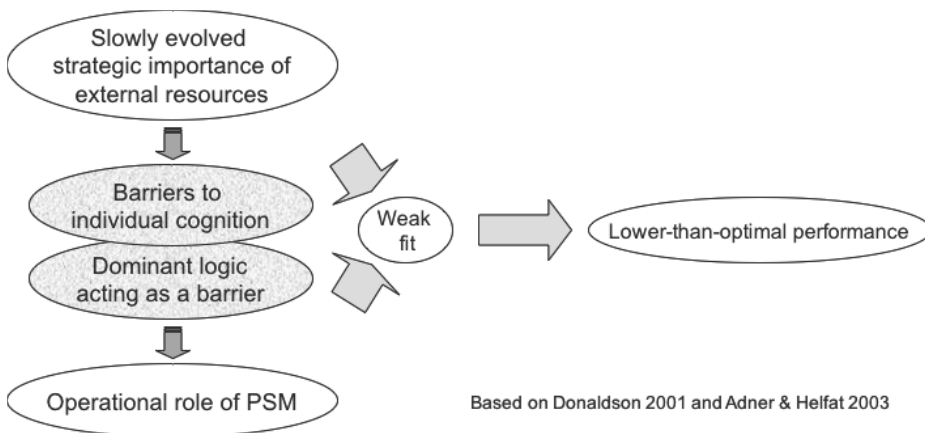
Kamann et al. use contagion as a term describing the process of the homogenisation of views and mental models, i.e. the development and strengthening of dominant logics within a team or organisation, but also within industry networks (Kamann et al. 2004). Within a network the socially leading actor or group of actors set the network's way of doing things, the socially negotiated network order. The evolution of dominant logics happens in two ways: both through the selection of actors who appear desirable (showing desirable attributes) to the network and through contagion (conditioning) to discourage deviating behavior (Kamann et al. 2004).

A further question would be the interlinkage between individual attention and the management team's agenda. The CEO has a crucial role in setting performance targets and measures, as well as allocating resources to strategically important issues. Other management team members often represent functional or area responsibilities, and are even expected to look at issues through lenses that focus on their own interests, using their individually shaped "hammer" in Herbert Simon's terms. It would be natural to expect that the CEO's personal attention very probably raises an issue to the management team's agenda. However, it need not be so. Yasemine Kor and Andrea Mesko suggest that "since senior level management makes up a crucial

portion of the CEO’s readily available brain trust”, the tight connection and alignment between the prevalent dominant logic and individual managerial capabilities may become a barrier to both cognition of the change and acting (Kor & Mesko 2013, p. 240). These authors suggest that the CEO’s and senior management team’s managerial capabilities “in concerto” define the top management’s ability to redefine the firm’s dominant logic to improve the fit to the environment that is evolving. Individual perceptions and cognitive filters are driven by individual human capital (education and experience) and enhanced through individual social capital, which intertwines individual and common perceptions with a commonly perceived dominant logic.

The management team’s common dominant logic sets the basic management agenda, and may be a potential barriering factor to cognition. As an overall phenomenon, the literature referred to earlier suggests keeping it separate from individual cognitive filters. Individual cognition also feeds the dominant logic, but an individual executive’s cognition and attention might not be enough to change a strong dominant logic of the management team.

Figure 5 provides further details about Figure 2. It differentiates two types of barriers, individual barriers, based on experience-based individual constructs, and barriering features of dominant logics.



*Figure 5. The views of managerial cognition literature crystallised into the general model (Figure 2); barriered individual cognition and barriering dominant logic, leading to a weaker-than-optimal fit to the business environment, further leading to a lower-than-optimal performance.*

### Institutionalisation

Instead of the expected broad differentiation of individual perceptions, the first interviews in the case company Alpha revealed obvious similarities of perceptions. This led me to broaden my literature review to theories of institutionalisation in order to understand the nature and origin of common perceptions and dominant logics. Below I briefly draft the basic ideas of the institutionalisation of perceptions and

concepts. I do not consider the latest discourses of institutional theories, for reasons explained earlier.

In sociological discussions institutions and institutionalisation have been discussed since early in the last century (Barley & Tolbert 1997). Institutional theory discusses both processes and practices through which organisations or behaviours become institutionalised, and the influences of the institutionalisation (Scott 2003). Mary Jo Hatch (1997) defines institutions as repeated actions and shared conceptions of reality. Repeated actions sustain belief in their rationality and give similar meaning to oneself and others. John W. Meyer and Brian Rowan suggest (Meyer & Rowan 1977) that over time institutionalised concepts may become commonly believed myths, although they cannot be empirically tested or proven. They argue that the “formal structures of many organisations in postindustrial society dramatically reflect the myths of their institutional environments instead of the demands of their work activities” (Meyer & Rowan 1997, p. 341). Technical procedures within an organisation may become perceived as the obvious means to reach the organisation’s objectives, without any link to their real effectiveness. Kor and Mesko suggest that over time the management’s dominant logic becomes embedded in a firm’s processes, routines, and use of resources and tends to strengthen itself through becoming an information filter as well as a competency filter. Common logic emphasises the underlying beliefs and assumptions within the organisation and drives perceived priorities (Kor & Mesko 2012). Common dominant logic also imposes barriers on the organisation’s ability to learn and thus influences the organisational intelligence (Bettis & Prahalad 1995).

Regarding industry beliefs, DiMaggio and Powell (1983) suggest an interesting perspective on the formation of institutional mental models, experience, routines, and traditions within companies and across industries. They suggested that three different groups of factors drive companies towards similar solutions in the areas of, for example, organisation, strategies, and processes, and thus tend to minimise variation between companies and to build an iron cage against radical changes. The three factors are: 1) normative isomorphism, a result of homogenous education; 2) coercive isomorphism, stemming from political and legal demands and standards, and 3) mimetic isomorphism, stemming from similar responses to uncertainty.

#### *Normative isomorphism*

Education is an important part of our individual experience, aiming to effectively utilise all the wisdom and experiences of earlier generations for the prosperity of the present and future human communities. Education aims to align the interpretations, meanings, and expressions between individuals in order to build common logics of causalities between issues. Formal education aims to (re)shape and (re)formulate students’ mental models. It is an efficient way to convey the experiences, learning, and traditions of earlier generations of human communities to classes of new generations. In their workplaces, newcomers are taught the preferred ways of working, the best practices and processes. If particular aspects of company traditions and practices are not explicit, tacit knowledge, hidden in organisational routines, habits, and traditions, can be learned over time. All together, little by little this reshapes the newcomers’ mental models towards the common models and dominant logics of the organisation:

“The practices, routines and thoughts developed by earlier generations may be perceived as logically obvious, another nature or even biologically unavoidable by us, who learn them as a part of the world as it is” (retranslated from the Finnish translation of Durchland 2002/2004).

#### *Coercive isomorphism*

Coercive isomorphism is based on the formal rules of the community, such as legislation, norms, and standards. Legislation and taxation oblige and guide different firms to similar practices. Public reporting demands and the practices of, for example, local and national taxation officials, national statisticians, the IAS, and the IFRS define the standards for a company’s external reporting. These standards and practices guide the focus of both external industry analysts and the internal management of companies. The standards are not purely coercive, as they advise on the provision of relevant information to external stakeholders and thus in principle allow alternative ways of selecting and structuring information to be shared. Their coercive and normative effects are, however, obvious (Mellempvik, Monsen, & Olson 1988).

The purposes of accounting and reporting are to describe the firm’s situation to internal and external stakeholders, to make information available, and to support decision making and problem solving. The use and interpretation of this information depends on the executive’s capabilities to understand it (Busch 1997). The literature review in Chapter 2 suggests that cognitive processes affect the interpretation of the available information, e.g. financial reports. The individual executive’s cognitive structure and commitment to the goals and the common dominant logic of the organisation all affect how the information is interpreted and what rises to an executive’s attention focus and further to the management team’s agenda. Financial reporting is an important factor in cognition and also a potential barrier.

#### *Mimetic isomorphism*

In an earlier consulting study on outsourcing, we analysed the reasons for the weak success rate of outsourcing decisions and established that sometimes companies seemed to make outsourcing decisions just for the sake of outsourcing, without any apparent rational reasoning (Jackson, Iloranta, & McKenzie 2001). We suggested that when outsourcing increases and is favourably reported in the media, it can become an attractive solution for management in the face of a new situation involving uncertainty. Mimetic isomorphism could also explain similar structures, organisations, and processes across industries. If you do not know what to do, do the same as others seem to do. Searching for “best practices” conveys mimetism at least as an important driver.

In the framework model in Figure 6, I have integrated all the institutionalisation processes into the basic cornerstone of the model.

In their conceptual paper Håkansson and Snehota suggest that firms are primarily viewed as production units, transforming inputs to outputs, and that this view is broadly institutionalised in the business community. This narrows strategic thinking, leads to an internally-oriented focus, and limits the identification of the bidirectional influence and manageability of external resources. (Håkansson et al. 2006).

## A proposal for an explanatory model

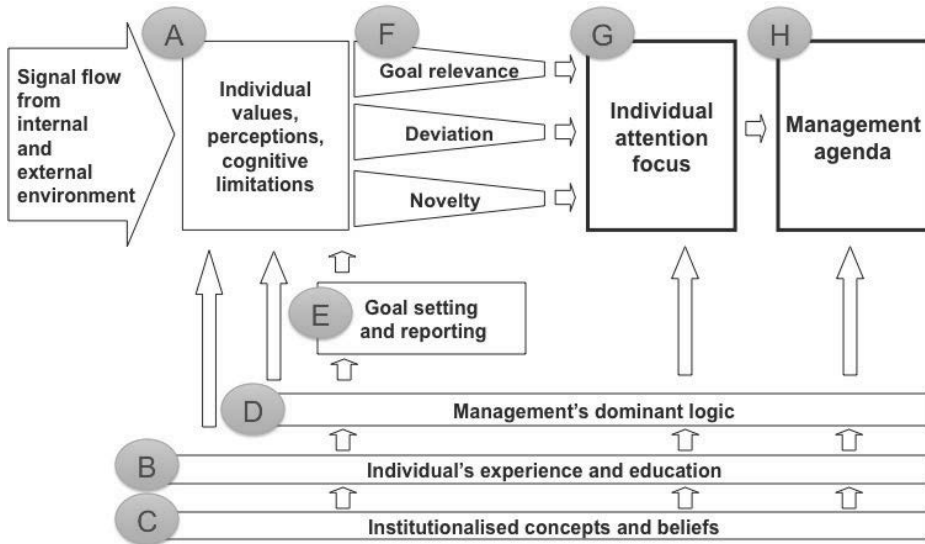


Figure 6. The research framework explaining an issue's rise to an individual executive's attention and further to the management team's agenda. (Further developed and detailed from Hambrick et al. 1984).

Figure 6 shows the factors discussed above that affect an issue's rise to top management's agenda. The figure is explained below.

Raw signals from the business environment, both internal and external, are filtered through (A) an individual executive's education- and experience-based framework, which includes the identification of opportunities, threats, and restrictions and their valuation.

Education- and experience-based perceptions, values, and cognitive limitations (B) are important in this mainly subconscious valuation. Education is based on prevailing industry concepts and beliefs that (C) also shape experiences, both directly and through other people's education- and experience-based behaviour.

The management team's dominant logic (D) develops over time and is based on both its members' individual mental frameworks and cognitive limitations and also directly on general industry concepts and beliefs through institutional isomorphism.

Management reporting (accounting) and goal setting (E) are based on the management's dominant logic thus developed. It influences both the perceptions and cognitive limitations of individual executives and constitutes an important part of the goal-related filters (F).

Building on Nardkarni et al.'s (2008) suggestions, the second filter (F) is based on organisational and individual goals, which are based on mental frameworks at the three levels of general beliefs, individual perceptions, and management's dominant logics. Selected and filtered signals are consciously or subconsciously tested for goal relevance, deviation, or novelty before a signal really penetrates an individual executive's attention focus.

The filters select, frame, and shape issues to an individual executive's attention focus (G) and the sets of issues that are forwarded to the management's agenda to be discussed and decided by the top management team. The management's dominant logic and industry beliefs are indirect factors that tend to strengthen the status quo, making changes to the dominant logic more difficult.

The model (H) is focused on the identification of potential barriers, and does not fully explain the connection between individual attention and the management's agenda. However, barriers to individual cognition, perception, and attention are also barriers to an issue's rise to top management's agenda.

### **2.3 Top management's role in PSM-related decision making**

The understanding, support, and commitment of top management have been suggested to be key drivers and an explanation for the successful transformation of purchasing's role towards strategic supply management (SSM) (Rajagopal & Bernard 1994; Hughes, Day, & Hughes 2005; Schiele 2007; Trent 2007).

Empirical findings from radical turnarounds and change projects seem to emphasise top management's role in the evolution of SM: "We identified executive leadership and support as key enablers....A key element was the enabling role that the top management played" (Johnson & Leenders 2005, pp. 302-303); "It seems very much as if the involvement and dedication of top management to support this change were the most important prerequisites for the – eventual – success." (Axelsson 2005, p. 288). Presutti and Mawhinney (2007, p. 37) demand that "...management must commit to developing an understanding of how SM performance can impact financial performance." Hughes et al. (2005) provided convincing evidence that senior management support was crucial for developing the role of purchasing.

"Gaining sustainable advantage from strategic supply management will never become a reality without leaders who have the vision, will, and determination to create a world class supply organisation" (Trent 2007, p. 19). In his study on linkages between corporate strategy, supply strategy, and company performance, Hofmann (2010) points out that most of the academic literature continues to relate SC strategies (i.e. SM) to the functional level. These findings indicate that the recognition of SM seems not to have co-evolved linearly with the increasing share of the external spend, which leads to an apparent mismatch between the relative importance and low appreciation of PSM within management.

Top management's role in PSM-related decision making has been studied to some extent, e.g. in connection with green and sustainable supply management (Giunipero, Hooker, & Denslow 2012; Yu-Xiang & Shang-Yung 2012; Dai, Montabon, & Cantor 2014) and the adoption of RFID (Reyes, Li, & Visich 2016). All these handle the

adoption of new views, which obviously suggest implications for both the organisation and use of resources.

Sandberg and Abrahamsson (2009) divided top management's participation in supply chain-related decision making into four archetypes: supply chain thinker, relationship manager, controller, and organiser for the future. This framework can equally well be applied to PSM as well.

Roh, Krause, and Swink (2016) studied the antecedents and consequences of the appointment of chief supply chain officers (CSMO) to the top management team. The nomination of a functional officer to the top management team is another form of the manifestation of the perceived importance of an issue, as it indicates that these issues are worthy of regular discussion in the top management team. Roh et al.'s broad longitudinal study reveals that financial leverage, internationalisation, and diversification predict the appointment of a CSMO, and in this context the CSMO moderates firm performance positively. They also identify signs of mimetic isomorphism (see Chapter 2.2) in late mover nominations of CSMOs. Compared to CSMOs, there are only a limited number of CPOs (Chief Purchasing Officers) in top management teams. However, the findings of Roh et al. seem reasonable and their applicability or differences in the CPO context would be worth studying.

## **2.4 The evolutionary development of PSM**

“It is less important to discover where an organization is than to understand how it got there” (Hedberg 1976 in Dijksterhuis et al. 1999).

A study on the general long-term evolution of the supply market interface of industrial firms would possibly open up some views which could not be seen either through just the contemporary literature or short-term studies. As early as 1962 Chandler emphasised the influence of a firm's history on strategic decisions (Chandler 1962). It is natural to view a firm's strategic and operational questions and decisions against the evolution of the business environment (Simon 1993). The personal constructs and mental models of individuals, as well as the worldviews of organisations (socially negotiated orders), also evolve through sensemaking of individual experiences and history (Daft et al. 1984; Kamann et al. 2004).

*The chapters that follow are an updated and shortened version of my working paper (Iloranta 2006).*

Early years of industrialisation until war periods

Emiliani compared the behaviour described in a selected set of textbooks on PSM from early in the last century to current purchasing practices and found that those early books presented a deep understanding of the dynamics of supply relationships in varying situations. She also identified that the practical behaviour of many current organisations does not meet that advice and those standards, and that the level of professionalism has not even stagnated: “Rindsfoos, Twyford, Dinsmore, Hysell, Harriman, Gushèe and Boffey, and Lewis (the reviewed authors of books on “scientific” purchasing) would be disappointed to learn of today's continuing and amplified focus on unit price, the narrow view of purchasing, and the general

disregard among top managers for the knowledge and skills of purchasing professionals” (Emiliani 2010).

#### National protectionist markets, 1950-mid-'70s

Between them, the world wars and the general economic downturn had a remarkable effect on global trade. Protectionist measures within trade were taken and all the participating nations focused on rebuilding their internal infrastructures and industries. Construction, engineering, and product development were nationally appreciated professions, and export managers were admired knights. The marketing concept expanded rapidly after the Second World War (Pinkerton 1999). The national trade balances were under strict control, and imports continued generally to be regarded as less desirable even in the '70s (Iloranta 1975).

If the main business focus is national, imports are less valued, and the marketing organisations appreciated, what is the role of purchasing? The potential suppliers are probably well-known national companies who knock regularly on the door. In fact, purchasing's apparent role tended to be more like that of a post office, conveying needs and goods between production or R&D and a few established suppliers. As a support function, purchasing in this period was usually centralised in larger organisations. The central office buyers were far away from the needs of line management, and thus most often could not be of any great help, even if they were asked to be. The relative importance of this “post office” for business was low and appreciation minimal. In this situation high intellectual capabilities or complex organisations within purchasing were not needed. The work was transactional, and the capability to organise competitive bidding rounds was comfortably enough. It is not surprising that the internal appreciation of purchasing became low in these circumstances. To compensate for this, the purchasing function itself tended to emphasise its power towards the suppliers, thus strengthening a cold arm's length attitude.

#### Materials management, mid-'60s-early '80s

From the purchasing point of view the growth of the aerospace industry during and after the war years is of importance. The War Department in the US, as well as other similar governmental organisations, needed large amounts of complex products quickly. The complexity needed broader concepts than just the purchasing of goods, to manage a broad spectrum of complex deliveries that were well synchronised both technically and logistically, thus gradually building concepts of holistic materials management (Davies 2002). Although a broader scope of materials management had been developing since the war, the first textbook on this issue was only published in 1962 (Ammer 1962). The scope of materials management is typically understood as covering the control of inventory, production, subcontracting (make/buy), stores, purchasing, transportation, and, finally, the disposal of surplus and scrap (Pinkerton 1999).

The broader thinking broadened the organisational concept of the interface towards the supply markets. It also aroused conflicting internal interests in integrated organisations. Finance wants zero inventories, production wants safety stocks, and marketing wants warehouses full of finished goods. Design engineering continued to act on its own initiative (Pinkerton 1999).

For the first time, purchasing came to be seen as a profit centre (Pooler 1964; Ammer 1969), as material savings have a greater ability to leverage profits than merely increasing sales does, but its organisational role did not develop accordingly. Materials management and purchasing were left supporting other functions and logistical aspects were emphasised. In the '70s logistics became a broadly discussed issue, bringing the scene within the area of materials management.

#### Influence of Japanese management models, '80s-

Japanese companies became more and more competitive in the areas of toys, automobiles, and electronics in western countries from the '70s onwards. Their systematic penetration of market after market created fear and admiration. The Japanese Total Quality Management approaches were identified as a competitive weapon, and many western companies tried to adopt selected TQM tools to meet the competition. These tools were regarded as magic tricks, but soon it became obvious that the Japanese had also had a totally different approach to the management of supply and suppliers since the '30s (Pinkerton 1999; Sako 1999).

Besides TQM, Just-in-time thinking was the terminological core of this Japanese model, but it also meant lean production, zero inventories, and full utilisation of human capabilities in all dimensions. More than a model, it represented a totally different management logic (Helling 1990), which appreciates individuals as thinking and skilful human beings, instead of just parts of an organisational machine (Ichniowski et al. 1999). This logic was identified and utilised in the US and Europe from the '70s onwards, but the adoption process was slow. Western managers had (and still have) real difficulties in understanding that the differences are deep in terms of the values, attitudes, and management logic, not just individual management tools or methods (Sei 1991; Ichniowski et al. 1999; Liker 2004).

Just-in-time thinking had a remarkable influence on the purchasing function. Competitive bidding had earlier been the key tool of the buyer, emphasising a cold attitude towards individual suppliers and readiness to change the supplier at any bidding round. Just-in-time and total quality thinking raised the process costs between supplier and the buying company and identified sources of waste in work, time, material, and money. The relationship between the supplier and the buyer gradually became warmer and more open, allowing a reduction of controls and leading to increasing overall trust in each other. Various sources of waste were reduced jointly. Partnership forms of buyer-supplier relationships became the trend.

The partnership orientation also had apparent implications for the role of purchasing. As the relationships became more and more partnership-like, companies began to rely more and more on single suppliers, or partners, within each purchase category. This approach led to increasing dependence on selected suppliers. Tim Laseter identified a challenge and risk in this development. When the relationship with a partner becomes tight and long-lasting, the buyer has fewer and fewer opportunities to control the cost levels of the good or service supplied, leading to increasing relative cost levels (Laseter 1998). In partnership-oriented organisations the purchasing function again became that of a gatekeeper, now with a focus on optimising the logistics process costs together with the supplier.

On the other hand, the partnership orientation limited the interest and capacity to source and evaluate external opportunities. The suppliers were mainly well-known and in long-term relationships, and thus no supplier files or supplier databases were

systematically built. The supply market intelligence of the company gradually decreased. The purchasing organisation grew inbuilt blinders (Villena et al. 2010). In the longer term this limited a company's ability to source new suppliers and manage its supply base with a strong hand. This was the situation in many organisations at the time when new global markets began to open up at a relatively high pace.

#### Evolving strategic views of PSM and external resources

The purchasing literature has traditionally been built on the hierarchy-market dichotomy, which regards the legal border between a company and its environment as decisive. The borders of a firm have been discussed since Ronald Coase's evergreen *The Nature of the Firm* (Coase 1937). Coase defines the border of a firm through two alternative coordination mechanisms (for the use of resources), conscious planning within firms and spontaneous price mechanisms between firms, their suppliers, and customers. A resource is either managed within a firm as an internal resource or bought from outside as an external resource. This thinking was further manifested by Oliver Williamson in the theory of Transaction Cost Economics, which was the leading paradigm of supply management literature for a long period of time (Williamson 1981, 1991). TCE is based on a clear differentiation of Coase's two modes of coordination, although Williamson identifies and discusses phenomena which threaten/reduce the clarity of this differentiation. TCE simply tries to answer the questions "Make or buy? Planned or subordinated to market forces?" and argues this decision only through the costs and risks of governance of an individual transaction. Williamson identifies bounded rationality and adopts behavioural views of the costs of governance, e.g. by emphasising that the risk of the other party's human opportunism is a potentially remarkable cost for the buyer. He takes it for granted that any individual may behave less rationally and even opportunistically in a business relationship if the potential reward is high enough (Williamson 1991). Williamson's basic hypothesis is that different transactions (different types of use of resources) ask for different governance mechanisms. Thus he argues for the careful segmentation of (internal and external) resources.

With a make/buy decision an activity is perceived as being moved from the planning mode of coordination to a price-based transactional mode of coordination, thus freeing the management's hands for more important internal "core" issues. Outsourcing has been a trendlike phenomenon since Prahalad and Hamel's 1990 article on core competencies (Pralhad et al. 1990). This move seems to implicitly take for granted that the invisible hand of markets as the mechanism of price coordination works automatically, i.e. the outsourced activity can be utilised cost-efficiently and flexibly because of the invisible hand of market forces.

Make/buy decisions have been perceived as being important, typically being regarded as carefully decided strategic top management issues. However, dozens of studies prove that outsourcing projects often fail. Many papers, especially in the consulting world, have tried to assess the causes of failures and also develop means to avoid failures, e.g. "Profits or perils? The bottom line of outsourcing" (Jackson, Iloranta, & McKenzie 2001). We identified five typical reasons for failed outsourcing projects: 1) weak understanding of the "core" of the company; 2) outsourcing because others seem to outsource; 3) weak total cost and value modelling; 4) wrong selection of supplier, because of weak evaluation of the supplier markets, and 5) weak capabilities to manage the outsourced activities. The latter three indicate weak PSM

professionalism in decision making, probably because the PSM organisation was typically not connected in any way to the evaluations and decisions. The root causes of these five typical failures of outsourcing processes have not been carefully addressed. Could one root cause of failures be an implicit perception of market competition as an effective mechanism to coordinate the external resources used?

At the beginning of the '80s new ideas concerning the supply interface were born, partially as a reaction to and/or modification of Japanese holistic models. An epochal event, an ignitive spark towards a strategic attitude to purchasing, was Peter Kraljic's 1983 article "Purchasing must become Supply Management". Although it has now been discussed for 33 years, a truly strategic approach to purchasing and a corresponding organisational role of PSM still seem to be rare in average companies.

Kraljic proposed a model to segment the purchases category by category on the basis of the relative importance of each category to the buying company and the features of relevant supply markets of this category. This segmentation offered a logic to identify and handle various purchases in different ways on the basis of the supply market features and strategic importance of the purchase (Kraljic 1983). It also opened up the possibility of seeing new economic opportunities within purchasing. This was an apparent start of an increase in the recognition of the role of purchasing. The principles of this and similar matrices to segment either spend categories or suppliers are the cornerstones of modern education in purchasing and supply management. The matrix addresses two central concepts of modern SSM, namely the total cost implications of purchasing decisions and the power balance between buyers and suppliers.

In 1984 Oliver Wight looked for the first time at the entire flow of both the incoming materials and outgoing products as a system. This evolution improved the internal communication between purchasing and production, but did not improve the external communication or internal co-operation with product development (Pinkerton 1999).

D.N. Burt developed a cross-functional team approach in a partnership atmosphere, taking a major step towards supply chain management (SCM) with his "Integrated Procurement Systems" (Burt 1984), but John Houlihan is generally regarded as the father of this concept on the basis of his making the first academic use of the term SCM (Houlihan 1985). A Booz Allen Hamilton consultant, Keith Olivier, has been mentioned as having used this term already in 1982 (Booz Allen Hamilton's document databases).

Michael Porter emphasised the importance of supply and suppliers for business success, but performed a disservice to supply management by characterising purchasing in his often quoted value chain picture as a support function and taking a quality- and logistics-oriented attitude (Porter 1985). The construction of the supply (value) chain, i.e. the sourcing, evaluation, negotiation, and implementation of a new supplier, is not at all visible in Porter's well-known picture. What are the implications of this well-known value chain model for the mental models of students of industrial economics, the future leaders and top managers?

In the '80s there was a remarkable trend of decentralising large corporations into independent business units. The trend spread further to minor companies, covering all functions, including purchasing. In companies where all the business units use different goods and materials, this is no problem, but in situations in which several

units were using the same goods or materials, the decentralisation typically reduced the negotiating power of purchasing and thus its role and appreciation.

The idea of fully competitive markets, where the price mechanism is expected to guide selections and take care of efficiency, is based on several implicit expectations. Friedrich Hayek was the first to publicly question price as a coordination mechanism and the implicit expectations behind Adam Smith's "invisible hand" of markets (Smith 1776/1990, Hayek 1937). His key idea was the importance of knowledge for the proper functioning of the price as the coordination mechanism. Drawing further from his insights, the prerequisites of fully functioning price coordination mechanisms would be 1) many competing bidders, who 2) cannot coordinate the prices among themselves, and, 3) are offering similar products/services, and 4) are interested in/dependent on this potential deal, and that 5) all the players involved have the same knowledge of the costs to deliver and all the alternatives. Situations which meet all the above criteria are relatively rare in the current business environment. Several reasons for this phenomenon can be identified.

- 1) The outsourcing trend has created various new supply relationships, where competition is often shut out with long-term contracts, practical arrangements, or the knowledge advantage of the existing supplier.
- 2) An important tendency within marketing since the '90s has been "customised solutions". The objective is to provide better service, but also to bind a customer to the supplier's offering and limit competition.
- 3) The supply offering consists more and more of different forms of knowledge, which has long-term implications that make it impossible to value the offering or relationship simply with costs or prices.
- 4) The value of cooperation has become better and better understood and the arm's length relationships with suppliers that were prevalent earlier have been replaced with different kinds of "partnerships".
- 5) The purchased spend consists of more and more complex product and service entities, which are not easily comparable. When a single price gives a reference point in standard commodities, complex calculations and assessments of the total cost and value implications would be needed in comparing those complex offerings.

A common insight of modern textbooks into purchasing and supply management is that really openly competed supplies represent only a limited part of an industrial firm's supply (e.g. Weele 2010; Iloranta et al. 2008/2015; Trent 2009; Leenders 2004). Most of the externally purchased spend is acquired from suppliers which, in this relationship, are not under directly comparable competition. The situation does not either meet the other criteria conveyed by Hayek. The "market" of the traditional dichotomy seems to cover only a minor share of the externally purchased spend. Two evolutionary changes have a remarkable influence on the role of knowledge in intercompany relationships. The average complexity of the goods and services traded has been continuously increasing and on the other hand, the cost of knowledge has decreased dramatically.

*The following chapters are a shortened and updated version of our working paper presented in NOFOMA (Aminoff, Juhantila, & Iloranta 2010).*

### Strategic aspects of PSM

Strategy as such is an elaborate concept and can be defined in several ways. Johnson and Scholes (1999) define strategy as follows: *“The direction and scope of an organization over the long term: which achieves advantage for the organization through its configuration of resources within a changing environment, to meet the needs of markets and to fulfill stakeholder expectations.”* MacCrimmon (1993) defines strategy simply as a set of coordinated actions. *“The two most basic properties required for any strategy are: 1) strategy is a series of related actions involving resource deployment; 2) strategy is goal directed with the goals serving to coordinate the actions.”* Porter (1996) argues that strategy is about being different and about choosing what to do and what to leave undone. Strategy can also be defined as actions to build a competitive advantage that is inimitable and provides protection against external threats (Porter 1985). It has to be the basis for the creation of a valuable, preferably unique position for the company (Porter 1996). Additionally, many more definitions of strategy have been given in the literature, one main stream of discussion being the balance between planned strategies and emerging adaptive evolution models (Ansoff 1991; Mintzberg 1994). Despite varying definitions, the general thought behind them all is the same: the goal that is set is to survive and become better, and strategy helps to formulate a consistent plan to get there. The deployment and allocation of available resources and capabilities lie at the core of strategic thinking.

Strategic purchasing has two basic alternatives in interrelating with corporate strategy. The first one is that the strategic purchasing task and thus purchasing strategies are derived from the corporate strategy. The other one is that purchasing contributes to the corporate strategy through an interactive or a circular process. It should, however, be taken into account that an intended strategy should not be a rigid definition of future events, but is heavily influenced by emergent strategies (Juhantila 2001; Mintzberg 1990).

Until 1980 the general attitude in the purchasing literature was selection-oriented and there were no implicit recognition of the buyer’s power to induce changes in the supplying markets. Steele and Court (1996) propose that behind an active, strategic approach to purchasing and sourcing there is a belief that a buyer can have an influence on the supply market. Emery and Trist (1963) had already opened up the view of this interorganisational influence, and this insight was strongly built into the pioneering articles of Peter Kraljic, David Burt, and John Houlihan in 1983-1985. A firm’s external supply chains and markets can be managed, but different supplier markets deserve differentiation in purchasing behaviour and supply management. They also identified the idea of the transparency and visibility of all costs, an idea which was further developed towards modern total cost thinking (e.g. Ellram et al. 1998). Penrose (1995) takes a more general point of view on these issues: *“the environment is not something ‘out there’, fixed and immutable, but can itself be manipulated by the firm to serve its own purposes.”*

In 1965 Ansoff already saw that *“the strategic problem is concerned with establishing an ‘impedance match’ between the firm and its environment”* (Ansoff 1965, as

quoted by Simon 1993). Regarding this match between a company and its environment, we limit our interest to the supply market side of the organisation's environment and thus the role of the organisation's supply market interface, which is typically called "purchasing" in everyday language.

The strategic aspect of purchasing has mostly been discussed in the literature from three different approaches: 1) strategic purchasing, 2) purchasing strategies, and 3) the evolution of purchasing into a strategic function.

### Strategic purchasing

Strategic purchasing is, as defined by Steele and Court (1996):

*"the development of ways of approaching and interacting with the supply market, taking account of not only the present situation but also how it might develop in the future. It is based on the belief that the buyers can determine and change the supply market within which they function. Strategic purchasing cannot be applied to the market as a whole but only to specific situations within it. Thus it is possible to have a strategy for the acquisition of such diverse products as printed circuit boards or flour, but not for all commodities treated as one item."*

In the literature, there is some discussion about the factors affecting "the level" of strategic purchasing in the company. According to Carr and Smeltzer (1997), the level of strategic purchasing applied in a company depends on four factors: 1) the status of the purchasing function within the organisation; 2) the knowledge and skills of the purchasing staff, i.e. their ability to contribute to a company's objectives; 3) purchasing's capability to take risks, e.g. taking advantage of new opportunities, and 4) resources, including access to information. According to a research study by Carter and Narasimhan (1996), the five factors assuring the purchasing function's strategic position within the company are: close linking of purchasing management's goals with company-level strategies; intra-purchasing organisational efficiency; close relationships with suppliers; active integration with other functions, and a suitable atmosphere within the purchasing organisation.

Markham et al. (2002) argue that sourcing activity can be considered strategic only when companies examine supply market options to address critical business issues and Pearson et al. (1996) argue that purchasing can achieve a strategic status within an organisation only if it has access to participation in the work of cross-functional decision-making teams – this again provides for cross-organisational acknowledgement of purchasing.

Giunipero and Vogt (1997) researched the existence of such cross-functional teams. According to their findings, the most common ones discuss subjects such as cost reduction, inventory reduction, supplier certification, standardisation, commodity management, or quality management.

Managing purchasing through a strategic approach gives a company an opportunity to fully utilise the potential provided by the available markets. This, however, is possible only through cross-functional participation in strategic decision making (Juhantila 2001).

### Purchasing strategies

Steele and Court (1996, p. 13) explain purchasing strategy:

*“Purchasing strategy is concerned with identifying, selecting and implementing an overall change programme designed to place the purchasing process at the heart of the business, so enabling it to make the maximum contribution to corporate profitability while gaining a commercial competitive edge. Among other factors, it encompasses defining the mission of the function, the framework within which to work and the type of organization and staff which will be employed. It is the foundation on which strategic purchasing is based.”*

In reference to the strategic purchasing definition of Steele and Court (1996), their core finding is that there cannot be only one universal strategy for acquiring a range of materials. The strategy must be adopted and fitted case by case to each different area of purchased items. It has to be flexible in order to adapt to changes in the business environment or internal resources (Leinonen 1999, p. 144). As the cycles within industry have shortened significantly, especially during the 1990s, it has created a need for responsiveness and flexibility in the whole supply chain the company is involved in and thus calls for time-based competitive strategies in purchasing too (Rich and Hines 1997). )

Freeman and Cavinato (1990) argue that purchasing activities must be synchronised with company strategy in order to enable survival in today’s rapidly-changing business environment. Purchasing strategies cannot be optimised and purchasing cannot be considered strategic unless both have a tight connection with the company’s strategic management, strategies, and strategy creation process.

To enable successful strategic purchasing, a purchasing strategy is needed for each commodity or equal group of purchased items. These are often called category strategies. The essence of a category strategy is to create the greatest value for the company by leveraging external resources and capabilities. For key categories, strategies will need to explicitly address: how companies will speed up new product development and obtain supplier technology innovations; how they will implement and achieve the best theoretical price for a category worldwide; how they can stimulate the creation of new products and services with the support of suppliers, and how the category can become a source of new revenues. As part of this process, organisations will define “value” better and will increasingly apply total cost and value decision-making tools to assist in sourcing decisions (Monzcka & Markham 2007). The challenge is: “How can we develop our category strategy in such a way that we will best be able to obtain cutting-edge innovation, capabilities, and performance today and tomorrow while blocking/delaying our competitors from achieving the same results?” Key success factors in building purchasing strategies are to understand the need for differentiation based on purchased items and their markets, as well as the need for flexibility to enable adjustment to the evolving business environment.

#### Evolution and maturity of purchasing towards strategic activity

The evolution and maturity of purchasing has been widely discussed in the purchasing literature (e.g. Reck & Long 1988; Paulraj et al. 2006; Schiele 2007; Cammish & Keough 1991). This approach is closely linked to the strategic aspect of purchasing as it is assumed that purchasing develops from a passive clerical function towards a more proactive, strategically-oriented function (Reck & Long 1988). Maturity has been defined as “the level of professionalism in the purchasing function” (Rozejemeijer et al. 2003). A maturity model describes the stages an

organisation is expected to go through in its quest for greater sophistication (Schiele 2007). Mature purchasing organisations apply world-class best practices, while unsophisticated ones fail to employ them (Ellram et al. 2002). The assumption behind these models is that greater maturity is associated with better performance, although most of the models are conceptual. Schiele (2007) performed an empirical study to show the maturity-performance link. On the basis of a literature review Schiele built a maturity profile that included the following elements: procurement planning, organisational structure of purchasing, process organisation, human resources and leadership, and purchasing controlling. Schiele found that there is a positive correlation between the maturity of a purchasing organisation and the perceived savings potential. This means that more mature organisations are perceived as having greater savings potential than poor organisations. The opposite outcome could also have been expected: poor organisations that have failed to identify savings potentials in the past might have greater savings potential.

“Absorptive capacity” (Lane et al. 2006) helps to explain why mature purchasing organisations are perceived as having greater savings potential. According to this concept, when adapted to purchasing, purchasing departments learn more from their environment if they have a high level of in-house competence and a higher maturity level. A firm’s absorptive capacity depends on its organisational set-up (Cohen & Levinthal 1990), effective internal knowledge sharing, and the level of cross-functional integration (Jansen et al. 2005; Meeus et al. 2001) and type of relationship with partners.

With low maturity, the basics have to be established first. This might mean defining processes or hiring trained personnel. Highly mature organisations can try to absorb best practice knowledge immediately since they have sufficient absorptive capacity. Failing to consider the point of minimum maturity and attempting to “leapfrog” development could result in the situation described by Ellram et al. (2002). They found that firms with poor financial results introduce the largest number of best practices but apparently do not profit sufficiently from them (Ellram et al. 2002).

## **2.5 Towards network thinking**

In recent decades there has been a growing interest in organisational thinking, from the internal processes of organisations towards the organisation-environment interface (Håkansson & Snehota 2006). Discourses on supply management and supply chain management have tried to widen purchasing’s perspective across the firm’s borders. Walter Powell and his predecessors had identified the hierarchy-market framework, which is the cornerstone of traditional approaches to PSM, as being more and more weakly applicable in present-day business environments (Powell 1989; Emery & Trist 1963). The evolution has continued further; business relationships seem to have more and more features not identified by the concept of open markets, and thus the conflict between business realities and the traditional mental frameworks is sharpening.

In recent decades strategy research has devoted plenty of interest to strategic networks. While classical economics assumes that there will be rational and self-interested behaviour as a rule, Granovetter argues for the deep embeddedness of firms and organisations in complex social networks: firms’ behaviours and institutions are so constrained by social relationships that they cannot be studied separately

(Granovetter 1983; Granovetter 1985). He also opposes Transaction Cost Economics because Williamson's notion of hierarchies overemphasises power and the notion of markets underemphasises the power of relationships. Granovetter's key claim supports the importance of networks and external resources, arguing that even complex transactions can be organised between individuals in different companies (not only within hierarchies) as a result of the strength of social relationships (Granovetter 1985).

The starting point of strategic network thinking is that in the present-day business environment it is unrealistic to regard a firm as an independent unit thriving to competitive advantage. Leaving the firm's external networks out of the analyses leads to faulty strategic conclusions. The network point of view offers potential explanations of e.g. industry structures, the nature of competition, entry barriers, strategic positioning, inimitable resources and capabilities, coordination costs, and dynamic benefits and limitations (Gulati, Nohria, & Zaheer 2000).

Strategic networks and alliances have been discussed broadly in the strategy literature. Jarillo discusses the concept of networks and compares this view to Transaction Cost Theory. A strategic network is formed when a firm outsources activities to efficient actors while retaining its core activities, which create a competitive advantage, thus reducing the transaction costs of the whole (Jarillo 1988). Blois criticised this perspective for its lack of clarity and the difficulty of sharing the transaction costs (Blois 1990). Gulati and Doz studied the formation of alliances (Gulati 1995; Gulati 1998; Doz 1996). Powell, Koput, and Smith-Doerr studied technological innovation and learning in networks (Powell et al. 1996). Khanna, Gulati, and Nohria studied alliances where the core is learning, either from the other party or together (Khanna et al. 1998). Gulati and Singh evaluated the architecture of cooperation, managing coordination costs, and appropriation concerns (Gulati et al. 1998).

Network theories differentiate weak and strong ties between firms and individuals. The partnership orientation aims to strengthen a few strong ties, but also exploits their weaknesses, limiting potential weak ties, e.g. the identification of new potential suppliers, and the adoption of new ideas (Granovetter 1983; Villena et al 2011). A relatively fresh phenomenon is the convenience and openness of social media, which has dramatically reduced the costs of different weak ties and thus at least partially allows the disadvantages of a few strong ties to be avoided.

## **2.6 Towards external resource management**

A common feature of the concepts of strategy discussed above is the deployment of resources. The strategy aims to use the available resources optimally. This view suggests that when external resources represent the majority of all the resources used, as is the case in average industrial firms, external resource management should be a strategic top management issue.

A resource-based view of the firm has been developing since the '80s as an important avenue in strategy research, initiated by Wernerfelt (1984, 1994). The previously discussed idea of core competences and the consequent outsourcing trend are immediate applications of the resource-based view. Barney connects a firm's resources and competitive advantage and suggests that a sustainable competitive advantage requires resources which are valuable, rare, imperfectly imitable, and not

substitutable (Barney 1991). The cognitive limitation of these insights seems to lie in their perception of a focus on internal resources only.

In his dissertation Aki Laiho argues that: 1) external resource management exists as a concept and can be applied in pragmatic supply management; 2) external resources can be orchestrated (managed), and 3) managerial situations differ and can be segmented and categorised (Laiho 2015). Laiho emphasises the diversity of supply markets and supplier relationships, asking for very different practices to manage them.

Andrew Cox argues that very few companies manage their supply chains and external resources effectively, because they lack resources and capabilities (Cox 2004). Again, missing resources and capabilities signal that the perceived importance of PSM is not high enough to earn resource allocations which are top management decisions.

During the last few decades, non-product-related purchases, both of goods and services, have grown remarkably. The main causes have been the dramatically increasing IT spend and the growing outsourcing of non-core service activities. Until very recently, non-product-related purchases in many companies were fully decentralised to various users and user organisations. The non-product-related purchases have been left out of the baskets of PSM experts (de Boer, Holmen, & Pop-Sitar 2003). In most companies the product-related external spend seems to be reported as purchases, while the indirect spend is typically reported as “other costs”, fragmented under different functions and managed in an extremely decentralised manner. Naturally, the situations and needs vary, especially depending on the know-how and know-what capabilities of the internal customer versus PSM experts.

However, along with the outsourcing trend, the increased share of the indirect spend has also increased the relative share of the externally purchased spend, i.e. the use of external resources. Top management’s role in setting the policies of the firm, either consciously or unconsciously, may be crucial (de Boer et al. 2003).

Traditional PSM evolved as a functional approach to meet the needs of production-focused industrial firms, but it does not offer satisfactory frameworks for managing the full complexity of present-day industrial systems and networks. External resource management is a term that is more and more used to describe the broadening and opening views of supply management in complex business networks. The wording is often used with slightly different meanings. Sometimes it seems to be just a new name for PSM including the indirect spend, but broader views have been suggested (Cox & Lamming 1997; Tanskanen et al. 2012).

Håkansson et al. identify in their conceptual paper that it is difficult for the organisation to influence some of the internal resources, while on the other hand, some of the external resources and activities can be seen as integral parts of the organisation itself, and can be influenced and controlled. They suggest that instead of a division into “internal” and “external”, resources should be divided into controllable and non-controllable ones (Håkansson et al. 2006). This would open up totally new views of the borders of the organisation and organisational concepts.

There is a growing number of business models in which it is difficult or impossible to grasp the business with production-centric functional mental models (e.g. Blank 2013; Petersen 2002; Santalainen & Baluga 2016). For a modern entrepreneur “all the (potential) resources are external; only his/her brilliant idea is internal” (a participant of the Aalto Fellows- program). The traditional functional organisation model is very probably not the optimal solution for new types of businesses.

## 2.7 Evolving behavioural views of PSM

Despite the growing understanding of the effect of human motivation on the performance of industrial systems and processes since the Hawthorne studies by Elton Mayo (1927), John Boudreau et al. identify the separatedness of operations management (OM) and human resource management (HRM) (Boudreau, Hopp, McClain, & Thomas 2003). They claim that in this millennium OM models still commonly assume that people are not a major factor, and if they are taken into account at all, they are predictable, stationary, emotionless, and independent of each other and the environment, i.e. they behave much like parts of a machine (Boudreau et al. 2003).

The core of behavioural operations is the view that “human beings are critical to the functioning of the majority of operating systems, influencing both how these systems work and how they perform” (Gino & Pisano 2008). Gino and Pisano claim that operations research tends to be normative, focusing on how systems should work and neglecting human behaviour. They provide examples of the implications of behaviour for operations-related decision making and behaviour, e.g. overconfidence in supplier selections, anchoring and adjustment of resource allocation, and supply chain negotiation and forecasting.

Behavioural issues are always present in human decision making. Hämäläinen et al. show that “one gets completely opposite results depending on the way the phenomena are described and how the questions are phrased and graphs used.” (Hämäläinen, Luoma, & Saarinen 2013).

A central foundation of behavioural views of operations and PSM is the concept of the world as socially constructed (Weick 1979). On the basis of an individual path trajectory, each individual constructs/assembles his/her view of the world differently from small signals and pieces of information, knowledge, and incidents in order to make sense. Individual perception can be seen as an outcome of this sensemaking process (Weick 1995). The process searches for explanations and contexts where the identified details fit and make sense. As an outcome, what an individual sees is “usually an outcome of his/her prior actions. What they see is something of their own making” (Weick 1995).

Kamann and Bakker integrate Daft’s and Weick’s views within the purchasing and supply management context through showing that perceptions and social factors influence supply management. They build a model of PSM-related decision making as an outcome of three issues: 1) an individual manager’s interpretative scheme, developed through his/her personal experience path; 2) his/her status and position in the organisation and the negotiated social order in the company, and 3) the company’s worldview (dominant logic), or how things have to be done, i.e. the socially negotiated order of the organisation. They also identify the role of top management support, commitment, and understanding as important influences on the PSM behaviour of the firm (Kamann et al. 2004; Bakker et al. 2007).

Bakker et al. show empirically that purchasing professionals perceive their environments differently and that in their tasks and supplier relationships they behave in a way that fits the environment as they perceive it (Bakker et al. 2007). The

organisation's worldview (dominant logic, socially negotiated order) regarding purchasing affects both its perceptions and its behaviour. The purchasing function's role and position (negotiated social order) in the company determines how strongly purchasing can affect the company's common dominant logic.

Boudreau et al. build a framework covering four elements of behaviour: capability, opportunity, motivation, and understanding, each of which affects human performance in complex ways. They conclude through examples that a clear operational focus is crucial for human resource management initiatives (change management/performance improvement), and on the other hand that understanding psychological and social factors is crucial for optimising the performance of e.g. production systems and networks. They also ask what the mental models of actors are and how they can be influenced (Boudreau et al. 2003). Kundu et al. build a long-term review of the journey of operations management from normative to behavioural, from 1934 to 2015 (Kundu, Jain, Kumar, and Chandra 2015).

A key challenge of modern PSM and external resource management is the quickly growing complexity of business environments and networks. System dynamics, earlier called industrial dynamics, is based on the insight that the core processes of organisations like PSM also involve critical feedback both internally with other functions and externally with other organisations, markets, and actors. System dynamics aims to create structural, behavioural representations of systems. (Editorial: *Journal of Operations Management*, 39-40, 2015).

The recent Handbook of Behavioral Operations Management links behavioural operations to three academic disciplines, i.e. cognitive psychology, social/group psychology, and system thinking/dynamics (Eckerd & Bendoly 2015). The authors identify three sources of the limitations of mental models and thus potentially even critical flaws in decision making:

- as a result of cognitive limitations individuals have imperfect mental models of reality, which allows room for biases and inherent heuristics in work contexts
- in a network multiple actors make the situations more complex, compelling individuals to consider the thoughts of others, which limits the views of all actors, which leads to still more limited mental models
- the complexity and dynamism of industrial systems, combined with multiple actors with cognitive limits, lead to extremely limited mental models of work contexts (Eckerd et al. 2015, p. 5).

The three disciplines, cognitive psychology, social/group psychology, and system thinking/dynamics, are all needed to understand all the cumulative challenges outlined above. Together they constitute the foundation of behavioural operations management (Eckerd et al. 2015).

## 2.8 Summary of the literature

The limitations of individual and group-level mental models lead to managerial decisions which are only boundedly rational, and based more on individual perceptions and beliefs than real facts. A path trajectory (individual experience and education) builds individual mental models, or worldviews, which differ between individuals. Organisations align the mental models of individual members through several processes (dominant logic, socially negotiated order). In tightly cooperating teams, such as a top management team, this manifests itself clearly. The alignment of mental models leads to the institutionalisation of concepts and beliefs, also across industries and communities.

Following the changes in the business environment continuously, top managers act as information filters, noticing and interpreting signals to make sense in their worldview and paying attention primarily to those which are relevant for their purposes. Management's agenda is an outcome of goals and reporting systems, the management team's and organisation's dominant logics, and individual education and experience, all building on institutionalised common beliefs and industry concepts.

PSM as part of operations management has been on a long journey from a normative, highly rational science to a behavioural approach, involving understanding a human decision maker's limitations and the many forms of bounded rationality.

Supply management is argued to be a strategic top management issue. Top management's understanding, support, and commitment have been shown to be crucial for purchasing's transformation towards strategic supply management.

In recent decades the evolution of the organisational role of PSM and top management commitment have not followed the growing relative importance of external resources and opportunities that have been opening up. This has not always been the case: before the world wars global trade was continuously growing, increasing the role, appreciation, and capabilities of PSM. PSM's key tasks, role, organisational position, and status have varied remarkably at different times, depending on business cycles and price trends. During the post-war decades trade policies created relatively static national environments. Local purchasing from familiar suppliers limited the need to develop international supply management and led to the stagnation of PSM resources and capabilities. In different decades there have been several trends in management practices which have acted as barriers to the growth of supply management's role. Holistic materials management concepts from the '60s to the '80s increased management recognition of purchasing, but the main emphasis was on logistics. Centralised purchasing organisations emphasised the transactional, supportive role of purchasing. Just-in-time and Total Quality Management directed the interest into optimising the supply chain with existing suppliers, but easily disregarded any interest in sourcing new suppliers or capabilities of doing so. The decentralisation wave improved the alignment of purchasing with production, but left the increasingly significant non-product-related purchases out of the basket and limited the utilisation of potential synergies and pooling power across units.

In the present-day business environment it is unrealistic to regard a firm as an independent unit aiming to gain an individual competitive advantage. Firms and

organisations are understood to be just parts of complex social networks in which the firms' legal borders are not decisive. Organisational thinking has widened towards networks, including e.g. suppliers and customers in an "extended enterprise". External resources are a natural part of a firm's network and can be not only utilised, but also influenced and managed by many means.

### **3. Research methodology**

In this chapter, I will describe the development and logic of the research methodology to create the prerequisites of transparency to enable the reader to later assess the credibility of my conclusions.

I selected a case study approach for four reasons. First, a case study is appropriate when there is only a limited amount of literature on the phenomenon of interest. Second, it would enable a richer and deeper understanding of the issues and factors, the interdependencies between them, and the mechanisms by which they relate to managerial cognition and decisions on SSM. Third, a case study approach with recorded interviews enables more flexibility for the research as well as more unexpected findings. Fourth, because of my seniority and top management experience, I had easy access to top management teams for interview purposes and am probably able to understand the thinking and logics of top management.

The phenomenon of interest, “top management’s cognitive barriers to external resource management”, would probably demand an understanding of complex and mostly subconscious cognitive mechanisms in practical situations. However, the conclusions should be strongly grounded in earlier pieces of related theories. To address these needs, the literature review and empirical research were performed in parallel. All the findings, views, and ideas during the empirical research process were compared to similar or analogical phenomena in the extant literature to find potential explanations, concepts, or frameworks. The term “systematic combining” has also been employed to describe this kind of research approach (Dubois, A. and Gadde L.-E. 2002).

Along with the literature review, in parallel with ongoing empirical studies and cumulating observations, it became obvious that there are applicable general theories which would potentially explain the findings (developed theories on managerial cognition and institutionalisation). Because these theories had not been broadly studied earlier within the supply management context, this research finally evolved towards theory elaboration in a new context, to contextualise and adapt theories on managerial cognition and institutionalisation to the supply management-related behaviour of firms (Ketokivi, M. & Choi, K. 2014).

#### **3.1 Unit of research**

The original phenomenon of our research interest was at the company level: why some companies seem not to utilise the strategic opportunities of SM. Both strategic decisions in general and the criteria of SSM presented earlier are company-level issues. However, an individual team member is generally the unit of research in cognitive and social sciences (Bendoly et al. 2010), which is also in line with the philosophical stance selected in this research. The phenomenon to be studied has been identified at company level, but I expect that individual executives are the drivers of company behaviour. Without cognition of new opportunities by any member of the top management team, no changes in dominant logics or firm behaviour are probable. An individual executive (and his/her thinking) is the basic unit of the research.

The practical research process has been an interplay between the evaluation of an individual executive's thinking and top management teams' logics, which ultimately drive company-level behaviour. The preliminary model focused on the potential influences of individual education and experience of SM-related perceptions and through them to understand the firm's SM-related decisions. I began by focusing on individual perceptions in the case company Alpha, identified strong dominant logics, endeavoured to take a more firm-level-focused perspective in the case company Beta, and finally dug deeper into the drivers and barriers of individual perceptions in the case company Gamma (pseudonyms employed to protect the anonymity of the case companies). The basic focus did not change during the research, but during the work, the findings pointed more and more towards the importance of common causal logics. During the work I have come to understand that, to find explanations for the weak company-level cognition of SSM opportunities, both the mental processes of individual decision makers and the (institutionalised) common beliefs of teams, organisations, and industries have to be understood. Through studying individual perceptions I will be able to create a broad understanding of the factors driving firm-level behaviour related to SSM, including common dominant logics and institutionalised perceptions.

### **3.2 The range and scope of the study**

My practical work within SM over the last two decades has been focused on large or mid-sized Finnish industrial companies that operate internationally. I felt it natural also to focus the study on this range, thus omitting trade and small companies. Defining the range in this way can be perceived as relatively homogenous with regard to SM-related challenges. National evolution paths, national industrial history, legislation, taxation, the costs and conditions of labour, the distance to larger markets, the typically similar education of top executives, many even from the same few universities, work culture, and the economic atmosphere are factors common to all the companies within the set range.

As shown in earlier sub-chapters, the effective strategic utilisation of supply market opportunities is a cross-organisational exercise and needs top management recognition, understanding, commitment, and decisions. Rather than only the CEO, top management team members are the natural focus of the study as, within the selected range, because of the Finnish management style, it is typical that most, if not all, important issues are openly discussed within the management teams and decisions are made jointly. Therefore, I selected top management teams (TMT) as the focus of this study. I do not study TMTs on their team performance, but invited the TMT members to interviews regarding their individual perceptions.

The top management team typically sets the strategic guidelines for its company and discusses resource allocations, organisational changes, and, especially, cross-organisational initiatives. To enable understanding of a company's strategic decisions regarding SSM, how top management team members recognise and react to changes in the environment has to be understood. The top management team might, for example, make decisions together, decide to announce them in the name of the team, develop common insights and perspectives on the world, and perceive causalities in the same way. However, an individual identifies changes in the environment, makes suggestions, participates in evolving common decisions, and develops and criticises

them. In the case company Gamma some other mid-level executives were also interviewed in order to gain a better understanding of the top management's thinking and the firm's behaviour.

In this study, I have focused on the cognitive mechanisms of top management team members who make or influence SSM-related decisions. I expect that individual executives' cognitive processes affect all the important decisions, although top management teams make important decisions together.

### **3.3 Purposeful selection of the cases**

Some authors suggest that case selection is the most important methodological decision in qualitative studies (Dubois et al. 2007; Eisenhardt 1989a). When the research objective is to explain why a particular phenomenon occurs, it is natural to search for a firm in which the focal phenomenon is most potentially rich and easily and transparently observable (Eisenhardt 1989a; Corbin, J. and Strauss, A. 2008). This is termed theoretical sampling or simply purposeful sampling. Below, I will argue the logic of the case selection case by case.

The preliminary study on the strategicity of purchasing mentioned earlier (Aminoff et al. 2008), was based on interviews with selected top-level supply executives in large industrial companies operating internationally. In one of the companies where the interviews took place, the apparent conflict between the high relative share of the purchased spend and the perceived purely operational role of PSM seemed to be exceptionally large. The phenomenon in which I am interested should thus be clearly visible within that organisation, which would be an optimal selection as the first case (Alpha). I had also personally trained the SM professionals in this company, and thus had some preliminary knowledge of the organisation. The company had indicated a research-minded attitude and readily facilitated top management interviews. Personal contact between the researcher and the case company naturally both widens the perspective on the company's internal complexity but also contains a risk of bias, which I will discuss later, along with other potential limitations on validity and credibility.

Preliminary analysis of the interviews in the case company Alpha revealed that the findings somehow related to key dimensions of the preliminary constructs and, thus, it was reasonable to proceed with the same approach and interview questions. The case company Alpha suggested some seemingly logical explanations for limited top management recognition of SSM.

The second case (i.e. Beta) was purposefully sourced utilising a clear criterion: to enable reasonable cross-case comparability, it should be contextually similar to the previous case company in as many dimensions as possible. For this purpose, to have a roughly similar role of the purchased spend it should be an industrial company, operating internationally and facing international competition. Preferably, it should operate in a different industry to avoid potential hidden implications of limited industry features. To avoid potential biases, which were an identified risk with the case company Alpha, it should not have had any previous contact with the research team. To give richer insights into the mechanisms of missing top management cognition, an optimal company would not have invested anything in PSM training or

development. Through another research team, a nearby optimal company, a mid-sized Finnish high-technology company, was identified and contacted; it agreed to participate. I knew the company by name and its strong reputation, but had no personal contact with the management before the first interviews.

The top management team members who were interviewed, numbering 21, in Alpha and Beta had revealed interesting perceptions and had already given some factual answers to the preliminary questions. A third company (i.e. Gamma) was originally considered to test the earlier findings and improve validity, and also to check whether there was something that had not been identified in the first two cases, either limiting anything in Alpha or Beta or opening new insights.

To explore further the mechanisms influencing top management cognition of PSM from another perspective, I endeavoured to identify a company in which a recent radical change in the top management's attitudes had occurred, witnessing a visible recognition of SM.

Gamma was identified as a result of reported significant savings and a visible change in top management behaviour after a cross-organisational SM training and development project. In this company, the change was visible and the management was eager to learn more by studying it. Gamma was selected purposefully to shed light on the process, what happens before and after top management's nascent cognition of the importance and opportunities of SSM. The objective of this case was to understand the perceptions of SM before and after the management's behavioural change and, further, to gain a deeper understanding of the cognitive factors barriering, hindering, and retarding the top management's decisions.

Again, as with Alpha, I had personally trained and advised Gamma's cross-functional category teams in the project and, thus, had some knowledge of the organisation. In the role of trainer and participant observer, I had followed the depth and eagerness of the category teams' work and seen the real results achieved both in economic terms and as changes in behaviour. To really see how the new category strategies that had been developed worked in practice, I had also participated as an observer in some important supplier negotiations.

The three companies selected represent different industries. Alpha and Beta represent two very different high-technology industries, both focusing on high-quality branded goods in global markets, also being market leaders in their national markets. Gamma represents a more slow-moving industry with relatively simple technologies. However, each company represents relatively slow-moving industries.

The operational focuses of the case companies also differed. Alpha and Beta represent highly R&D- and marketing-focused businesses. Especially in Alpha, product development projects were expensive and lengthy, handled as long-term investments by management. Margins were high because of successful R&D; however, so too were the risks relating to R&D projects' long time spans. In Beta, the key drivers of success were technological leadership and a top-quality product brand.

In both Alpha and Beta, purchased cost or supply market analysis played a minimal role in the R&D process. Once a supplier was selected to deliver a component or service for a product, they were seldom changed over the product's lifecycle.

Purchasing was more an internal service function, a supplement to production. The top management's focus in both companies was heavily on R&D issues and global marketing.

In Gamma, the management's focus was on the economic performance of local BUs that were running similar businesses across its home country. R&D and marketing played minor roles, although intimate sales and customer service were important success factors. The role of purchasing had changed radically towards SSM as a result of its newly-born recognition by top management.

#### *Features common to the case companies*

There were several features common to all three case companies. Two features were initially employed as criteria for selective sampling and are described below; further features were identified later, during the fieldwork.

#### Three well-performing companies with highly appreciated management

All three companies were performing well, both in the short and long term. Each case company enjoys a leading position in its respective national market within its industry/main business. This probably means that the top management to be interviewed was competent and generally appreciated, and that the reason for possible limited cognition of SM was not related to otherwise weak performance or weak management. It might also be expected that a poorly performing company is in crisis to some extent and cannot, for particular reasons, afford all the activities perceived as important. However, the selection of very differently performing companies might have shed even more light on the phenomena under study and shown this not to be the case.

#### International frame of performance

Each case company had an international frame of performance. Alpha and Beta competed in global markets with their products, being involved directly and/or indirectly in activities on several continents. Both companies had initiated sourcing from cost-competitive countries (e.g. China and India) and had small local organisational units in both of these countries. Gamma was a Finnish subsidiary of a global firm operating on several continents; however, the parent corporation was active in global coordination and encouraged, even required, regular and systematic cooperation and cross-learning between national BUs and openly compared business performance in detail across countries. Gamma had also just opened direct sourcing contacts in China as a part of a supply development exercise, followed by top management's nascent recognition of SM strategicity.

All of the companies could thus be expected to be exposed to the cost differences of various geographies and types of supplier, and to have regularly experienced very different business network models and supplier relationships. This background should encourage us to expect that the possible narrowness of each company's business environment might not hinder cognition of SSM opportunities.

### Increasing perceived competitive pressure

Each case company faced global competition, both locally and internationally, and most of the executives who were interviewed described increasing competition in some form. In Alpha, new cost-oriented global competitors were the key driver of increased competitive pressure; the key drivers in Beta were low-cost competitors and product copiers, especially from China, and increasing competition and new international players entering the national markets were generally the key drivers in Gamma.

Earlier supply management-related development initiatives were identified in each of the three companies

In all of the case companies, an earlier change initiative regarding SM was identified. The earlier initiative in Alpha, which occurred five years previously, had been limited to the centralisation of fragmented purchasing functions, new resources, and professional training as an internal exercise in the purchasing organisation. The focus remained functional. This research initiative itself later led to the reorganisation of indirect SM, and to the broad cross-organisational training of R&D teams.

In Beta, the earlier exercise had focused on a new plant and streamlined production and supply chain, but did not lead to top management cognition or to broad strategic utilisation of supply markets because of the tight relationships with existing long-term suppliers.

In Gamma, two earlier initiatives prior to the study were identified. The first cross-organisational training exercise, which occurred five years earlier, led to significant economic results but did not lead to top management cognition of SSM. Another SM training project was organised six months before this study's interviews. During the first seminar day, visible CEO cognition of SSM occurred, although it took longer for all the management team to really recognise the strategic opportunities.

Thus, through the interviews, participant observation, and other data, some level of visibility of five potential triggering development initiatives involving SM was gained in the three companies, each more or less successful.

### **3.4 The logic of interview planning**

George Kelly's theory of personal constructs is the epistemological basis for this work. It suggests that a human individual constructs his/her perceptions of the world in the form of anticipations concerning causal relationships, or individual constructs, which together form his/her individual construct system. When a person constructs a perception of the world with this kind of anticipation of what will follow from what (i.e. causal relationships), it would be rational to expect that in his/her speech the individual also reveals, notices, or describes the causal relationships between environmental changes, perceptions, reactions, and activities.

To get the opportunity to hear unbiased individual perceptions, the research setting should avoid the introduction of biases or presumptions and invite the description of logical stories and causal relationships.

The setting comprises the invitation to an interview, the presentation of the study, the interview questions, and situational arrangements.

#### Invitation

The selected interviewees from Alpha were invited and booked through the secretary of the purchasing department by telephone. In Beta, the SCM director organised the interview schedules and personally invited the interviewees. In Gamma, all the interviewees were phoned and invited by myself as I had already become acquainted with the interviewees through training seminars. Each interviewee was told that a one- to two-hour interview would be required to obtain his/her perspective on PSM, with no preparation needed. To avoid creating preliminary biases or preconceptions, information on the interview content was minimal. No information on the themes of the questions was delivered beforehand. All the interviewees who were invited accepted and attended their interviews without any hesitation.

#### Confidentiality of information

To be able to reach deeper individual perceptions, all the interviewees were promised full confidentiality of information within the limits of the validity and credibility of the research. Hence, the case companies are named Alpha, Beta, and Gamma throughout this paper. The cases are described with a focus on information that is regarded as being relevant to this study. The descriptions of the firms are as accurate as possible without risking the confidentiality of individual interviewees. The names, original data files, recorded notes, and all the other data are filed and were available to the research team and evaluators.

#### The interview setting

Most of the interview settings were similarly organised. Two interviewers were present during interviews documented in handwriting (i.e. Alpha) or, in tape-recorded interviews, there was mostly one interviewer. The interviewers briefly presented themselves and the overall scope of the study in generic terms. A short description of the study was shown to the interviewee (see Appendix), but he/she was not given a handout. The confidentiality of the interview was described.

The paper that was shown described the research setting in a generic way with a broad scale of issues of interest. The term “management cognition” was utilised as one potential issue of interest; however, it was hidden among several other potential factors. The idea was not to give the interviewee any reason to consider his/her own cognitive processes, as I was afraid that it might potentially have an immediate influence on his/her thoughts and, thus, the interview findings.

The setting was made as relaxed as possible. Most of the interviews were conducted in a calm negotiating room with more time reserved than needed. Together with confirmed confidentiality, this was also expected to encourage the interviewees to express the most individual opinions and perceptions.

For various reasons, a few interviews were arranged at the interviewee’s desk; in two of these the interviewees visibly wanted to attend to their next tasks. One interview was clearly shorter, with a need to limit questions. In three interviews, the researchers

had reason to believe that the interviewees did not dare or want to go deeply into their individual perceptions. These, in some sense, unsatisfactory interviews represent a minority and should not be regarded as giving misleading findings; they were merely less rich than the others.

Neither a hard copy description of the research nor the questions were given to the interviewees, and they were also asked not to discuss the interview with subsequent interviewees. Both of these practices aimed to minimise any possible influence on the conscious and subconscious perceptions of the executives to be interviewed later. No comments concerning previous interviews were heard, so this practice was apparently successful.

### *The interview questions*

Personal construct psychology suggests that open questions on perceived changes in the environment would lead an individual naturally also to describe related causalities (i.e. reasons, drivers, and hindrances) to make his/her story a logical description of the changing world as perceived by him/her. Thus, the causalities consciously or subconsciously expressed should describe the most important causalities he/she perceives.

The key interview question was a bid to elicit a description of the evolution of PSM in the respective company as perceived by the interviewees. Through an open question, an interviewee is given the opportunity to talk about his/her perceptions as he/she feels and wishes. This should enable the full richness of the real perceptions to be best heard in the stories.

As desired, the answers covered long historical paths, typically beginning at the start of the interviewee's career in the company. Complementary questions on drivers for and barriers to change were employed as necessary. The idea was to hear each interviewee's individual perceptions of issues in answer to the open question, but to utilise detailed questions to deepen the understanding of perceived barriers if the interviewee did not freely cover them.

In practice, questions concerning perceptions of strategic potential and its relative importance and also evolutionary perspectives on the future were asked in varying order, depending on the flow of discussion.

The interviews began by asking the interviewee to describe his/her career history with regard to SM. This aimed to elicit a broader perspective from the interviewee, to avoid an overly emphasised focus on the present organisational situation and daily challenges. It also revealed the width and depth of individual experience and education in PSM. If necessary, this was further confirmed through a detailed question. In Gamma, this question was not required as all but one interviewee had just participated in a long series of training seminars led by the interviewer, during which it was found that only the CPO had formal PSM education, although most of the others had participated in an earlier series of training seminars. However, most interviewees described their individual background and also their roles regarding PSM as a part of their respective company's history of PSM evolution.

Further questions in Alpha and Beta focused on individual perceptions concerning PSM and its role in the company. The questions were developed with preliminary

constructs in mind but were as open as possible, so that they would also enable other possible causes, explanations, and mechanisms to be raised. The interviewer endeavoured to avoid any indication of preliminary propositions and did not address them during the interviews to avoid causing biases, distortion, or framing in the answers.

The last set of questions was designed to gain the interviewees' insights into and practical knowledge of the methods of SSM and to evaluate their preparedness to identify alternative differentiation opportunities and participate in related decisions.

#### Experiences and findings on the questions and setting

The objective of all these research-setting practices was to maximise the authenticity and richness of the individual perceptions heard in the interviews. The interview setting and presentation paper seemed to create the desired situation; when attending, interviewees were motivated, many were openly curious, and only three seemed to have prepared in advance. The interview questions worked satisfactorily; some interviewees maintained a tighter focus on the question, and some often reverted to earlier issues when remembering a new aspect.

After their interviews, many interviewees commented that the discussion had triggered new interest and ideas about the issue; for example, "I should probably read a book on this." (Business development director, Alpha).

The first interviews were recorded manually and triangulated between the interviewers and returned within a day to the interviewee to be checked. Three interviewees made small corrections and one did not respond after repeated e-mails. This interview was the least rich and did not contain anything special; thus, its omission or inclusion did not impact on the findings. The tape-recorded interviews were transcribed by a research assistant and checked as soon as possible by the interviewer. They were not shown to or discussed with the interviewees.

### **3.5 Evolving research process**

As described earlier, a selective sampling method was employed sequentially in three phases. This enabled the selection of a potential case company in each phase of the study as understanding and further detailed research interest evolved. In Alpha, the interest was in cognitive factors overall and, especially, the preliminary construct. Beta was targeted to test the earlier findings and improve validity. In Gamma, increased understanding of the related phenomena moved the focus towards a change in perceptions: the perceived reasons for and implications of a radical change in the company's relationship with supply markets and external resources. Because of the evolving research interest, there were also some minor differences in research practices between the three cases.

The key interview question was the same across all the cases and interviews. The detailed questions in Alpha and Beta focused on perceived barriers to SSM. In Gamma the interviews focused on the change of perceptions around the nascent top management recognition of the strategic importance of external resources, to this way understand better the barriering factors.

### 3.6 Data gathering

As defined earlier, the primary scope was all the top management team members in the case companies. To get a richer understanding of Gamma, some other interviewees were also subsequently selected, but not all the top management team members were interviewed. The following list of interviewees cover together six CEO-level executives, two in Alpha, one in Beta, and three in Gamma, because of the opportunity also to interview previous CEOs.

#### *Data gathering in case Alpha*

The core of this study comprises interviews with the ten top management team members plus the previous CEO, who had been the initiator of purchasing centralisation five years earlier. The top management team comprised the CEO, CFO, three business area heads, and also the senior vice-presidents responsible for R&D, business development, legal issues, SC (i.e. production, purchases, and delivery), sales, and marketing. In all the interviews I presented the research according to the documented plan and had the role of an interviewer. A colleague was present at all but two interviews (AA = Anna Aminoff, doctoral student, AL = Aki Laiho, doctoral student, KT = Kari Tanskanen, professor). Both participants made separate handwritten notes, which were triangulated, discussed together, and then sent to the interviewee for confirmation that he/she had been understood correctly.

Background data and information were gathered by various means, including:

- analysis of fifty years of annual reports to understand the evolving share of external resources and to get indications of the role of PSM,
- spend data analysis by purchasing professionals,
- participant observation when facilitating training sessions within purchasing,- interviews with the head of purchasing and also discussions with other key members of the purchasing function.

Table 1. The list of interviewees in the case companies Alpha, Beta, and Gamma

Case	Title/role	Top MT	record	location	Interviewer	Conf fback	comments
Alpha	CEO	x	man	Office	KI, KT	x	
	Prev CEO	(x)	man	neg room	KI, KT	x	
	Sales	x	man	neg room	KI, KT	x	
	Economy	x	man	Office	KI, AL	x	
	Supply Chain	x	man	neg room	KI, AA	x	
	R&D	x	man	neg room	KI	x	
	BU 1	x	man	neg room	KI, AL	x	
	BU 2	x	man	neg room	KI	x	
	BU 3	x	man	neg room	KI, KT	x	
	Business devel	x	man	neg room	KI, KT	x	
	Legal	x	man	neg room	KI, KT		no confirming feedback
	Purchasing man		man	neg room	KI		several meetings
Beta	CEO	x	tape	Neg room	KI		
	Marketing	x	tape	Neg room	KI		
	Economy	x	tape	Neg room	KI		
	Business devel	x	tape	Neg room	KI		
	R&D	x	man	Office	KI		recorder broken
	Personnel	x	man	Office	KI		recorder broken
	Purchasing man		tape	Neg room	KI		
	Sales	x	tape	Office	KI		
	Supply Chain	x	tape	Office	KI		several meetings
	ICT	x	tape	Neg room	KI		
	Mgmt Team	x	man	Neg room	KI,KT		Reporting of prel findings
Gamma	CEO	x	man	Office	KI		Short, limited
	Prev prev CEO	(x)	man	Neg room	KI		In preparatory phase
	Prev CEO	(x)	tape	Office	KI		
	Resources	x	tape	Office	KI		
	CPO	x	tape	Neg room	KI		several meetings
	Business devel	x	tape	Neg room	KI		
	Junior BA 1		tape	Neg room	KI		
	Junior BA 2		tape	Neg room	KI		
	Senior BA 3		tape	Neg room	KI		
	Senior BA 4		tape	Neg room	KI		
	Business control		tape	Neg room	KI		
	Senior supervisor		tape	Office	KI		
	Sister company, SM		tape	Neg room	KI		
	Sister company, sale		tape	Neg room	KI		
Together 36 persons, of whom 26 top management team members.							

#### Data gathering in Beta

All the members of the management team were interviewed, including the CEO and VPs of marketing, finance, business development, product development, personnel, ICT, sales, and SCM. The purchasing executive was also interviewed as another key

source of supply-related data. During the data-gathering process, the composition of the top management team was changed; the interviews covered all the members of both the old and new teams.

The interviews were audio tape-recorded and transcribed. As a result of recorder failure, two interviews were recorded only with written notes and, because of an oversight, these transcripts were not checked later by the interviewees. These interviews did not seem to convey any differing messages or findings, but supported the overall findings.

Background data and understanding were also gathered through repeated discussions with the VP SCM. The first findings were tested and deepened through their presentation at a top management team meeting and through leading a two-hour discussion on the issues raised. The evolution after the interviews was checked through later participant observation as the trainer on SM for both product development and purchasing personnel, and repeated discussions with the VP SCM.

#### Data gathering in Gamma

The key interviews covered three successive CEOs, the Senior VP Business Development, Senior VP Resources and Facilities, and four geographic BU directors. CEO A had been in position during the first development initiative on SM five years previously; CEO B was responsible for the company until the second initiative, and CEO C was the present incumbent, appointed during the second initiative.

To get a broader picture of the change of perceptions in the whole organisation in Gamma, the range of the interviewees was widened to represent not only top management team members, but different managerial levels of organisation, different geographic BUs with different distances from the latest development project (e.g. project owners, category team leaders and members, participants and non-participants), different lengths of tenure in the organisation, and different ages and work experience.

In addition to management team members and BU managers, the interviews thus also covered a business controller, a senior foreman, a sales manager from a key supplier (belonging to the same corporate group), and, finally, the purchasing manager of a sister company in order to gain a better understanding of the role of the parent company.

The key interview question was the same, seeking individual perceptions of the evolution of SM, but the detailed questions focused on the change process and changing perceptions. The interviews were tape-recorded, apart from two, the interviews with CEOs A and C. CEO A was interviewed in a very early phase of the study as an open discussion, aiming at a preliminary understanding of the issue to be studied. The interview with CEO C was short and limited by his tight schedule.

Deeper understanding was also gained through several discussions with the Chairman of the Board and with the European CPO of the parent company. They were not counted as comparable interviews, because they were not insiders in the company. They had been acting as thought leaders and the originators of the change initiative.

Participant observation in the role of external trainer and coach was utilised to gain an understanding of the parallel evolution of individual mindsets and improving business performance.

Key sources for numerical data were the detailed category-based spend analyses and savings reports gathered and developed during the second training initiative. During the project these savings and figures were compared with similar data from the first training and development initiative.

The key data, sustainability of the results, and behavioural changes were controlled and confirmed two years later by another person from the research team (Sonja Saloranta) through interviewing the CPO and writing a case description of the development over seven years with significant cost savings.

## 4. The analysis process

The analysis of the gathered data was performed in several phases with different methods. In this chapter I will describe the analysis work phase by phase. Figure 7 gives an overview of the process.

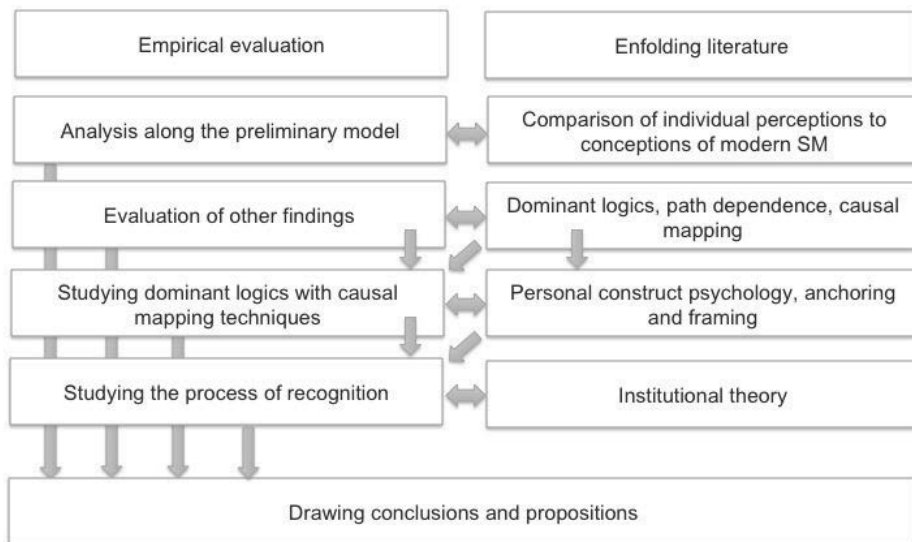


Figure 7. An overview of the analysis process.

### 4.1 The flow of analysis

The overall objective of the evaluation was identification of the barriers and hindrances to SSM through a deep understanding of how people perceive PSM-related issues. If an individual constructs his/her perception of the world through anticipations built on causalities, it might be expected that, by simply identifying the anticipations and causalities expressed within an interview, we get a good picture of the interviewee's construct system regarding the issue under discussion. To understand the interviewees' individual mental constructs, we searched for expressed indications of perceived causalities between PSM-related issues, factors, and phenomena. During the analysis, the pieces of data were slowly and associatively connected to "meaningful patterns" (Miles et al. 1994) through the following process. In the list below I also describe the evolution of the research focus, based on new findings and parallel literature reviews.

- 1) The first step of the analysis was assessment of the factors of the preliminary model presented in Figure 3. This was done firstly through direct questions on perceptions of strategicity and relative importance and

secondly through indirect questions and other data on strategicity, relative economic importance, tools, and means of differentiation. Education and experience regarding PSM were not addressed directly, to avoid possible irritation and negative attitudes. However, during the interviews the interviewer carefully checked that the issue was satisfactorily addressed as a part of the interviewee's story.

- a. The expressed perceptions of strategicity at firm level were evaluated and compared to the firm's behaviour in compliance with the criteria for strategicity set earlier (Chapter 3.3). In vivo quotations of the direct answers will be presented within the case observations.
- b. The preliminary modelled driving factors, individual education, and experience were evaluated by person and case by case. The findings are described, summarised, and commented on in Chapters 5 and 6 (within the case findings and cross-case comparisons).
- c. The two preliminary expected factors of perceived strategicity, a) the perceived importance and b) the recognised means to differentiate the firm's SM performance from the competition, were assessed on the basis of the direct answers to related questions. Two questions on each of the two issues aimed to address the perception of strategicity through independently evaluating its modelled components.
  - i. In vivo quotations and rough summaries from answers on the relative share of the external spend are presented in the within-case findings.
  - ii. The recognised methods to improve performance or reduce costs are summarised in a joint table (Table 2) for Alpha and Beta. The lists of recognised means are compared to the modern supply management literature and discussed case by case.
- d. Conclusions from the observations regarding the preliminary model are presented in within-case findings and cross-case comparisons.

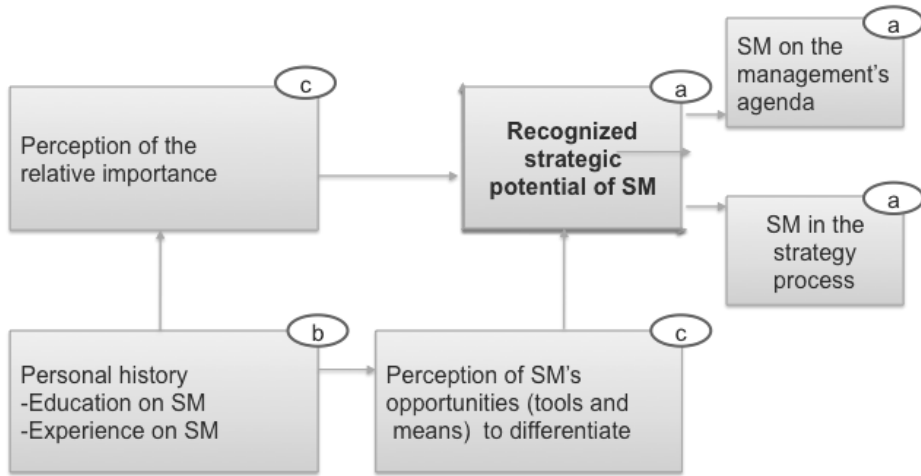


Figure 8. The preliminary model for research planning and order of analysis

Analysis within Alpha revealed that the variation between the interviewees was lower than expected, and the preliminary model's explanatory power could not be satisfactorily tested, although the data did not question the model. The preliminary model was also revealed to be too simplistic, because it did not contain any role for group-originated behaviour (team, organisation, industry) or reporting practices. The preliminary model was not abandoned, but the decision was made to supplement it with a broader one through deeper research and a literature review.

The dominant logic identified in Alpha was described with the causal mapping technique and then tested in short discussions with the CEO and PM. The strength of the dominant logic guided my interest further towards common features of perceptions and finally to their origins.

Thus the research had to be deepened towards a grounded theory-type approach to allow new ideas to emerge. The decision was made to tape-record the rest of the interviews to allow richer analysis.

- 2) On the basis of a literature review on managerial cognition, a new model of the rise of an issue from individual cognition to the management team's agenda was drafted (Figure 4).
- 3) The dominant logic of Beta was described with the causal mapping technique and tested with the VP SCM and with the management team when reporting the preliminary findings.
- 4) The similarities between Alpha and Beta had guided my interest further to the new ways of perceiving supply management after a nascent top management recognition. The interview questionnaire for Gamma was completed and redefined accordingly.

Causal maps of the individual interviews in Gamma were drawn.

A comparative summary of the three case firms and the five identified change initiatives was drafted (Figure 13).

Parallel to the within-case analyses, a search for cross-case patterns at three levels, among firms, change initiatives, and individual perceptions, had been initiated. The grouping and categorisation of findings, early ideas, and potential explanations proceeded in practice through writing notes and questions arising during the reading of the literature and processing of the interviews and other data. The thoughts and ideas took the form of evolving memos, written, further developed, and modified at different times during the analytical work and discussions within the research team. They were also irregularly tested through short discussions with the purchasing executive in Alpha, the VP SCM in Beta, and the CPO in Gamma. The ideas were classified and categorised, with interlinked issues being connected, overlaps removed, and wordings clarified. A compressed list of categories is presented in Chapter 6.

The repeated indications of strong perceptions of the purely operational and transactional nature of PSM across the cases guided the broadening of the literature review to institutional theories.

All the interviews of all the cases were carefully reread multiple times to search for potential ideas for completion or redefinition to be added to the list of categories, now with the institutionalisation processes also in mind.

Indications of deeper root causes and common mental models were especially searched for through wording- and word-level analysis. This was based on the insight that terminology is an indicator of unnoticed (deeply institutionalised) common mental models.

- 5) Finally, I conducted trials to dig deeper and search for potential underlying root causes of the most important cross-case patterns. For this, I employed abductive reasoning, looking for the most common potential explanatory factors for groups of findings. Several different trials, utilising the technique of Barbara Minto (Minto 1987) to fit individual findings into a logical entity were conducted over long periods of time. This process, again, was an iterative mental process in the mind of the researcher and in practice needed tens of versions of pyramid drawings and ripped-up flipcharts.

Preliminary propositions were developed and their validity within the data was tested through repeated comparisons with the interviews, causal maps, and other data.

Further, based on all the research data, a summary causal representation was drawn

- a. of the interlinked barrier mechanisms constituting a general vicious circle, maintaining the operational role of PSM;
- b. of the interlinked mechanisms barriering the reframing of transactional purchasing to SSM or external resource management within an individual firm.

## 4.2 Causal mapping

In analysing the interview records I utilised the causal mapping techniques as presented, for example, by Miles and Huberman (1994). An early theoretical basis of the causal mapping methodology is grounded in George Kelly's personal construct psychology (Pinch, Sunley & Macmillen 2010; Ackermann, Eden & Croppert 1992), the idea of the personal constructs developed by human individuals to understand and predict how the world works. Miles and Huberman (1994) described a causal mapping analysis process and Ackermann et al. (1992) wrote a very practical guide. Variations on the method have been broadly utilised and discussed in the literature (e.g. Blalock 1971; Asher 1983; Hodginson, Maule & Bown 2004; Woodside 2005; Pinch, Sunley, & Macmillen 2010).

Causal mapping, or causal network mapping, is a generic technique for describing interdependencies between issues or events. As a general tool, the causal mapping technique is appropriate for structuring messy and complex data and for managing large amounts of qualitative data (Ackermann et al. 1992). It can be employed to integrate individual perceptions of a situation into an evolving overall mental map of the researcher (Miles & Huberman 1994, p. 152). Here, it is employed to describe the reasoning of the interviewees for perceived causal relationships concerning SM; that is, their perceptions of what is caused by which issue, activity, perception, or phenomenon.

The selected causal mapping approach has several benefits:

- it offers a systematic methodology for the analysis of the interview data;
- by selecting the indications of anticipations and causalities, the scope of the research is limited merely to the interesting pieces of data regarding the research questions;
- it radically reduces the amount of data to be handled, but it also provides a natural language with which to discuss data of interest;
- the possible findings are not limited to the preliminary constructs employed in the research planning.

### The causation challenge

There is a general problem in drawing causal maps as it is difficult to define an unequivocal causal relationship between two issues. Often, two issues influence (i.e. strengthen/weaken) each other in a loop and it is difficult to state the original reason (Weick 1979). In this piece of research, I have identified this causation phenomenon both at the level of individual categories and also with regard to the overall scope of the study. An example of the former might be, for example, interdependence between an extremely decentralised organisation and the perceived low importance of purchasing. The causal relationship can be regarded both ways: decentralisation hinders purchasing from becoming recognised as important and purchasing's perceived unimportance supports decentralisation.

I have identified the causation challenge but tried to avoid messy "everything influences everything" pictures and maximise readability by, mostly unidirectionally, detailing the reasoning factors. This is a chicken-and-egg type of dilemma,

comparable to “strategy versus structure”, which cannot ever be defined at the general level. As the researcher, the selections are finally based on my interpretations and evolving mental models. This process unavoidably conveys the influence of the researcher’s earlier experience and thus also contains a risk of bias.

The practical application of causal mapping techniques

In this research I have employed causal maps in various ways.

- 1) In Alpha, Beta, and Gamma, causal maps were utilised as an integration tool to form a common picture of the joint causal map of each top management team/firm, the “dominant logic”. This was accomplished by identifying pieces of expressed perceptions relating to SM and picking the common features perceived as important, employed by two or more interviewees. The maps were drawn soon after the interviews within each case. Systematic mapping based on indicated causalities was attempted; however, during the interview process, the interviewer’s understanding of the setting also evolved towards an improving picture of the management team’s joint perceived logics. Finally, the process is difficult to describe in detail, because the formation of the summary map evolved slowly in the associative mind of the researcher, as a continuously compressing and crystallising picture, during repeated readings of the interviews. This can be regarded as an improving understanding of the setting but also a slowly evolving bias that, in the latest interviews, might potentially even have led to subconscious neglect of potential novel nuances or interviewees’ slightly conflicting perceptions. However, the outcomes are internally logical maps, which were tested through presentations to both the CEO and the purchasing executive in Alpha, the SVP SCM in Beta, and the CPO in Gamma. On the basis of these discussions, some minor corrections were made. All accepted the maps as a good description of “their management’s way of thinking, or the dominant logic”.
- 2) In Gamma, each interview was described by an independent causal map, related to the interviewee’s perceptions of the two development projects regarding SM.
- 3) Finally, two integrative maps were developed from all the interviews, as described in 4.1 paragraph 16.

In drawing the maps, I employed Banxia Software’s Decision Explorer, a mapping software developed by Prof. Fran Ackermann et al. (1994-2002) for academic and managerial causal mapping purposes. For technical reasons, part of the mapping of the individual interviews in Gamma was conducted utilising a Microsoft mapping application.

### **4.3 Searching for cross-case patterns and root causes**

In addition to causal maps, the chapter-, sentence-, and even word-level coding of the interviews was also tested. These ignited several ideas for potential barriers and root causes. In particular, several wordings were noticed that emphasise the perceived strictly operational, even transactional role of purchasing and a subconscious belief in

market competition. The idea of deeply institutionalised general perceptions was born through these wording-level analyses.

Finally, I conducted trials to dig deeper and search for potential underlying root causes of the most important cross-case patterns. For this, I employed abductive reasoning. The idea of abductive reasoning is to find the most probable explanation for a set of observations. It is reasoning from effect to causes or explanations (Lamma, Mello, Milano and Riguzzi 1999). The explanation should be sufficient, but not necessarily the cause of the effects or observations. Abductive reasoning has also been called “inference to the best explanation“ (Douven 2011). This thinking was first introduced by Charles Sanders Peirce (1839-1914) with the term “guessing” and it has been regarded as “a deliberate and creative part” of the abduction process (Tschaepe 2014). Abductive reasoning applies earlier theoretical knowledge, e.g. frameworks from other disciplines, to explain the empirical observations, to “match” the observations with appropriate frameworks (Spens & Kovács 2006). The process is thus one of continuous iteration between the observations and potential theoretical frameworks, constituting a learning process (Dubois & Gadde 2002). Through abductive reasoning it is possible only to suggest new theories or develop hypotheses, which should later be empirically tested through deductive research approaches (Kovacs & Spens 2005, Spens & Kovacs 2006). I have used abductive reasoning to explain SM-related phenomena which it was not possible to explain through the frameworks offered by earlier SM literature.

The abduction process, again, was an iterative mental process in the mind of the researcher, but a strict and systematic process flow was identified as crucial for clarity in thinking (Minto 1987). The abduction process required a long series of iterative trials (tens of ripped-up drawings, papers, and flipcharts), as well as plenty of discussions with colleagues, both SSM experts and non-experts, as well as with different public audiences in workshops, round tables, and training seminars over long periods of time.

#### **4.4 Satisfactory saturation**

The number of cases was not set when selecting the first case. Alpha had provided findings on all the dimensions of original interest and preliminary constructs. Even more interestingly, it showed the importance of management reporting and revealed a strong dominant logic that only enabled an operational role for purchasing. In Beta, the first interviews indicated confirmation of the key findings from the earlier case and deepened understanding of the dominant logic by offering another one, which was slightly different. Gamma further confirmed the key findings and shed light on the change process and other implications of nascent management cognition of SSM. It also opened up yet another dominant logic and perspectives on the interdependencies of different hindering factors.

As described in the case descriptions, in all the three companies, Alpha, Beta and Gamma, there had been earlier development initiatives on PSM, which could be seen to have an influence on the perceptions that were now heard. The perceptions of the interviewees thus covered five change initiatives (detailed below) and the present situations within the three case companies. The recorded perceptions of 36 executives had covered the preliminary interests well, given reasonable data from which to draw

conclusions on the a priori constructs, enabled a good understanding of and rich description of several causal mechanisms, and suggested some hidden root causes of the missing cognition of SSM; the objectives of the study had been met and satisfactory theoretical saturation was reached (Eisenhardt 1989a; Corbin & Strauss 2008).

The five change initiatives identified

Originally the research plan was focused on the “as is” situation within the case companies and individual perceptions as factors in that. The first interview questions, addressing the interviewee’s perceptions of the evolution of PSM in the firm, raised PSM-related development initiatives as cornerstones of the evolution. They are referred to within the case descriptions (Chapter 5), but a short summary is provided below.

1) Alpha 1. Around five years before this study a new CEO coming from another industry had recognised improvement potential within PSM, integrated the corporation-wide fragmented purchasing departments into one central purchasing department, and activated new recruitments of PSM professionals. Processes were systematically developed and new sourcing units were founded in China and later in India. This re-organisation and its stronger role were apparently an implication of the new CEO’s cognition of PSM’s growing importance. The changes did not have a remarkable effect on other functions or raise SM to the top management’s agenda.

2) Alpha 2. A couple of years before the interviews of this research a new training programme was initiated, aiming at a more strategic approach to PSM, e.g. emphasising total cost thinking. The participants in this category strategy-oriented training were mostly from the purchasing department, supplemented with some people from production and SCM. The management of other functions did not participate in planning or in workshops or reporting discussions. This exercise, again, was purchasing’s internal one, despite limited participation from some other functions.

3) Beta 1. Around five years earlier a new plant was constructed, with slimlined and cost-efficient production-related processes. This can be seen as one initiative to develop PSM, with traditional production-oriented approaches, focusing on a fluent flow of production. Functions were still perceived as separate, even physically distant. Purchasing and product development were moved to joint offices a couple of years before these interviews. Although the focus of this change project had been on cost-efficient production, PSM enjoyed limited interest. Some new lower-cost suppliers were sought, tested, and utilised, but the factually local and national supply base did not change very much, nor did cost levels become lower. The real potential within SM was not recognised.

4) Gamma 1. Initiated by the European CPO of the parent company, a category strategy-oriented development project was run around five years before these interviews. The project was comprehensive, and covered about 50 people from all parts of the organisation. Although the results were convincing and the coverage cross-functional, the project did not lead to second waves or, practically, any changes in organisation or behaviour. It did not lead to further cognition of SM’s potential. The “air in the prices” had been blown out, nothing more.

5) Gamma 2. As described in detail in the previous chapter, another very similar project led to SSM being raised in budgets and added to the top management's agenda, as well to the strategy process. SSM's value and strategic potential were broadly recognised, not only in the top management team.

Of these five development projects, only one, Gamma 2, led to cognition of the strategic opportunities offered by SSM at the top management team level. Three projects were purely functional, Alpha 1 and Alpha 2 being internal to purchasing and Beta 1 extremely production flow-oriented, and one project (Gamma 1) just did not awaken management's broader recognition after the project, despite cross-functionality, management participation, and convincing results.

## 5. Within-case observations

The key observations and initial findings will be presented case by case, together with some further relevant description of the companies. I will begin with observations relating to the preliminary constructs; then other findings and insights will be described.

### 5.1 Case Alpha

The first case is a well-performing industrial company with its own highly profitable products, but also a growing amount of traded commercial products. The share of the external spend of all company costs is approximately 75%. Product-related purchases are approximately 40% of this external spend, while the non-product-related purchases account for approximately 60%. Various purchased services form a major share of the latter; for example, facility, marketing, and R&D-related services. The directly product-related purchases and an increasing share of indirect purchases are managed by the purchasing function, which reports to the VP Supply Chain, who is responsible for production, purchasing, delivery, and facilities.

Approximately five years before the interviews of this research, the previous CEO, coming from another company, initiated the centralised development of PSM and supported the recruitment of professional resources and central coordination of purchases. Subsequently, the company centralised the previously fragmented purchasing function, recruited new resources for procurement annually, and systematically developed PSM processes and tools within the PSM function. In this paper I will call this change initiative as Alpha 1.

The purchasing function's involvement in the purchase of indirect services was still minimal. Category strategies for Alpha's main directly purchased categories had been developed as hands-on learning exercises about a year before the interviews. In this paper I will call this change initiative as Alpha 2. The competence development efforts (i.e. training seminars and guided category strategy work) were internal exercises of the PSM organisation. Without any systematic building of cross-functional teams, implementation of the category strategies was slow.

The head of purchasing was not a regular member of the management team, although he was sometimes invited as an expert when purchasing-related issues were discussed. He was a regular member of one business unit (BU) management team and was sometimes invited to visit other BU teams.

#### Top management cognition of the strategicity of supply management

The question concerning the strategic potential of purchasing and supply management (PSM) elicited hesitant comments from most respondents: "*Purchasing is a service function; I do not perceive a direct strategic advantage*" (CEO), "*maybe there is some potential at the company level, but who knows what .... we need strategic competence in purchasing the services that are needed*" (R&D), "*no strategic role, depending on the BU strategies*" (BU), and "*good knowledge of supply channels and utilisation of evolving countries*" (BU). Only two out of 11

interviewees expressed a belief in strategic potential. Answers to direct questions on strategicity suggest that purchasing is perceived as an operational activity.

#### Supply management is not perceived as being on top management's agenda

Supply management was not perceived as being regularly discussed in top management's meetings. Although operational figures, such as the value of inventories and inventory turnover rate, were part of standard reporting routines, the interviewees expressed a perception that PSM-related issues were not regularly discussed by the management team ("*not on the regular agenda*" (CEO)), but "*only for some special reason*" (BU), or "*only as an inconvenience or hindrance, when there are problems*" (BU). "*Management is satisfied if nothing is heard from purchasing*" (BU). The problems raising PSM to the meeting's agenda were mentioned as, for example, severe delays in supply delivery or quality problems that threaten production schedules or excess capital tied up in material inventories.

#### Supply management played a minor role in the annual strategy process

Corporate strategy and business plans had been reassessed in an annual strategy process. Business areas were responsible for adapting the business strategies to the evolving environment. PSM was a sub-team of the production- and delivery-oriented SC team. It was not thought that the top management team had any strategic discussions on the evolution of supply markets. This further confirms the researchers' interpretation that SM was not perceived as a strategic issue worthy of systematic evaluation and joint reflection.

The preliminary construct, the model developed for planning the research, defined two criteria for broad top management cognition of the strategic potential of supply management (SM): regularly on the top management's agenda and being an important part of the strategy process. Neither of these could be identified in Alpha, suggesting that the top management had not fully recognised the strategic potential of SM.

#### Perception of the relative importance of supply management

Seven out of the 11 interviewees clearly expressed in some form that they perceived the relative importance of the purchased spend and PSM as growing. This was connected to external factors such as intensifying global competition and low-cost product copies and internal factors such as an increasing share of traded products replacing internal development and manufacturing. For example, "*increasing importance along with the increasing competition*" (prev CEO, BU), "*utilisation of developing countries*", "*the industry is evolving towards virtual organisations*" (BD), "*increased flexibility like Nokia has*" (R&D), and "*crucial, because of its huge economic role*" (SCM).

However, although the growing importance of SM was noticed, the breadth and size of the purchased spend was not fully recognised and the real share of the purchased spend was "*unknown both in Euros and as a percentage*" (R&D). Some avoided answering the question, while some clearly stated that they did not know. Only a few people proposed a figure (e.g. "*around 30%*" or "*growing to 25-30% in the future, disclosing outsourcing decisions*" (CEO)). All the interviewees who expressed

something underestimated the relative size of the external spend, indicating a figure roughly equal to the direct spend, which was visible in reports. The CEO identified that a narrow definition of purchasing was guiding the thoughts, and that large outsourcing decisions and service purchases were discussed outside the purchasing organisation, because “*professionalism is in the BU, not in the purchasing department*”. The outsourcing decisions were perceived to be strategic, decided and implemented without PSM-organisation’s participation. Soon after these interviews all the r&d personnel, who participated in outsourced development projects, were invited to a cross-organizational training project on SSM. Along these seminars it became obvious, that the outsourcing decisions had led to unwishable situations with many suppliers of r&d services. Due to limited skills, too little attention had been paid to selection, management and performance measurement of suppliers. The seminar participants questioned the efficiency of outcomes, levels of costs and saw increasing dependencies on certain suppliers, as Laseter (1998) and Villena et al (2011) suggest.

Two of the interviewees indicated that the definition of purchases should be as broad as possible (“*the broadest definition of purchases is the only right one*” (BU, R&D)).

#### Perception of opportunities to differentiate or decrease costs

Another factor in strategic potential was earlier defined as being the opportunity to differentiate oneself from the competition. When the overall strategic potential was weakly recognised, the methods to differentiate oneself from the competition were also weakly known.

When the interviewees were asked what they regarded as the most important methods of SM, most became uncertain and hesitant and only listed some means or tools. The question was repeated in a slightly different form, focusing on tools and ways to reduce costs, but the answers were similar. A summary list covers, for example, efficient sourcing of new suppliers, market knowledge, centralisation of purchases, partnerships, open books, supplier relationship management, early purchasing involvement, and internet portals.

A summary table of the categorised perceptions of methods mentioned in the interviews within Alpha is presented in Table 3. The methods listed on the left hand side of the table cover all the methods mentioned in the interviews within both Alpha and Beta, which will be discussed later.

A remarkable part of the total sum of mentioned methods were related to traditional operational purchasing and supply management processes. A majority of the interviewees also mentioned different forms of cooperation with suppliers, although no one suggested deeper relationships. Other parts of the interviews reveal, that partnerships with selected key R&D suppliers was regarded as important, but these were not perceived as PSM issues at all.

The missing perceptions reveal maybe even more. The CEO did not see any strategic role for SM. Total cost implications or calculations were not mentioned at all. A link to company strategy was identified by only one interviewee. What was also astonishingly small was the number (two) of answers related to product development.

Only two interviewees mentioned the enhancement of competition between suppliers. These two interviewees were those two persons who had had individual experience of professional strategic supply management in earlier phases of their careers. These findings could indicate, as will be discussed later, that the other interviewees have a strong belief in market competition and no fear related to the possible price implications of limiting competition, i.e. the concentration of purchases to one or a few supplier(s)/partner(s).

The order in which an issue was mentioned within an interview is described as a number in the table. Different interviewees gave very different answers and in different orders. I interpret the uncertainty and large variation in their comments as showing that the interviewees only had a limited understanding of the methods of modern SM and their usability and economic and strategic implications, and, most importantly, that these issues had not been discussed within the management team. The methods of modern SM and their applicability and implications were apparently weakly understood.

In sum, these findings would also suggest that the strategic potential of SM was not recognised within the context of the top management team.



### Potential explanatory factors

The preliminary constructs suggest that individual education and experience play a key role in creating frames and mental models that lead to cognition of the value of strategic supply management (SSM). This was expected to explain SM-related management behaviour. The findings fit the preliminary model: both formal education and individual experience of SM are limited and the strategicity is neither perceived nor visible in the management team's behaviour.

### Education and experience

The variation in the interviewees' education and experience was much smaller than expected. The top management team members all have university degrees, most at the master's level, two with PhDs. No one had formal education in modern SM as a part of their university studies, nor had they participated in supply-related training. The supply chain management (SCM) director had participated in SC-related consulting projects. Thus, the variation between individuals is very limited and does not enable comparisons between interviewees. However, this enables maximal manifestation of the implications of lacking SM-related education. The individual education paths of the top management team members seem not to create any frame of reference for modern SM.

More than 60% of the top management team's combined years of professional experience were with the case company and more than 80% within the same industry. The rest comprised non-managerial tasks in different industries during the early years of individual careers. The professional industrial experience of the management team is thus well established in Alpha and, in any event, within this industry. The average length of tenure within the management team was approximately 15 years. Three of the interviewees had had, in some phase of their career, significant direct responsibility for PSM, two within Alpha and one in an earlier career phase. 90% of the interviewees were identified as having been exposed to the challenges of PSM as part of their business responsibilities in some phase of their career, for example, as a functional area within their BU. The legal advisor, who had never had any business responsibility, was the only interviewee without any individually perceived experience of PSM.

This means that the clear majority of the top management team members who were interviewed had been exposed to the challenges of SM, even with responsibility for related activities, although all indicated their perception of individual experience of purchasing as small or limited. Only two indicated a systematic frame of reference regarding modern SM through top management experience with another company. Despite these two, the individual experience paths of the top management team members are very homogenous and seem not to create any strong frames of reference concerning modern SM.

### *Management reporting of external spend*

The members of the top management team had no available holistic reporting on the external spend. The only figures regularly available were summary figures of direct purchases for production or trade. The weak knowledge of the size of the externally

purchased spend can be understood through weak visibility. Direct product-related purchases were only reported as part of the Bill Of Material as summary figures and were of interest to purchasing and production professionals. Supply management objectives and measures were traditional: availability, service, and inventory levels (i.e. production flow-related). The reporting systems raise product-related PSM to the top management's agenda only when inventory levels are exceptional, deliveries severely late, or suppliers' quality problems jeopardise end customer satisfaction.

Indirect purchases were not centrally coordinated nor reported; the responsibilities were decentralised to BUs and functions, each taking care of the purchases of immediate interest. During this research project, the company collected data on the indirect spend for the first time and identified it as being larger than anyone had expected. Soon after this research project, an executive-level coordinator was appointed for indirect purchases.

The reporting of indirect purchases is fragmented within various business and functional units. The indirect spend practically seemed to vanish within "other cost" types in various cost reports. In the light of this finding, it is easier to understand why only two of the management team members indicated that they regarded all the external spend as purchases. For the majority, the purchased spend was understood as relating tightly to the responsibilities of the purchasing organisation; for example, raw materials, standard products, and packaging materials.

For some interviewees, the idea that was presented of a broader concept of SSM was totally new but "*interesting*". However, one head of BU stated that "*the broadest definition of supply management would be the correct one*". Another interviewee (R&D) put forward a further insight into the broader concept of "*external resources*".

#### Perceived role of PSM

Many interviewees were indirectly responsible for purchases within their business organisations, although they seemed to rely on the skills of functional professionals. Many interviewees expressed a strong reliance on the purchasing organisation "*taking care of their duties*". The duties were expressed as operational; for example, "*routine negotiations and bargaining*" (BU). Some interviewees recognised a distant relationship with purchasing professionals, for example, suggesting that "*they should market themselves and their capabilities better*" (BD).

With regard to product-related key materials and components, strategic supply decisions were, in practice, made in Bus, which often selected a supplier and commenced negotiations before passing the responsibility to purchasing "*for routine discount negotiations*". Even if they did not select the supplier, the BU or R&D functions often defined the specifications so tightly that only one supplier was able to meet the requirements. There was more freedom with regard to the relatively standard purchasing of goods and materials; within this area, purchasing had had successes in the form of significant savings through systematic total cost analyses, increased competitive bidding, or the sourcing of totally new suppliers, for example from India.

Discussions with PSM professionals and later participant observation within the training sessions of R&D personnel revealed that supplier selections were perceived as being based on weak analysis and limited understanding of the mechanisms,

means, and tools of PSM. The supplier selections were developed within the R&D teams and the purchasing professionals were invited to “*check the contract*” and “*bargain on price*” (PM) in a late phase, just before the signing of the contract, when there was no room left for SM professionalism. The professional capabilities of the PSM organisation, for example, supply market intelligence, total cost modelling, or active utilisation of competition, were not systematically utilised.

Make/buy decisions and the acquisition of R&D services were perceived as strategic areas. The decisions were made by the management team on the basis of suggestions made by the management responsible for the business area and prepared without SM professionals.

What was not said

No comment on the segmentation of supply or the purchased spend (i.e. division into differently behaving segments) was made in any interview. This would again suggest the perception of a purely operational routine role for PSM. A very basic idea of SSM is segmentation into variously behaving categories that have different internal implications and represent different external opportunities (Kraljic 1983).

The only comments relating to some kind of segmentation concerned relationships with partners; for example, “*purchasing should not irritate our partners by aggressive behaviour*” (BU), which sounds like some kind of “blind trust partnership” (Laseter 1998) and suggests that the variability in the balance between competition and cooperation was not recognised (e.g. Richardson 1972; Laseter 1998); that is, the basic logics of SSM were not recognised.

Dominant perceptions of purchasing and supply management

The organisation is based on independent business areas and supporting functions. Many interview comments emphasised the discretion of individual top management team members in their roles: “*My organisation*” and “*I own the business cases*”. I interpret these comments as indicating that individual executives’ discretion is relatively high. This would suggest that individual executives can, in principle, have very different perspectives on and understanding of PSM. If the executives were not independent, their individual perceptions would have a minor impact on the decisions; if they are independent, their individual perceptions would have a stronger influence on their decisions.

An initial finding noticed after the first interviews was the smaller-than-expected differences between individual interviewees’ responses. Preliminarily, I had thought that there would be radical differences between individuals as a result of their different experience paths and educational backgrounds, and also different interpretations and reactions to the changing environment. However, several times during the interviews we got the impression that an interviewee was representing the top management team rather than himself/herself (e.g. “*we think*”). This led to the identification of the importance and potential strong existence of common ways to think among the top team, a dominant logic.

To further test the possible existence of a dominant logic in Alpha, I endeavoured to identify common perceptions in the different interviews and drafted them into a

causal map, picking pieces of expressed causal relationships from all the interviews and drawing them together as a summary map. This mapping was started soon after the first interviews and was done in parallel with the interview process. Thus, the causal map should describe common features of thinking within the management team on the basis of the comments and the interviewers' interpretations of the answers. The mental map that was drawn was tested with the CEO and the Purchasing Executive; both accepted it as a good description of the dominant thinking. Minor corrections were made on the basis of these discussions. The story related below is a verbal description of the corrected causal map. All the interviewees expressed parts of this joint causal logic in some form:

“The root source of the company’s high performance has been its success in developing new patentable and protectable high-margin products. Product development projects take a long time and are costly and risky. Business areas are independent and responsible for long-term growth and profitability. The high profitability and focus on long-term developmental successes enable direct cost-related issues to be neglected or looked down on (“the costs of purchased goods and materials are not so important in our business”). Because the purchased cost is not important, Business Units and R&D have the lead in key supplier selections”.

Purchasing is regarded as an operational support function in operative issues, but not participating early in e.g. supplier search, selection, contract and relationship building, etc. PSM is not regarded to have strategic value.

#### PSM-related terminology

The prevailing dominant logic tends to leave PSM in an operational role only and thus not on the top management’s agenda. The interviewees, top management team members, also used similar terms regarding PSM’s tasks and roles. The terms that were used repeatedly were price-focused, such as “*routine discounts*” and “*bargaining*”.

#### Summary

The strategic value of SM was not perceived and SM was not on the management team’s agenda, nor did it play an active role in the annual strategy process. The limited and traditionally oriented regular reporting does not reveal the real size and importance of PSM, nor raise PSM issues to the management level. Although increasing competition creates pressure on performance, the top management team has insufficiently strong triggers to recognise PSM opportunities and adjust their behaviour.

Not one of the interviewees had education in or experience of modern SM. The real size and relative importance of the external spend was not identified and the methods of PSM were weakly known. On the evidence of the interviews, a natural interpretation of these findings is that education and experience are prerequisites for cognition of the strategic value of SM, as preliminarily expected.

The strong dominant logic framed the perceptions of SM towards operational tasks, routine negotiations, and bargaining, but attributed less importance to it for business success. Reporting practices are aligned with this operational perception. The limited

reporting tends to support the dominant logic and does not raise issues that question it.

## 5.2 Case Beta

Beta is a hi-tech company that built a new plant five years ago, aiming for more cost-efficient production and delivery through streamlining both the production and logistical processes. The streamlining of processes and saving of capital were important planning criteria for the new plant and, for this reason, a weekly reporting system monitored the efficiency of production and SC flow. In this paper this project is called Beta 1. Over the last 20 years, the company has both outsourced some significant parts of component production and insourced some parts of it again when the economic cycle changed.

Direct purchases are up to 40% of turnover and approximately 80% of direct production costs. The majority of components and materials have traditionally been bought from local importers and dealers working with international components suppliers. This extra step in SC has often been discussed; however, the overall situation has not yet radically changed. The supplier network remains essentially local and national. However, the share of international purchases has increased over the last five years through positioning recruited purchasing experts in China and in India. The share or total sum of indirect purchases had not been calculated.

The organisation is perceived to be product design-led to meet the needs of different customer segments. The company's strategy is "*not cost leadership, but customer market-oriented or niche*" (CEO) with a perceived emphasis on continuous product development. Product development teams seem to make the majority of strategic supplier selections, typically with the limited and late participation of purchasing: "*I and my team look for partners in selected areas*" (R&D). The long-term competitive advantage is perceived to be in technology and quality-related issues that are directly visible to the customer: "*Cost leadership is not our strategy*" (VP SCM). "*Because of the brand image, we always use the best, most durable, and most expensive materials*" (VP SCM). Purchase costs have not been considered an important question by the top management team.

### Top management cognition of strategicity of supply management

The strategic potential of purchasing has not been identified by the management. The question about strategic potential aroused hesitant comments and broad discussions: e.g. "*maybe there is some, but I cannot identify it*" (Econ). The idea of fulfilling all the customer's needs in a technically advanced way is even perceived as being put at risk by any visible sourcing activities, as this would move the focus to price. Reliability and operational performance are perceived as important for brand image and the risk of poor component quality is regarded as significant from this perspective. Sourcing and purchasing activities seem even to be perceived as a risk to the brand through a cheap price image and increased quality risks.

Some interviewees, however, identified Nokia as a potential model for developing procurement and SC to create a strategic advantage. During the interviews some

interviewees identified a need or opportunities for a broader role of supply management (e.g. “*a broader view of (SM)*”, “*nearer to business*” (Sales)).

The company sells investment products and some interviewees criticised customer companies in which investment goods are handled by purchasing experts. This is perceived as weakening any sales arguments based on lifecycle costs because the customer’s purchasing experts are perceived as focusing only on the immediate price as their key performance criterion. However, Beta’s own sales argumentation on lifecycle costs has initiated questions concerning how well the management has understood the total cost implications of purchases.

#### Supply management on the management team’s agenda

“Product development and sales dominate in the management team, because they are perceived as the pipeline which brings in money” (CEO). The role of procurement in the top management team is “relatively modest and comes up when there are problems” (VP SCM). Procurement is regularly discussed by the management team as part of SC; however, the focus is on quality problems brought up in negative client feedback. The top management monitors the evolution of material costs and delivery capability reported by the VP SCM, and also special issues if the VP SCM perceives a need. The management team has access to an intranet database that also contains the sourcing executives’ reports, which cover different development projects, for example, the outsourcing of a component or the search for a new supplier of another component. Typical content is the title of the component/family, present purchases, and the identified source of savings, or often quality problems for which a supplier has been identified as being responsible. As defined by the VP SCM, the “management team discussion of SCM is not problem-oriented, but deviation-oriented.”

Key production flow figures were regularly reported to the management team. There were no coordinated reports on indirect purchases, which were only discussed by the management team when they were part of significant investment projects.

Apart from a procurement representative attending a meeting between sales and production every three months, there is no connection between sales and procurement.

#### Supply management in the strategy process

In the strategy process, SM is viewed through a production-oriented SC lens, with a quality assurance focus. The corporate strategy is redefined annually at the levels of key business areas and processes. Environmental analyses (e.g. technologies, competitors, and markets,) are perceived as accounting for approximately half of the work. Internationalisation has been a key issue over recent years and it is also reflected in purchasing, not only through cost savings but also through the novel needs of new markets. Raw material costs and price indices have lately been added to the list of strategic analyses by the VP SCM; however, other participants are not perceived as discussing other supply market-related issues or analyses.

### Perception of relative importance of supply management

The growing importance of the purchased spend is recognised because of intensifying competition and evolving business models: *“It does not have the cognition that it deserves from a strategic point of view, especially if you think of its fiscal value”* (Sales). All the interviewees emphasise the company’s idea of technological leadership, which appreciates quality and technical superiority. However, sales pricing in many product groups is presently perceived as being *“cost-driven”* because of competition.

### Underestimation of the real share of the purchased spend

The share of the purchased spend is generally regarded as important, although the management team members do not know the exact figures. The direct spend is shown in weekly reports; however, does this indicate the level of interest? The purchased spend is understood as direct purchases, and the management team members are able at best to give a very rough estimate of the indirect or total purchased spend. When interviewed, no management team member recognised the relative share of the purchased spend. Many mentioned 30-40%; however, when asked in detail, it was identified as the share of BOM-related direct materials.

### Perception of opportunities to differentiate

The VP SCM regards strong relationships with global key component suppliers as the most important way to achieve a strategic competitive advantage over competitors. The purchasing policy has been developed with long-term goals and thus creating *“long-term stability should also help us in times of growing demand and a general lack of components.”* Key ways to reduce costs are *“early involvement in development projects and good knowledge of market prices”*. The VP SCM wants objectives and focus areas to be developed for sourcing, risk management, and legal contracting practices in Asia and Eastern Europe, but his views were at least to some extent in conflict with e.g. the R&D management.

Other top management members perceive SM opportunities in a more operational way. Relatively, the purchased spend is identified as being important; however, the solution in terms of savings is perceived as being more purchases from China and India. No mention was made of, for example, joint innovation or early involvement or collaboration on product development. One of the most positive comments was *“when playing with big numbers, smaller changes can also be significant”* (CEO).

### Methods of supply management to create competitive edge and to decrease costs

The perceived methods of SM varied a lot, both contentwise and as the order of mentioning, indicating that they have not been actively discussed together. Overall, the methods of modern SM were weakly recognised. Some interviewees were visibly embarrassed by this question. The answers were mostly generic, such as:

- *“nothing comes to my mind now; might there be some software programs?”*
- *“identify customer needs and find the right sources”*
- *“our own strong knowledge of technology helps in the utilisation of suppliers”*
- *“make/buy decisions”*

- *“our professionalism arouses appreciation from the supplier’s side”*
- *“the success of procurement is visible through pricing opportunities”*
- *“good forecasts”*
- *“in the field, in Moscow and Shanghai”*

A summary table of the individual perceptions of methods is presented as Table 4.

The methods mentioned concentrate around product development, cooperation and supplier relationships. The answers can be seen as being well aligned with the identified dominant logic, the perceived cruciality of product development, described below. Three key interviewees emphasised that there is no remarkable need to improve performance or cut costs. On the other hand, a link to company strategy was identified by three respondents.

Product development was understood by four interviewees as being an important factor in managing competitive edge and costs, but cross-functional cooperation was not mentioned at all. Later training exercises for R&D and PSM personnel revealed that the cooperation between R&D and PSM had been limited, sometimes even hostile. The functional silos were easily recognizable.

Cooperation and deeper relationships with existing suppliers were recognised by four respondents as important ways to develop competitive edge or cut costs. The sourcing of new suppliers was mentioned as important by six interviewees.

What is noteworthy is the lack of mentions of the more effective utilisation of competition between suppliers in any form. Later discussions as a participant observer among R&D and purchasing personnel revealed that competitive bidding rounds were regarded as less aggressive or formal, often called an *“inquiry about prices”*.

Table 3. Perceived methods to create competitive edge or to decrease costs within Beta. The order in which an issue was mentioned within an individual interview is described as a number in the table. My interpretations or questions in bubbles.

Perceived methods to create competitive edge and reduce costs										Case Beta	
Perceived method	Role	CE	Ma	Ec	De	Sa	Sc	IT	R&D	Pe	
(No need to reduce costs)		x									No perceived need to reduce costs
(No strategic role)											
Strategic role											
	Link to company strategy		3				4			1	
Sourcing											
	Sourcing new suppliers							1	3		
	Supply market knowledge			5						2	
	Internationalisation					2		2			
	Best suppliers						1				
Total cost											
	Total cost calculations	6							2		
Competition											
	Enhancing competition										Indicates reliance on market competition?
	Volume concentration	3		6							
Relationships											
	Deeper relationships	1		2			3				Deeper cooperation with existing suppliers perceived as a source of improvement
	Cooperation with suppliers	2		2		2					
	Open books										
	Risk sharing										
	Attractivity building										
Oper process											
	Supply chain management										Operational supply chain perceived to be in shape?
	Infra and processes			1					3		
	Cost-efficiency										Operational supply chain perceived to be in shape?
	Automatisation	4									
	Speed										
	Reporting								4		
	Target setting										
	Measurement	7									
	Penalties for weak perf										
	Exit of weak suppliers										
Product level											
	Purchasing involvement							3	1		Confirms the perceived importance of product development?
	Product development		1		1	1	5				
	Product streamlining	5									
	Supplier involvement										
	Supplier innovation										
Cross-function											
	Cross-functional cooperation										No perceived need to question the functional silos?
	Job rotation										
	Active internal role										
	Outsourcing										
e-tools											
	Portals, internet, software			3							
Skills											
	Professionalism		2								
	Negotiating skills			4					4		

### Education and experience

The interviewees have multifaceted backgrounds and experience in various tasks within the company and elsewhere. Many of the interviewees had individual experience of purchasing, although none had formal education in modern SM, nor individual experience in companies in which SM had been brought to the forefront. Several interviewees perceived PSM as a mirror image of sales and also identified the increasing amount of service purchases and services sold as different aspects of the same phenomenon.

### Reporting of externally purchased spend

The direct spend is reported as the total sum of “materials”. A key measure is the total share of materials versus turnover, understood as the price index or inventory turnover. Indirect purchases were not reported or addressed as an entity, but fragmented as “other costs” to functional areas of responsibility and discussed separately, when needed. Direct and indirect purchases have not been assessed as one entity and no one expressed any reasonable figure for indirect purchases; it had never been calculated. Thus, the reporting practice tends only to recognise the direct spend as the purchased spend.

### Dominant logic

In Beta, the dominant logic seemed to be an engineering focus, emphasising success on the basis of the high level of product design and the high quality of products.

The management perceives the company as “the high-quality technological leader and niche producer”: Beta wants to be the market leader in the high-quality product segment, and regards an emphasis on purchasing and lower costs as a risk for the brand image and marketing messages. Good relationships and cooperation with selected long-term suppliers are seen as a natural way to guarantee performance.

Continuous product development in good cooperation with leading component suppliers is perceived as being the core of its success. R&D often makes strategic supplier selections by tightly predefining the components without extensive market analyses and competitive rounds which connect to suppliers and start negotiations. Purchasing’s task is to participate in price negotiations and its role is understood as finding lower-cost suppliers and buying cheaply, which is perceived as being in conflict with promises to customers. There seemed to be repeated conflicts between the functions of R&D and procurement. The prevailing dominant logic thus tends to neglect purchasing’s opportunities to create a competitive edge.

### The perceived role and framing of purchasing

All internal reporting, measurement, and incentive systems are focused on price, availability, and the capital employed (i.e. traditional measures of purchasing and logistics). The management team discusses SM on the basis of the evolution of the price index, inventory turnover, and quality reports. Problems with availability or quality push procurement onto the top management’s agenda. Broader supply market-related issues seem not to be discussed by the top management.

The interviews reveal several factors limiting the perceived role and opportunities of purchasing, although not all were clearly explained.

The management seems to be organisationally, physically, and mentally distant from the purchasing department. The purchasing team's office had been situated on the same floor as R&D for a year. However, cooperation was not yet smooth as they sometimes argue and blame each other for the functional sub-optimisation of the company's objectives. The role of purchasing is perceived as sourcing and the selection of lower-cost suppliers.

The SC management regards sourcing as an important area that should be developed towards a strategic activity. However, other management team members perceive the purchasing organisation's focus as remaining on operational purchasing. In the extreme view, purchasing's role is perceived as ordering and the transfer of messages between internal users and the suppliers, although endeavours have been made to develop a stronger role, with some good results being achieved. In several interviews, active sourcing was perceived as being openly or implicitly connected to quality risks: "*Purchasing's role of buying as cheaply as possible is sometimes in conflict with customer benefits*" and "*a broader role*" is regarded as being required to support business better.

A barrier to the evolution of procurement has been strategic-level selections on the (low) importance of procurement, leading to only limited investments in PSM personnel: "*China and India are managed with three sourcing people only, although we are actively looking for Asian customers, local modifications, and growth*" (VP SCM).

The local engineering mindset has been a significant barrier to change: "*what you design, you also manufacture*" (VP SCM). The adequate quality and delivery capabilities of Chinese suppliers have been broadly doubted and questioned, and some setbacks have also occurred.

On the basis of external consultants' proposals, the management had also been thinking of opportunities to outsource the entire purchasing function. Does this again indicate that the tasks and role of procurement are perceived extremely operationally?

The purchasing department was considered to be relatively good at purchasing (i.e. negotiating prices and costs); however, they themselves perceive that the strategic potential of SM lies in early involvement in development and strategic discussions on the real needs of customers: "*does a cheap product really need a six-Euro chip or would a 50-cent chip be sufficient?*" (VP SCM).

#### PSM-related terminology

Terminology reflects the operational role and framing. The key task of the purchasing function is price-focused – to buy cheaply and source new lower-cost suppliers, as noted above. An oft-repeated term is a soft "*inquiry about prices*", reflecting a passive attitude to suppliers' pricing.

## Summary

Because of increasing competition and globalisation, the business environment demands cost-efficiency, flexibility, and speed. The sourcing of resources and capabilities in China and India has been developed, although the role of purchasing remains mainly traditional. A dominant logic is apparent from the management's interviews, emphasising the importance of R&D and efficient production but neglecting PSM. The management has no clear perception of the strategic potential of SM, because:

- there are no reports addressing the relative size and importance of the external spend; only product-related purchases are covered;
- supply markets and their implications are not systematically analysed by either R&D or within the strategy process;
- there is no common understanding about the methods of SSM;
- there are some experiences of improvement but no common understanding of the size of the achievable economic results.

Because of several factors, drivers for essential changes in the way of thinking and operating have been insufficiently strong.

### 5.3 Case Gamma

Gamma competes nationally in a slow-moving low-tech business. The company comprises several small plants, each operated and managed locally but loosely coordinated centrally. The company culture became fragmented as the firm grew through acquisitions. The local units were responsible for their own profitability and, over the previous five years, central coordination of purchases had been limited to main investment categories such as, for example, production machines, which were similar in several units. The management's focus was on the efficiency and profitability of daily operations. Purchasing was perceived as being merely an unavoidable part of local operational management. Local service companies and spare part suppliers comprised a significant proportion of suppliers. Speed and service were perceived as being more important than the price or cost of purchases. The list of suppliers contained about 6000 small local companies and the purchased spend was extremely fragmented, with tens, or even hundreds, of suppliers in each category.

A common Europe-wide sourcing exercise (Gamma 1) had been initiated approximately five years prior to this study, since when a few large category teams had had irregular meetings, but without clear target setting and follow up.

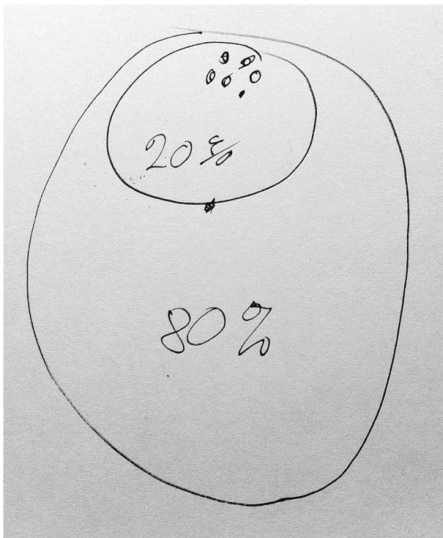
#### Top management cognition of supply management

There was a rare opportunity to interview three successive CEOs at Gamma. The first, CEO A, had been in charge when the first supply development project was initiated as part of the Europe-wide exercise within the parent corporation. CEO A described the situation before this initiative:

*“The top management did not have any idea of supply management’s potential as a source of competitive advantage, the methods of effective supply management, or the efforts needed.”*

This first development project reached measurable results and savings of several million Euros, but did not significantly change the organisation’s PSM practices. Another training initiative (Gamma 2) was proposed by a new chairman a year before the interviews.

A key event in Gamma’s SM evolution was probably a training seminar in which CEO B suddenly stood up and drew two circles, the inner representing the 20% of internal resources and the outer representing the 80% of external resources utilised by the company. He said that he had just had an insight into the crucial importance of external resources and how weakly they had been managed, with limited resources, weak processes, and very traditional capabilities. What could be a stronger indication of top management’s nascent recognition of SM’s importance?



*Figure 9. CEO B’s insight into the importance of external resources (Gamma).*

The interview with CEO C was interesting. He was the chief operating officer (COO) during both projects, but appointed CEO in a late phase of the second development project. Some months earlier, he had strenuously opposed the owner’s proposal to again address procurement with a time-consuming project, arguing his case on the basis of several criteria:

- “I did not believe that there would be any more room for development...
  - o ...we had done it already five years ago and got significant savings,
  - o ...we did not believe that there could be more ‘air’ in the prices,
  - o ...the independent business units made good profits; I had full reason to believe that people take care of their duties.”

- “I did not want to waste my organisation’s time on unprofitable projects.”

When the strong pressure from the owner’s side became obvious, he wisely stepped aside:

- “When the owner was demanding and seemingly had belief in the new project, I stepped aside and let the new CPO lead the project.”

Finally, he admitted his emerging cognition:

- “That we got such good results was a big surprise for me.”

Supply management had risen to the top management’s agenda

The latter SM development initiative led to the regular handling of SM-related issues by the top management team, new reporting and control systems for the purchased spend, new recruitment and internal job rotation to SM, and continuous improvement plans regarding purchased categories. Thus, there were several indications of the significantly increased perceived importance and top management cognition of SM. It also led to the appointment of the purchasing executive as CPO and to the top management team.

Supply management’s role in the annual strategy process

During the interviews, it was evident that the management team now regularly discussed SM and that savings and other forms of SM improvements were calculated and closely monitored. SM also played an important role in the ongoing strategy process. Thus, all the selected criteria for top management cognition of SSM were now met.

PSM’s role and terminology before the second initiative

In the interviews, as well as in the training seminars, it also became obvious that this had not been the case earlier. Earlier, the PSM tasks had been decentralised to business units and fragmented to extra duties of foremen and middle management. For a couple of years there had been a very small central PSM function, coordinating acquisitions of investment goods.

The terminology related to suppliers’ pricing reflects an operational, passive attitude. A repeated term is “*fiddling the prices*”, indicating really small expected implications.

Decentralised business model as the dominant logic

Gamma had been extremely decentralised. The present organisation was acquired at the beginning of the 1990s as a divestment from a strong parent corporation. Some senior management members still remember those days under a strong parent company. The company has grown over the last 20 years through acquiring smaller locally or regionally operating competitors. This has further emphasised the influences of decentralisation. The business cultures of separate regional BUs have been different for historical reasons, because of their different evolutionary paths.

The local units were managed as independent local businesses, with a mostly locally structured and staffed organisation, profit responsibility, rewards, and bonuses. Regular management meetings tried to address the needs for company-level coordination and cooperation; however, the priority was always the “local business”. Cooperation within purchasing was perceived, in principle, as positive, but only if it did not impact on the unit’s independence.

#### Significant change in behaviour and results

Gamma proudly reported on performance improvement in the form of achieved savings and reduced total costs within all the categories that were addressed. The average savings and profit improvements were clearly more than 10% of the spend volume addressed in the project. These new category-based figures were taken as the basis for the next year’s plans and budgets. During the following period of business stagnation, the savings and profit improvements thus made were counted as constituting the main part of the profits of the company (interview with the CPO by another researcher two years after the original interview).

The newly launched purchasing system covered all purchases, obliging everything to be bought through the system, effectively eliminating “maverick buying”; thus, it influenced all those involved with purchases. The category teams covered all relevant parts of the organisation and their results and activities were broadly reported and discussed. With regard to the leading categories, the category strategies that were developed guided individual purchasing decisions throughout the organisation. New cross-functional teams worked on new category strategies. To minimise the pressure for maverick buying, suppliers were also informed of the change, and all supplier contacts, proposals, and bids were directed to the CPO’s office for a period of some months. All of this suggests that the change in the company’s entire purchasing behaviour was significant.

To understand what had really happened, I focused the interview questions in Gamma more on the change process, how the interviewees perceived the change and why the changes, if any, had occurred. To understand the organisational hindrances and drivers better, some mid-level executives and foremen were selected for interviews.

#### Education and experience

Again, only the CPO had a formal university education in modern SM. No management team member had been in a company that had invested in the active development of SM practices. Both of the two development projects had covered a large number of people, comprising top management, middle management, and other personnel with purchasing-related tasks. The first training sessions, five years previously, had focused on opportunities and selected methods. The latter training focused very much on reasons for the opportunities and why traditional approaches did not work effectively, covering roughly the issues taught in Aalto University’s master’s course on SM. The active teamwork and coaching on real category strategies in parallel with the workshops were together expected to be the most important driver of results.

The outcomes of the workshops and other development initiatives have been significant from the learning perspective: “Six years ago, the parent corporation came

and taught us; nowadays, we go and teach other companies within the corporation” (CPO two years after the latter project). The changes in attitudes and perceptions again support the preliminary construct, whereby education and training play a key role as drivers for the cognition and utilisation of SM’s strategic opportunities.

#### Two initiatives to develop supply management practices

As in this case I was especially interested in the evolution of and change in SM, its evolution within the company is described in detail in this sub-chapter. Two large company-level development projects (Gamma 1 and Gamma 2) create points of reference that repeatedly arose in the interviews. A comparison of these two development initiatives is of special interest, as the former did not change the management’s behaviour, while the latter did. If it is expected that cognition precedes action, the first project apparently did not ignite management’s cognition. Why?

Through an initiative instigated by the new CPO of the European parent corporation, the company ran the first development project (Gamma 1) approximately five years before this study’s interviews. Large category teams were formed and trained by the parent corporation’s consultant. Selected high-level category strategies were developed and implemented by broad cross-functional teams. The categories were large, each comprising several sub-categories with different features. Significant savings had been achieved, satisfying the management’s expectations well and even exceeding them. This project’s category teams stabilised as a form of cross-organisational cooperation, and were said to have met between two and four times a year. No clear targets were set. The savings achieved were recorded by the purchasing executive, who acted as the coordinator and secretary of all the teams. No new teams were appointed or any formal position given to the teams. The teamwork was not reported as having any impact on individual salaries or other forms of compensation. The project only changed purchasing behaviour within the focal categories. No more personnel were recruited and nor were organisational changes made. I got the impression that, following the project and the reported savings, the top management’s attitude to purchasing had reverted to “business as usual”; that is, practically no sustainable changes took place after the first initiative. This was confirmed by CEO C, acting as COO at that time, who said he believed that “the work was done and the savings had been realised”; that is, he did not personally foresee any further opportunities.

The director of purchasing, resources, and facilities had spoken actively of the need for further development of SM, although very little had been done for five years. A new purchasing executive had been recruited and a “purchase to pay” data system was ordered to monitor purchases. The new purchasing executive, strongly supported by the European CPO, had actively participated in several indirect categories across European countries and achieved “remarkable” savings on some investment-type purchases. He had received individual in-house appreciation and encouragement for further savings activities. However, as the organisational responsibilities were not changed, the organisation remained fully decentralised into local BUs, which had full responsibility for their own economic performance. The purchasing executive, however active, had no presence in the management team nor the power to dictate or make decisions. The European CPO also identified similar situations in other countries, regarded this as a waste of obvious opportunities, and instigated a new trial to activate development in selected countries as national projects with corporate

support and locally selected external advisors/trainers. The newly elected chairman of the national board of directors pushed the initiative at the top management level and demanded the setting of aggressive targets.

This second push from the owners led to a new development initiative (Gamma 2), formally very similar to the first one. A comparison of the initiatives is shown in Table 4.

*Table 4. Comparison of Gamma's two development projects.*

	<b>Gamma 1</b>	<b>Gamma 2</b>
<b>Similarities between projects</b>		
Initiator	Corporate owner	Corporate owner
Project plan, guidance, & content	External trainer	External trainer
Participation	Broad, multiple levels	Broad, multiple levels
Category teams	Cross-organisational	Cross-organisational
Form	Training seminars + category teams	Training seminars + category teams
Theory & practice	Theory lectures + practical tools + teamwork	Theory lectures + practical tools + teamwork
<b>Differences between projects</b>		
Level of push from owners	Corporate purchasing to national purchasing	The new chairman to CEO
Objectives	Training and moderate savings as a by-product	Improved company performance, demanding savings as a part of company budgets
CEO commitment	Formal, not fully committed	Strongly committed after individual cognition
Project leadership	Purchasing executive, expert role, limited power	CPO appointed during the project, strong mandate
Pace	Three 2-day sessions	Seven workshops, hands-on learning in small teams
Team size	Large teams	learning in small teams
Language	English	Finnish (mother tongue)
Length	3 months	6+ months
<b>Differences in organisational situation</b>		
Role of company purchasing	Supporting expert, doer	CPO with dedicated task to coordinate, develop, and make savings
Information systems	Fragmented, no purchasing automation	New common purchase to pay system recently implemented
<b>Differences in business environment</b>		
Economic situation	General boom	Early emerging signs of business downturn
Competition	Business as usual	Increased competitive pressure perceived

### Financial implications

Financial improvement	Remarkable savings in selected categories (5-10%)	Remarkable savings in selected categories (10-15%)
Integration to budgets	No integration	Immediate integration to budgets and plans

As shown in Table 4, there are several significant differences that make it difficult to define just one reason for the better success of Gamma 2. A harder push from the owners at a higher organisational level obliged the management to start a project and include the project targets in the company's budget figures. The parent company's attitude conveyed a strong message that there must be potential to succeed.

The earlier initiative was begun during a period of growing demand, when the perceived challenge was said to be more to find new suppliers than to think of the costs and efficiency of the present suppliers. The latter initiative commenced approximately three months before the first emergent signs of a global downturn were discussed in the media. The timing could be regarded as perfect because the focal company was nationally one of the first, and the first within its industry, to increase cost pressure on suppliers, thus utilising an obvious first mover position, which may be both an advantage and a disadvantage. However, the downturn was not the reason either for the project or management cognition of SM, although apparently it had a positive impact on the results through helping to put pressure on suppliers.

The objectives of Gamma 1 five years previously were set relatively low, "aiming not to kill the motivation through overly optimistic targets" (CPO). "Satisfactory results" were achieved in selected categories, but somehow they were not perceived as indications of more opportunities: "I thought that it is done, that all the savings had been gathered and organisational cooperation groups formed." (CEO C).

The second initiative aimed higher, targeting 10% profit improvements for all the appointed category teams. The profit improvements were calculated as total cost and value implications. Demand and design changes, innovative new solutions as well cooperation with new more capable suppliers consisted remarkable sources of the profit improvements. The outcome was good, the results clearly exceeding 10% in all the sub-categories that were addressed. After the project these new figures were taken as the basis for the next year's plans and budgets.

The CPO was interviewed again two years after the first interviews. He regarded the following as key drivers for the exceptional success of the latter development project:

- the owner's strong and visible demand that SM savings and profitability improvements should regularly be reported to the management team and board of directors;
- a fully dedicated, newly appointed CPO with an empowered role;
- the CEO's strong support in the early phase of the project: "*CEO B visibly had some kind of intuition, individual cognition of the importance and opportunities of supply management.*" (CPO).

The first indications of an economic downturn were experienced during the project. They further improved the fiscal results, although they did not seem to play a significant role in the change in behaviour and the contents of the achieved results. However, during the following period of business stagnation, the savings and profit improvements earned through this PSM initiative were counted as constituting the main part of the profits of the company (CPO two years after the original interview).

*Individual causal maps*

As a participant observer during the workshops of Gamma 2, it had already become clear to me that the challenges and opportunities of SM were perceived in somewhat different ways by individual executives. In an early phase, as previously mentioned, I decided to enlarge the sample of interviewees to cover selected executives with different positions, ages, and lengths of tenure across the organisation. To better understand the logics behind the different opinions that were expressed, I tried to capture the individual reasoning of the insights through drawing causal maps for each interview, one of which is shown below.

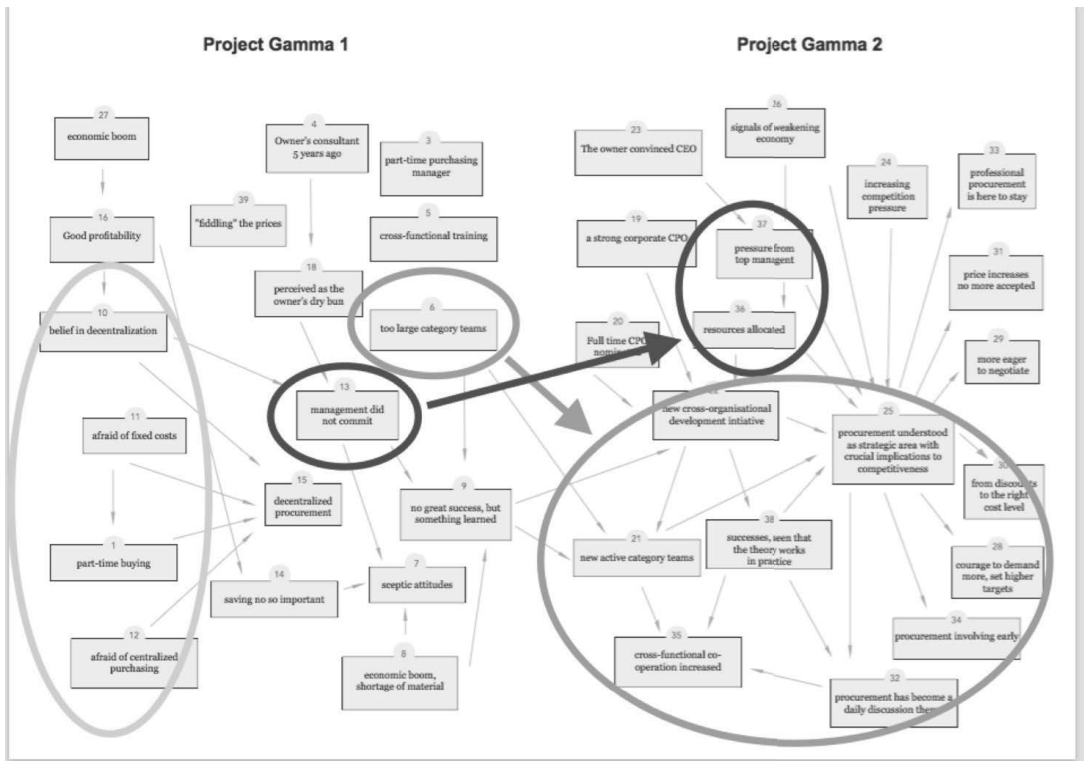


Figure 10. Sample causal map showing perceived causalities between expressed issues in an individual interview. In this interview it was easy to differentiate the two projects, Gamma 1 and 2, and their outcomes. Changes in top management commitment (black) and cross-organisational cooperation (grey) are clearly visible. Some drivers of the decentralised dominant logic are also spelled out (light grey).

Before – after

Like the map above, most of the causal maps were easy to divide into two or three time zones, before and after the first project and now; however, some interviewees only differentiated before and after the latter initiative, describing the outcomes of the latter project as the final parameter. The majority of the interviewees began their explanations from the beginning of their individual career in the company. “Before” is something general before the latest change process, mixing different perspectives and experiences from very different time slots. Apparently “before” can, in the same sentence, contain perceptions from 30 years ago and also from a year ago. I interpret this as indicating that the interviewees differentiate their mental models between before and after their individual insight or change.

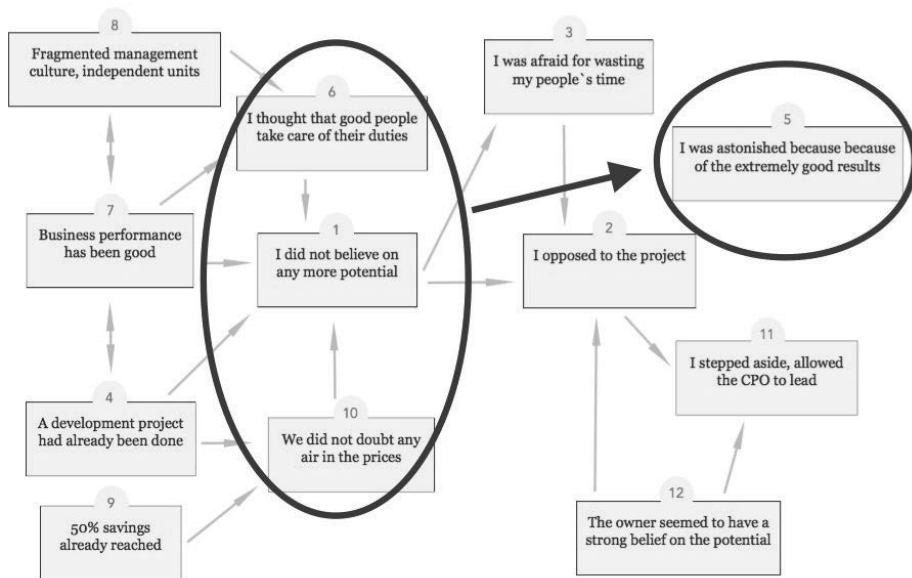


Figure 11. Another top executive (COO / CEO C) emphasized his reliance on his organisation's skills and capabilities as well as his missing belief on improvement opportunities.

An interview of another top executive is drawn in figure 11. He strongly opposed the suggested development project because of his missing belief on improvement opportunities. He also expressed his reliance that his organisation has “taken care of

their duties” and did not want to waste his organisation’s time. Finally he just constated his astonishment, because the results were so good. During the interview he did not open or reflect any potential reasons of the astonishing results.

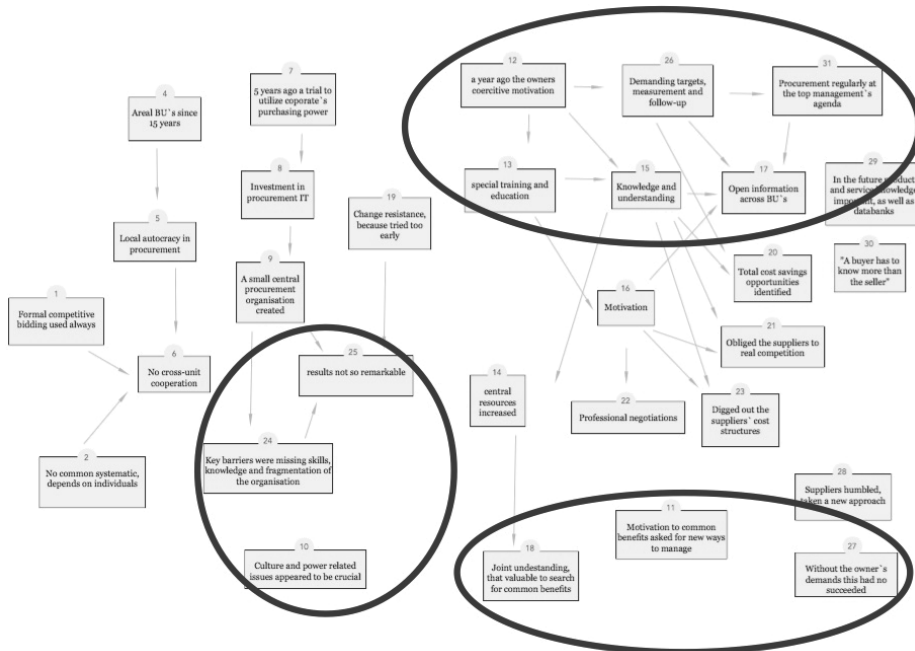


Figure 12. The CEO (B) in Gamma recognised key reasons for both the less remarkable results of the first initiative (Gamma 1) and the key drivers of success of the second, (Gamma 2).

The CEO (B) in Gamma recognised key reasons for both the less remarkable results of the first initiative (Gamma 1) and the key drivers of success of the second, (Gamma 2). He also recognised the need for new ways to manage the fragmented organisation towards common benefits as well as the cruciality of the owner’s “coercive motivation”.

To better identify and understand the potential barriering factors, I tried to summarise into one graph those directly indicated causalities which were perceived as having led to the failure of the first SSM development initiative. The resulting graph is presented as Figure 13.

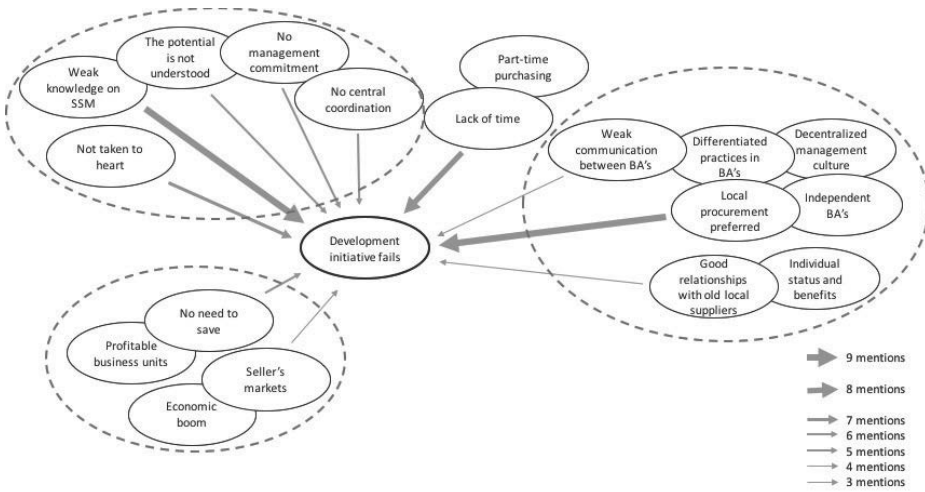


Figure 13. Perceived reasons driving the failure of the SSM development initiative

To further deepen my understanding and to get another view of the barriering factors, I gathered perceived causalities which led to the success of the second initiative into Figure 14.

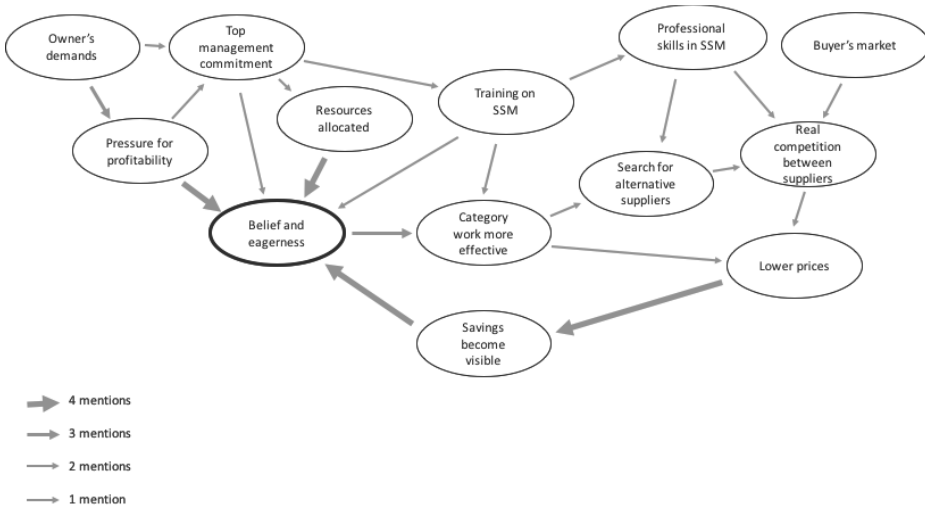


Figure 14. Perceived reasons driving the success of the SSM development initiative.

The causal maps presented in the figures above can be interpreted to suggest the importance of:

- perceived importance caused by stagnating business and the owner’s active push, which drove
- top management commitment, which drove

- investments in training and resources, which drove
- improving professionalism and active category team work, which drove
- the pooling of volumes and active utilisation of competition, which drove
- practical results and economic savings, which drove
- “eagerness and belief” in SSM, which again drove and strengthened motivation on further work

In the previous, less successful project, some of these factors were perceived just the other way round, for example:

- the growing business and strong performance reduced the pressure to improve,
- the initiative was perceived as just a functional exercise by functional PSM management, not an impelling pressure,
- the top management did not commit itself to SSM and maintained the neglect of SM’s importance, despite formal training and good results of the development project.

The national competition had increased and participation in international cooperation with sister companies had opened up views of different cost structures across countries. Before the change brought about by the latter development project, the dominant logic emphasised the importance of efficient local production and performance (“let all the flowers bloom”), but neglected PSM. This had not changed despite the successful results achieved through the synergetic results of the first cross-organisational category teams during the first PSM development initiative. Somehow the second initiative induced a radical, broadly identified change in both thoughts and behaviours. PSM and external resources were perceived in a new way, further encouraging “belief and eagerness in supply management’s opportunities”.

In Chapter 7.4 I will suggest a vicious circle which integrates these two different views with the observations from all three cases.

## 6. Developing propositions through cross-case comparisons

In this chapter, I will summarise the identified patterns across the cases, compare the findings to the literature, and develop propositions. Throughout each case, I have sought indicated causal relationships between issues that potentially act as barriers to the adoption of strategic supply management (SSM), explain them, or are somehow connected with them. The following cross-case analysis is based on comparisons of the five change projects identified in the three case companies:

- Alpha1: Integration of the fragmented purchasing functions across the corporation into one functional unit (about five years before the interviews)
- Alpha 2: Systematic training of the PSM personnel into modern SSM-thinking in three waves (about a year before the interviews)
- Beta 1: Slimlining supply and logistics when building and organising a new plant (about five years before the interviews)
- Gamma 1: Cross-organisational training of PSM related personnel and middle management (about five years before the interviews)
- Gamma 2: Cross-organisational training of PSM related personnel, plus top and middle management ( about nine months before the interviews)

The relevant literature was continuously “enfolded”, in Eisenhardt’s terms, through parallel elaboration of the managerial cognition and institutionalisation literature with the empirical observations and ideas that were born. Emerging findings and ideas were continuously written down as memos and preliminary categorized during the data gathering and analysis phases. The memos overlapped and evolved during the process. The findings and linkages between them and categorisation issues were occasionally discussed by the research team and tested in discussions with representatives of the case companies. Below, the identified potential barriers and root causes are categorised, combined, and compressed under key headings and main categories. Below the main categories will be addressed, argued, elaborated, and discussed. Categories related to general challenges of organisational change (change resistance) were left out of this elaboration in a late phase of the work. They may be barriering factors, but they have been broadly discussed in the change management literature and do not offer any special new contribution to the insights developed here.

In the following the compressed categories of barriering factors are listed as well as a short description of the way they have been identified.

1. The perceived strategicity, its factors and outcome were identified directly from the interview answers across cases:

<ul style="list-style-type: none"> <li>• <b><i>Perceived strategicity:</i></b></li> </ul>	<ul style="list-style-type: none"> <li>○ <i>No perception of strategicity (Alpha, Beta, Gamma1)</i></li> <li>○ <i>No indications of active role in the strategy process (Alpha, Beta, Gamma1)</i></li> <li>○ <i>Outsourcing perceived as strategic, but not a PSM issue (Alpha, Beta, Gamma1)</i></li> </ul>
<ul style="list-style-type: none"> <li>• <b><i>Perceived economic importance</i></b></li> </ul>	

- *The real share of external resources remarkably underestimated (Alpha, Beta)*
- *PSM perceived as a direct spend issue only (Alpha, Beta)*

- ***Perceived opportunities for differentiation***

- *Methods recognised weakly (Alpha, Beta, Gamma 1)*
- *Differentiation opportunities underestimated, not recognised (Alpha, Beta, Gamma 1)*
- *Large variation of perceived methods would indicate that those issues have not been discussed together (Alpha, Beta)*

- ***On the top management agenda:***

- *No perceived regularity on the top management agenda (Alpha, Beta, Gamma 1)*
- *“Only when there are problems” (Alpha, Beta)*
- *Formal operational figures on SCM reported monthly, focus on capital employed, generic price indices, etc. operational figures (Alpha, Beta, Gamma 1)*

2. Based on the preliminary model, education and SSM related experience of the interviewees were assessed through the interviews and confirmed by asking individually or reading in the annual report.

- ***Education:***

- *No individual education in SSM, despite the new CPO in Gamma (Alpha, Beta, Gamma 1)*

- ***Experience:***

- *No individual experience of modern SSM (Alpha, Beta, Gamma 1)*

3. Top management commitment was identified as a key difference between the development projects Gamma 1 and Gamma 2, and after that checked in the interview answers (CEO’s and other top management team members in Alpha and Beta)

- ***Top management commitment:***

- *Top management committed, but development was regarded as a functional organisation issue (Alpha 1)*
- *No perception of strategicity, training was regarded as a PSM’s internal issue (Alpha 2)*
- *No perception of strategicity, no top management commitment (Beta)*
- *No top management commitment in Gamma 1, but strong commitment in Gamma 2*

- ***Cross-organisational issue***

- *Top management committed, but development a PSM’s internal issue (Alpha 1)*
- *Training limited to PSM’s internal issue (Alpha 2)*
- *No SSM related cross organisational training or discussion during Beta 1*

- *Broad cross organisational training both in Gamma 1 and Gamma 2. The latter, Gamma 2, encouraged more towards real cross organisational teamwork with high targets in smaller focused category teams than Gamma 1*

4. Limited reporting was identified through the interview answers and checked through PM in Alpha, VP SCM in Beta and CPO in Gamma:

• **Reporting on externally purchased spend:**

- *Reporting only focuses on operational issues (Alpha, Beta, Gamma)*
- *Reporting is fragmented across functional responsibilities (Alpha, Beta, Gamma)*
- *Reporting is fragmented and partial in public reporting (Alpha, Beta, Gamma)*
- *Not all the external spend is identified as purchased spend (Alpha, Beta, Gamma)*
- *The whole sum of the external spend is not recognised, nor even calculated (Alpha, Beta, Gamma 1)*

5. Dominant logic was identified in the interviews, through repeating expressions "we think" in Alpha, evaluated from the interviews in all the cases and tested with management (CEO and PM in Alpha, all the top management team in Beta, CEO B and CPO in Gamma).

• **Dominant logics of management:**

- *Inward-oriented, neglecting external resources (Alpha, Beta, Gamma 1)*
- *R&D focus, purchasing not important (Alpha, Beta)*
- *High-quality branded products, purchasing can jeopardise quality (Beta)*
- *Central coordination impacts negatively on business units' independence (Gamma)*
- *General beliefs in the background?*

6. The operational role and operational framing of PSM as well as the transactionality of the terms used were identified in interviews and after that systematically sought in all the interviews through word level analysis.

• **PSM-related terminology is transactional**

- *The terms used indicate that PSM is expected to have only a minor influence on prices and costs (Alpha, Beta, Gamma 1)*
- *The broader terms used by the interviewer were often converted in the answers to traditional transactional terms*

• **PSM perceived as only playing an operational role:**

- *Strategic opportunities identified weakly, if at all (Alpha, Beta, Gamma 1)*
- *“Routine negotiations” are perceived as key capabilities (Alpha)*
- *“Bargaining” is perceived as being a key skill and tool (Alpha, Beta, Gamma 1)*
- *Strong negotiation is appreciated (Alpha, Beta, Gamma 1)*
- *Satisficing – average is sufficient – no pressure for radical improvements (Gamma 1)*

● ***Purchasing and supply management framed transactionally***

- *No mention of actively influencing suppliers’ performance (Alpha, Beta, Gamma 1)*
- *“Inquiring” about prices indicates perceived inability to influence them (Beta)*
- *No mention of (strategic) segmentation of suppliers or categories (Alpha, Beta, Gamma 1)*
- *Use of the wording “market price” indicates powerless acceptance of given price level (Beta)*
- *“Price fiddling” indicates marginal expectations (Gamma 1)*

7. Belief in market competition as a sufficient price mechanism was identified as an abductive evaluation of the findings, searching for potential common root causes for the findings. All the findings can be somehow explained through this belief or easier to understand in the light of it.

● ***Belief in market competition as a sufficient price mechanism:***

- *“Market price” indicates reliance on market competition as a sufficient price mechanism*
- *“Price fiddling” indicates marginal expectations*
- *“Routine negotiation” indicates marginal expectations*
- *“Secretary or purchasing people” reveal perception of marginality (Alpha)*
- *Scale advantage regarded as a key source of savings (Alpha, Beta, Gamma 1)*

## **6.1 Observations relating to preliminary constructs and hypotheses**

Within all the case companies, the expected phenomenon was clearly visible: the share of the purchased spend was high, but supply-related issues were on the top management team’s agenda only as operational issues, either as routine reporting of operational figures or relating to some sort of problem. The perceived content of the purchased spend was limited to direct, production-related purchases and neither its relative importance nor differentiation opportunities were recognised. The strategicity of SM was neither recognised nor visible in strategy processes. None of the three preset criteria of SSM (i.e. part of the company’s strategy, of continuous concern to the top management, and understanding of alternatives and opportunities) were met.

In Gamma, this was the situation before the top management's newly-born recognition of SM.

#### Perceived strategicity

SM was not perceived as strategic by the three top management teams. Only Gamma after the change met the criteria for SSM set earlier. "Supply management is not so important for our company, because we are a high-quality technology leader in R&D-driven business" (VP, Beta). SM-related issues arose in the company's strategy process only through the production-focused SCM organisation's operational strategy process flow (i.e. Alpha and Beta) or hidden in operational plans and budgets (i.e. in Gamma before the change). In Alpha, SM-related issues were perceived as being on the top management team's agenda irregularly and, according to several interviewees, "only when there is a problem"; for example, when a supplier delivers poor quality or late and, thus, production and customer deliveries suffer or are put at risk ("Supply management-related issues are on the top management's agenda only when there is a problem", BU director, Alpha). Supply-related issues were presented to the management team by VP Supply Chain (SC), an important focus being on quality and logistical efficiency, the capital employed, and availability. In Beta, the supply chain management (SCM) responsible presented purchasing and supply management (PSM)-related issues, if needed, when something "special" occurred; for example, "supplier delivery or quality problems". In Gamma, SM-related issues before the change were perceived as being local business issues and were seldom discussed by the management team. "Earlier, the management did not have any idea of supply management's potential as a source of competitive advantage, the methods of effective supply management, or the efforts needed" (CEO A, Gamma). This was confirmed in Alpha and Beta through questions on methods.

#### Perceived economic importance

The management team members in Alpha and Beta did not know the relative share of the externally purchased spend, but underestimated it, many about to the level of the direct spend, the external part of the Bill of Material (BOM). Because the indirect spend in all the companies was remarkable, the estimated relative share was roughly at the level of half of the real share. The externally purchased spend was thus perceived as a minor share of the company's cost structure. This observation was in a way conflicting, because many interviewees had addressed their perceptions of the growing relative importance of PSM.

#### Perceived opportunities for differentiation

For the purposes of this research I have selected knowledge of the methods of modern SSM as a proxy for the identification of strategic opportunities through them. I expect that opportunities to differentiate oneself from one's competitors depend on the capability to use different methods of SSM. If a broad set of methods are understood, then the opportunities achievable through them can also be identified.

Most of the interviewees somehow confessed their weak personal knowledge of the methods that PSM has to improve the company's performance. Their answers to questions concerning methods varied widely, which can be interpreted as meaning that there have been no common discussions of these issues. Nobody in Alpha or

Beta mentioned the (strategic) segmentation of the purchased spend or total cost implications, which can be regarded as the two most important frameworks of SSM. (The table covering the perceptions of methods is presented as Figure 6.)

#### A minor role on the top management agenda

In all the case companies operational figures, such as the capital employed, turnover rates, and price indices were reported by the SCM responsible. These reports were not perceived as having strategic meaning. Not one of the interviewees indicated any perception of regularity or importance on the agenda. Many interviewees, including the VPSCM of Beta, reported their perception that PSM issues only appear on the top management's agenda when there are problems.

#### Education and experience

Limited education in and experience of modern SM was preliminarily expected to be a key reason for weak cognition of SM's strategic opportunities. Only one interviewee, the purchasing executive/CPO in Gamma, had a university education in modern SM. In Alpha and Beta, not one of the management team members had undergone SM-related education. As the variation in the educational backgrounds was minimal, no deeper conclusions could be drawn but it can be stated that the findings fit the preliminary model, as well as the basic ideas of cognition theories. Within the second initiative in Gamma all the top and middle management participated in an intensive hands-on learning exercise, which offered education in SSM and obliged the participants to participate in broad discussions of new experiences through new strategic approaches to PSM.

One of the interviewees (R&D in Alpha) had executive experience in a company with well-developed SM practices. Regarding the age of the interviewees, their educational basis in SM seems to be grounded in the thinking that was taught in universities between the 1970s and 1990s. Purchasing was then regarded as an operational part of materials management, Supply Chain thinking was in the very early phases of its evolution. Ideas on SSM (Kraljic 1983, Leenders et al. 1988), networks (Powell 1989), and external resources (Lamming et al. 1993) were presented for the first time in the literature towards the end of this period.

Some interviewees identified the educational challenge during the interview; for example, "I should probably read a book on this" (VP Development, Alpha).

The latter change process in Gamma addressed education and experience through the systematic education and training of cross-organisational teams and top and middle management at in-house seminars on modern SSM. Crucial parts of the training were practical hands-on learning exercises and building joint experience and common knowledge. After the demanding performance improvement process all three criteria of strategicity can be regarded as having been met. Thus, the radically changed strategic role of SM in Gamma also fits well to the preliminary working construct and hypotheses.

The findings support the preliminary construct regarding the role of an individual's history in the form of special education and experience, crystallised into the following two interrelated observations:

**Proposition 1a:** *An individual executive's limited education in modern supply management is a barrier to the executive's individual cognition of the strategic potential of SM and external resources.*

**Proposition 1b:** *An individual top executive's experience path, without exposure to the strategic utilisation of external resources, is a barrier to the executive's individual cognition of the strategic potential of SM and external resources.*

The variation in the key variables, education and experience, was limited; no broader conclusions can be drawn regarding the relationships and functions between the components of the preliminary model. These could be addressed more deeply through focused empirical analysis of executives with different educational backgrounds and experience paths. However, the findings support the preliminary expectation that limited individual education in and experience of SSM are barriers to perception and cognition of its strategic importance. The observations also indicate that both education in and experience of modern SSM are generally rare within senior cohorts of management.

The observations fit the preliminary model as expected. No observation clearly questioned the model. The strategicity was not recognised and the two suggested key drivers of cognition of strategic potential were missing in four of the identified projects in the three case companies. The model was developed for research planning purposes only, and the empirical observations suggest other barrier mechanisms not included in the model.

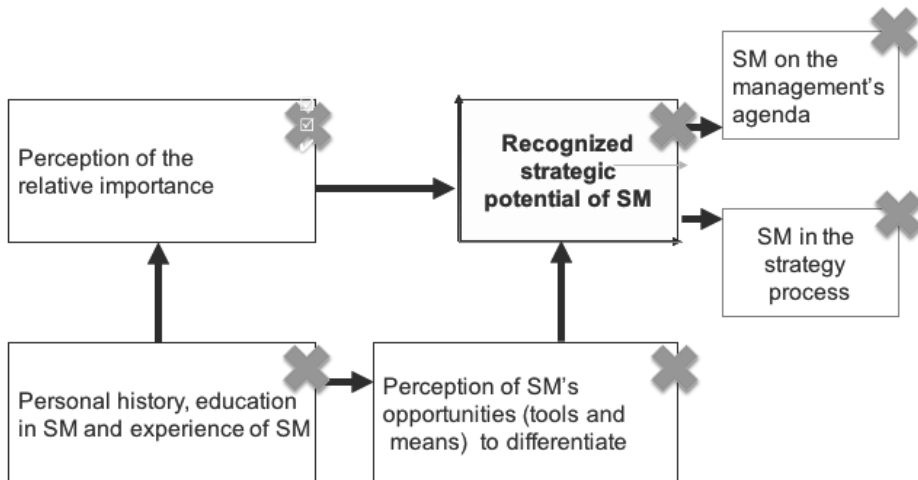


Figure 15. The observations referred to the preliminary model in Alpha, Beta, and Gamma 1.

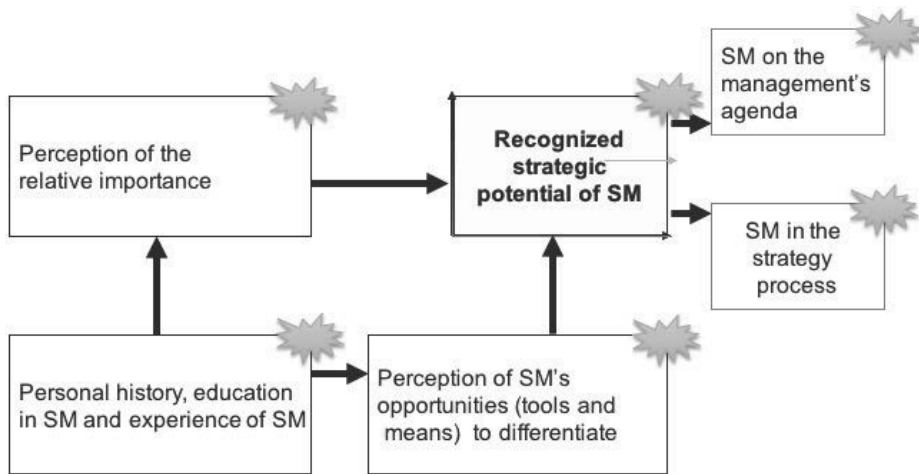


Figure 16. The observations referred to the preliminary model after Gamma 2.

The empirically identified rarity of modern education in SSM suggests that generally the managerial education in PSM was also non-existent or traditional, and experience paths were from companies with a traditional operational PSM orientation. Both of these can be seen as factors maintaining the status quo.

	Alpha 1	Alpha 2	Beta 1	Gamma 1	Gamma 2
Key content	Re-org purch	Purch training	Supply chain optim	Cross- funct training	Cross- funct reframing
Meets criteria of strategicity	-	-	-	-	+
Perceived importance	-	-	-	(+)	+
Perceived differentiation pot	-	-	-	(+)	+
Individual edu	-	-	-	(+)	+
Individual exp	-	-	-	(+)	+

Figure 17. The five change projects related to SM

## 6.2 Other observations

Even the first evaluations of the interview answers indicated the existence of other related mechanisms to explain the phenomenon of interest. Emerging findings and ideas were continuously written down as memos during all the data gathering and analysis phases. The memos overlapped and evolved during the process. The findings

and linkages between them and categorisation issues were occasionally discussed by the research team and tested with representatives of the case companies.

#### Production-focused reporting on external spend

In Alpha and Beta, the total sum and content of the indirect spend in a broad sense had never been calculated. A Bill of Material (BOM) contains externally purchased materials, components, and services, but they are seen and evaluated from the production point of view. As mentioned in Chapters 6.1 and 6.2, the top management teams' discussions tend to focus on production problems, quality failures, and delays to production. Only the production-related direct spend was visible in managerial reports as purchases. This makes it understandable that most of the management team members perceived only direct purchases as the total purchased spend. In Gamma, an analysis of the total spend had been initiated five years previously during the first development project; however, it was not systematically reported at the management team level before the second initiative (Gamma 2).

The standard management reporting systems in the case companies did not give a clear picture of the firm's use of external resources and capabilities, because the total use of the externally purchased spend was not reported as an entity, but fragmented under different units of the organisation and headings in the profit and loss statement. This was an apparent hindrance to SM generally becoming a focus of attention for individual executives and the management team. Management reporting can be regarded as playing a natural role in being a barrier to or enabling understanding of both the content and relative importance of the external spend.

***Proposition 2:*** *Fragmented and production-focused management reporting of the external resource spend creates a barrier to cognition of the economic importance of SM and external resources.*

The production-focused reporting of the external spend is well aligned with the identified inward-oriented dominant logics of the case firms and can be seen as a factor maintaining their internal orientation.

#### Inward-oriented dominant logics

There were prevalent strong dominant logics within the management teams of each case company. When the dominant logics of the three cases are compared, some common features can be identified. In Alpha, the dominant logic emphasised the importance of long-term R&D projects and regarded production costs and PSM as less important. In Beta, the dominant logics emphasised high-quality branded products, for which PSM might even cause quality risks. In Gamma, the dominant logics emphasised the independence of BUs, which is in conflict with SSM's ideas on coordination. The strategic supplier selections and decisions were actually made by either R&D or local BUs. This can be seen as reflecting the prevailing focus on internal resources as the key source of competitive edge and regarding external resources as less important.

***Proposition 3:*** *Inward-oriented dominant logics of top management teams create a barrier to cognition of the strategic potential of SM and external resources.*

Inward-oriented dominant logics can be seen as maintaining the identified traditional operational approach to PSM.

#### Transactional terminology

Although the interviewer systematically formulated questions using the broader term “hankinta” (= procurement, supply management), the terminology employed by the interviewees was mainly traditional and transactional (“osto, ostaminen” = buying, purchasing). This seems to reflect the general vocabulary regarding these issues: broader terms are relatively new, and not broadly established in the common language. In the Finnish language the emphasis may be even more transactional than in English.

Another point of view is that the terms used seem to indicate that purchasing is perceived as having only a marginal influence on prices (e.g. Alpha: “routine discounts”, “bargaining”, “routine negotiations”, and “secretary or purchasing department”; Beta: “inquiry about prices”, and Gamma: “fiddling the prices”, “air in the prices” (that is, there is a “correct” price). These repeatedly employed wordings suggest that the speaker regards the potential results of the PSM function’s participation as relatively negligible. The terminology seems to convey a perception of a transactional, operational role for PSM and thus tends to build operational framing.

***Proposition 4:*** *Transactionally oriented PSM terminology creates a barrier to cognition of the strategic opportunities of SM and external resources.*

Transactional terminology can be seen to maintain the dominant logics, which allow only an operational role for PSM.

#### Operational role

As described earlier, PSM was given a strongly operational role in all case companies. Interview observations and other data in each case company indicate that PSM is expected to have only a marginal influence on costs; for example, only operational measures employed on external resources, late involvement of purchasing in R&D decisions and selections, and localisation of purchasing. In Alpha, several interviewees employed the wording “routine negotiations”, to which SM professionals were invited when a supplier had been selected. “Routine negotiations” in this phase were not expected to question the selection of the supplier. When some interviewees emphasised the importance of purchasing’s participation, they apparently had no clear perception of the logic of the situation (nobody mentioned this kind of issue and we heard no indications about that). The practice was very similar in Beta, in which R&D engineers selected the key components for a new product and purchasing’s role was perceived as that of a bargaining negotiator with a selected supplier and “procurement is less important for economic performance than R&D”. In Gamma, PSM activities were organised as sub-tasks of operational

foremen and local middle executives, and the focus was on marginal price bargaining with familiar suppliers.

Another interesting observation was that large outsourcing projects and investments had been actively discussed by the management teams (Alpha, Beta, Gamma), but prepared without SM professionals' involvement. Outsourcing projects were also discussed as part of BU strategies in Alpha's annual strategy process. As such, these most strategic supply-related decisions were made by the top management; however, they were not perceived as PSM issues and PSM capabilities were not used. Obviously, they were framed as strategic issues, but not as PSM issues.

### Transactional framing

Herbert Simon refers to "hammers" of the decision maker, based on his/her history and experience. In the case firms, inquiry about prices, bargaining, and routine negotiations seemed to be perceived as the "hammers" of PSM (Simon 1997, pp. 298-302), Amos Tversky and Daniel Kahnemann further define this insight as framing of a problem, suggesting that the solution to a problem depends on the way the problem is framed. "Framing is controlled by the manner in which the choice problem is presented as well as by norms, habits, and expectancies of the decision maker" (Tversky & Kahnemann 1986, p. 257). PSM-related norms in the case companies, PSM-related habits (practices and processes), and management's expectancies regarding PSM would indicate that in the minds of the interviewees PSM was also framed as an operational, transactional activity. The framing of PSM as a transactional activity leads to PSM-related problems being understood and handled as transactional.

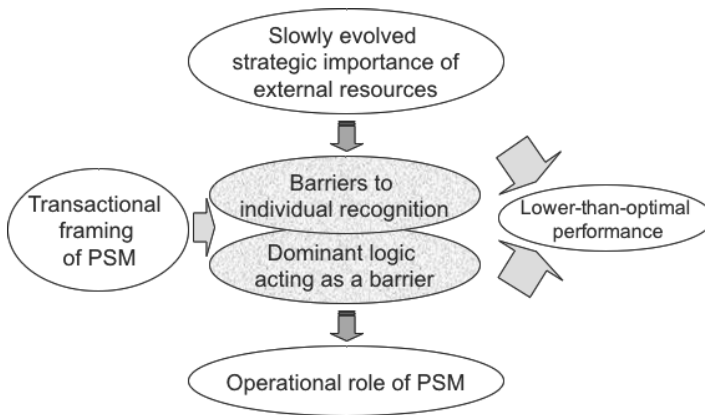
Indications of some key issues in modern SSM were sought from all the interview records. The interviewees' perceptions of possible methods of SSM were systematically checked in Alpha and Beta through direct questions, but any mention of supplier development or other means to actively influence suppliers' performance was also specifically sought. The two questions related to the methods of SM addressed this issue. An open question allowed and encouraged the interviewee to raise this kind of issue.

It was interesting to note that no interviewee mentioned anything that might be interpreted as actively influencing a supplier's performance. The segmentation of externally acquired categories (Kraljic 1983), which is the cornerstone of SSM, was not mentioned even once. Conversely, despite the interviewees clearly having close contact with some key suppliers, both the terminology employed and many comments throughout the cases emphasised passivity in the face of suppliers' performance.

An interviewee from Alpha commented that whether it is reasonable to ask for purchasing's help or to ask the secretary to buy something is an unanswered question. In individual small purchases this is a relevant question; however, I got the impression that the interviewee was talking generally, indicating his perceptions of the potential of professional purchasing activities. I interpret this as an indication of a belief that price cannot be influenced, and SM professionalism has only limited value.

**Proposition 5:** *Transactional framing and the related operational role of PSM create a barrier to cognition of the strategic opportunities offered by SM and external resources.*

The transactional framing of PSM fits well to the identified internally-oriented dominant logics. It could even be seen as a driver of both the individual cognitive filters and the internally-oriented dominant logics. If the transactionally framed PSM does not suggest anything strategic regarding external resources, the management's focus is naturally kept on internal issues.



Based on Donaldson 2001 and Adner & Helfat 2003

Figure 18. *Transactional framing of PSM acts as a barrier to individual cognition and supports the internal orientation of the dominant logics.*

### 6.3 Root causes

During the research process, the possible root causes of the observations raised increasing interest. Are there possibly some general common denominators to e.g. internal orientation, operationally oriented practices, transactional terminology, and neglected strategic value?

I regard the neglect of further opportunities after Gamma's successful first project as one of the most interesting phenomena to be identified. Remarkable savings were achieved, but they did not gain ongoing management interest. The same neglect had been apparent when I interviewed Alpha's CFO; a 50% saving was attained through an initial trial of competitive bidding for corporate auditing; however, the management did not activate any further competitive bidding processes or PSM activities concerning the firm's indirect spend. In neither of these two projects did the respective management teams apparently perceive the relatively huge savings as a sign of broader opportunities, but they interpreted them as the correction of individual flaws.

## Belief in market competition

Gamma's CEO C stated that "I did not believe there was more 'air' in the prices, as we had just gone through all the key categories a few years ago." This seems to relate to a perception of a "correct" price for every product and service, which can be reached with "correct" purchasing behaviour. Some interviewees talked about "market prices" in the same sense. Thus, the savings attained in Gamma were perceived as being merely a result of the correction of an earlier mistake, not a sign of systematic weakness in approaches and the perception was that, when this mistake was corrected, no more savings or performance improvements could be reached.

"Air in the price" only focuses on the price and neglects other total cost implications. Some interviewees employed the term "fiddling the prices", which inherently indicates tightness and very small changes. This can be explained through a strong belief in market competition as a continuously effective price mechanism. Can a subconscious belief in effective market competition be a key barrier to cognition of SM's opportunities?

Management's thinking is expected to "take it for granted that scale advantage is the most important leverage" (CEO A, Gamma). However, nobody mentioned anything concerning calculating the value of scale advantage or other uses of total cost modelling. The real scale advantages for either party are seemingly not calculated; however, scale advantages seem to be perceived as relatively small volume discounts ("routine discounts"). I posit that this scale advantage orientation is also a sign of subconscious reliance on the effectiveness of market competition.

It seems to be perceived as unthinkable that the buying party might influence a supplier's internal issues sufficiently to make the supplier improve. This finding can be explained by the perceived general impossibility of influencing another organisation, as was the general perception some decades ago ("(a firm is) an island in the sea of markets", Richardson, G.B. 1972, p. 883). If the cost-efficiency or behaviour of external suppliers cannot be influenced, it is natural for the top management to focus only on internal issues.

These observations could be seen as indications of common perceptions that the buyer can have only marginal opportunities, if any, to influence the markets or an individual supplier's pricing. A potential root cause of this perception would be a hidden belief in market competition, Adam Smith's "invisible hand of market forces" (Smith 1776). In this thinking market competition takes care of price efficiency and acts as a sufficient price mechanism.

As early as in 1936/1937 Friedrich Hayek suggested that this mechanism, the invisible hand, works only in very specific conditions (Hayek 1937), and later SM and SSM literature is built on a deeper understanding of supply markets and networks. Instead of the simplistic market mechanism, more complex factors are understood to be driving firms' and individuals' behaviour in various relationships, such as power dependency (Emerson, R.M. 1962, Tanskanen, K., Iloranta, K., Laiho, A., Kaipia, R., and Saloranta, S. 2012), social exchange (Nieminen, S. 2013), attractivity (Aminoff, A. 2015), and trust (Mayer, R.C., Davis, J.H. and Schoorman, D. 1995, Schoorman, F.D., Mayer, R.C. and Davis, J.H. 2007). To optimally manage suppliers and external resources in the prevailing complex networks, a deep

understanding of the situations and factors involved in relationships is needed, as well as a broad variety of actively used methods.

***Proposition 6:** General belief in market competition as a sufficient price mechanism hinders cognition of the differentiation potential within external resources through strategic supply management (SSM).*

Belief in market competition as a sufficient price mechanism might explain well the internally-oriented dominant logics and other observations. If market competition is expected to address the overall efficiency of external resources, the management's focus should simply be on the efficiency of internal resources.

#### **6.4 Institutionalisation**

My observations raise common beliefs and dominant logics. As suggested in Chapter 2.6, they can be framed as outcomes of general institutionalising processes, leading to similar structures and processes not only across firms, but also industries and communities.

Below I will reflect my observations on the generic institutionalising processes that tend to limit variation and the adoption of new ideas, thus also acting as potential barriers to the adoption of new approaches to SM and external resources. I refer to the breakthrough framework presented by DiMaggio and Powell: "The iron cage revisited" (1983).

##### Coercive isomorphism

One key observation in all the cases was the internally-oriented (production-oriented) reporting of PSM, as argued in Chapter 6.2. Similar reporting practices are generally used, guided by public reporting norms. International and national reporting standards form a strong factor in coercive isomorphism. The standards tend to have a self-strengthening influence on perceptions of SSM: when public reports neglect the evaluation of the external spend, companies are under no pressure to develop internal reporting practices on it, management cannot be evaluated on or appreciated for their behaviour regarding the external spend, and public industry analysts have no means to criticise or appreciate it. The external spend seems not to exist in common mental models.

The concept of coercive isomorphism sheds light on and partially explains the traditional reporting practices of the case companies and thus also their weak cognition of the size of their external spend.

##### Normative isomorphism

Paul DiMaggio and Walter Powell (1983) discuss professionalism as a form of normative isomorphism. Firms typically look for specialised university education when they search for professionals for any managerial occupation. This would suggest that most top executives have similar education-based mental models guiding

their decisions. The first and still the only professorship on PSM in Finland was founded in 1996. Before this time, courses on purchasing were focused on operational issues, e.g. logistics, economic order points, and forecasts. SSM, which discusses external resources in the modern broad sense, has only been taught over the last few years. Those educated prior to these years who are currently in top management positions cannot have received any formal education in these issues. This explains well the finding of minimal education in SSM throughout the top management teams that were interviewed. Referring to Herbert Simon's insight (1997, pp. 298-302), what is the origin of their mental models relating to PSM?

### Mimetic isomorphism

The starting point of this research was the slow development of average companies, although the leading companies had visibly identified SSM as their new source of success. Other companies were lagging behind with regard to the ideas of SSM. As such, if mimetic isomorphism was considered a strong factor, other companies rapidly followed the leaders. However, the findings indicate the presence of mimetic isomorphism, as some interviewees referred to Nokia as a future model in all the cases that were studied; however, this had not led to any activities. My findings do not provide any explanation for this phenomenon. Apparently mimetic isomorphic forces are weaker than normative and coercive forces, guiding management's behaviour only when there is no well-known way to proceed. In the case companies the normative mindsets and coercive reporting practices comprised a well-institutionalised way to proceed and the management did not perceive uncertainty, which has been described as a key driver of mimetic isomorphism. The limited number of pioneering leaders completes the explanation. When only a few companies had invested in SSM, but most others had not, a critical mass was not achieved. Now, at the time of the writing of this text, mimetic isomorphism also seems to have activated large and mid-sized Finnish firms, most of which have had various development initiatives concerning SSM.

### Summary of implications of institutionalising processes

The institutional theory suggests several mechanisms that explain the findings and propositions.

Public reporting practices constitute strong coercive forces that tend to focus management's, the media's, and the public's interest on a firm's internal resources, hiding the real share of external resources.

Public education acts as a normative force, allowing mainly operational roles for purchasing and neglecting strategic perspectives on external resource management. The task of a teacher is to crystallise all the experiences of the human community into selected mental models, preferred behaviours, and criteria of goodness. The emphasis and content of education have slowly followed the evolution of opportunities within the business environment, but it takes years before the more broadly educated young individuals reach senior management positions.

This research did not find significant traces of mimetic isomorphism as a driver for change. During the data-gathering process, SSM could be perceived as being in the early stages of public interest and mimetism acted as a barrier. Currently, interest and

discussion have arisen and perhaps mimetism also works in favour of strategic approaches to SM.

The findings can be explained well by the selected key framework of the institutional literature. There are several mechanisms within the western business community that tend to standardise SM-related mental models and reactions to and decisions on an operationally-oriented purchasing function. This could be written in the following form:

***Proposition 7:*** *Transactional framing of PSM is deeply institutionalised in the business environment, hindering cognition of the slowly evolved crucial role of external resources in prevailing business networks.*

## **6.5 Summary**

Building on careful evaluation of managerial perceptions within three case companies, I have summarised five cross-case observations on the barriers to the cognition of SSM and external resources. Through abductive reasoning I have further developed three propositions on the causal logics and root cause mechanisms of the barriers thus identified. As an overall key proposition I suggest that transactional framing of PSM is deeply institutionalised in the business environment, hindering cognition of the slowly evolved crucial role of external resources in prevailing business networks.

## 7. Discussion

This research addresses a significant unresolved problem, the slowly evolved top management cognition of strategic opportunities offered by active management of external resources and networks.

The phenomenon of interest leading to this study was limited top management cognition of the strategic opportunities within supply management and external resources. This interest was finally defined as the research question: What are the potential barriers and hindering mechanisms to top management cognition of the strategic importance and opportunities of supply management and external resources?

The relative importance of the externally purchased spend, external resources, has evolved slowly from the 80's onwards, Peter Kraljic's genial framework being an epoch ("Purchasing must become supply management", Harvard Business Review, 1983). My propositions explain why the firms have reacted so slowly to these slow, but remarkable changes in the general business environment.

This study found that external resources are typically only discussed in management teams when there are problems. Top management teams recognise neither the relative importance nor the methods to differentiate and create a competitive edge though the professional management of external resources.

The key finding of this study is the broadly institutionalised framing of purchasing as an operational/transactional issue, which seems to define the organisations' relationships to external resources.

The study identifies several factors within and across the companies which support or strengthen the institutionalised perception, and thus barrier the recognition, even as vicious circles:

- limited education in modern SSM
- limited experience of modern SSM
- inward-oriented dominant logics
- inward-oriented (production-oriented) and fragmented reporting
- transactional terminology used to describe PSM related issues
- transactional framing of PSM
- operational role of PSM

The study also suggests a root cause for these mechanisms, a belief in the "invisible hand" of market forces, i.e. blind belief in the power of market competition.

I have further developed a simplified model of the mechanisms exerting an influence between these factors, and later in this chapter apply it at the firm level.

## 7.1 Theoretical contribution

### Supply management literature

The novelty of this research lies firstly in the top management perspective on SM, and secondly in the cognitive views of supply management-related decision making. It brings a top management perspective to the supply management literature and it studies the implications of cognitive processes for individual perceptions and strategic decision making. The existing supply management literature does not offer frameworks for these issues. Even the most fresh managerial textbooks on SM maintain a functional view although emphasize the increasing strategicity of SM (e.g. Chick and Hanfield 2015). Bendoly et al (2010) pointed out that case studies on cognitive issues are rare within operations management. Barriers and behavioural hindrances to SSM seem to be especially weakly covered still today as a decennia ago (Moberg, Speh & Freese 2003).

An important part of the theoretical contribution of this paper is the literature review, which integrates several theoretical concepts across disciplines into a simple model, which helps to clarify and understand the complex dependencies between different factors affecting the perception of strategic opportunities within SM.

As discussed and argued in Chapters 1 and 2, the supply management literature suggests that

- supply management has a natural strategic role within an industrial company because of the strong influence on a firm's performance (e.g. Axelsson 2005; Chen, Paulraj & Lado 2004; Gunasekaran, Patel & McGaughey 2004; Hughes, Day & Hughes 2005; Hall 2000; Laseter 1998; Rajagopal & Bernard 1994; Giunipero, Handfield & Eltantawy 2006; Schiele 2007; Trent 2007; Iloranta & Pajunen-Muhonen 2008/2012/2015; Hoffmann 2010).
- top management understanding, support and commitment are prerequisites for the successful transformation of purchasing's role towards that strategic role, strategic supply management (Rajagopal & Bernard 1994; Hughes, Day, & Hughes 2005; Schiele 2007; Trent 2007).
- both the academic literature and practical executives tend to perceive SM as functional issue, and do not fully see SM's link to the firm's long-term performance, i.e. cognition of the strategicity of SM is somehow barriered (Hofmann 2010, Hughes et al. (2005).

There has been a research gap in the reasons why top management does not link SM to a firm's long-term performance. I have addressed this research gap and identified, explained, and interconnected several mechanisms that create barriers to top management cognition of SM's strategic opportunities and more generally the strategic role of external resources.

Linking SSM related decisions of top management to cognition literature opens broader tracks towards behavioral views to PSM and external resource management. The same irrationalities of human decision maker in any PSM related task guide the actions. Education and experience constitute the background of any human decision

in any position, heavily influenced by less or more institutionalized industry beliefs, common world views and the firm's dominant logics.

Knowledge of social and psychological factors have been understood to be useful in negotiation situations, but this work emphasizes that this understanding of human behavior should go much deeper. This view emphasizes the "soft" issues of supply relationships, like social exchange (Nieminen 2014), attractiveness (Aminoff 2015), drivers of relative power (Emerson 1962, Tanskanen et al 2012), and trust (Mayer, Davis and Schoorman 1995). It also helps in understanding of the situation dependent risks and weaknesses of different relationships with suppliers (e.g. the findings of Laseter 1998 and Villena et al 2011). Bakker et al emphasize the importance of social factors also in supply management context suggesting, that the (traditional) negotiated social order limits the potential influence of PSM professionals, because the dominant worldview, socially negotiated order, define their role as strategically less important (Bakker et al 2007).

The applicability of these views varies between externally purchased categories and segments (ref e.g. the Kraljic matrix 1983). These factors have obviously less meaning in purchases of standard goods from markets, when there is real competition. On the other hand they probably manifest in complex services, when supply markets are oligopolistic and there are complex interdependencies between buyer and supplier.

I regard the most important theoretical contribution of this study as being the insight into the overwhelming institutionalisation of the transactional framing of PSM in the business community. This institutionalised common perception is a barrier to both the identification of opportunities and the transformation processes within firms. It most probably at some level influences all the PSM related human decisions and thus also the firm's strategic performance in supply related issues.

When barriering the identification of potential opportunities, this institutionalisation also barriers the modern view to strategy development, which integrates the evolving customer needs, supply market opportunities and the internal capabilities (Iloranta et al 2015). This interplay is suggested to constitute the corner stone of the orchestration of external resources (Laiho 2015).

#### Managerial cognition literature

My contribution to academic discourses on managerial cognition is the empirical application and elaboration within the context of SSM and external resource management. The two key factors in the preliminary model for planning the research were education and experience. The implications of education and experience for individual mental models are broadly studied within the managerial cognition literature, as already discussed in Chapter 2, but they seem not to be clearly spelled out within the SM context (e.g. Simon 1945/1997, Mckenney and Keen 1974, Hambrick and Mason 1984, Kogut & Zahnder 1996).

In Chapter 2.5 I developed a theoretical model of an issue's rise to the top management's agenda, based on a review of the managerial cognition literature. Figure 20 integrates my empirical observations and propositions into the model.

The institutionalised operational framing of PSM already constructs a general filter for signals from the external environment. It also creates the basis for individual education and experience opportunities, which further strengthen the filtering effects, if the individual has not got eye-opening education or experience of SSM. Internally-oriented dominant logics create the structure for management reporting and performance measures, which consist a further strong filter. If the relative economic importance is not visible in reports, an individual executive eventually does not recognise it. If there are no SSM-related goals, an individual manager probably filters out PSM-related signals as secondary, uninteresting issues. If an individual manager does not know/recognise differentiation/deviation opportunities within SSM, she/he has no reason to take action. All the empirical observations fit the model and the propositions are nicely aligned with it. The model leaves open the connection between individual cognition of issues worthy of attention and management teams' agenda, as did this research, because the focus was on the barriers to individual cognition.

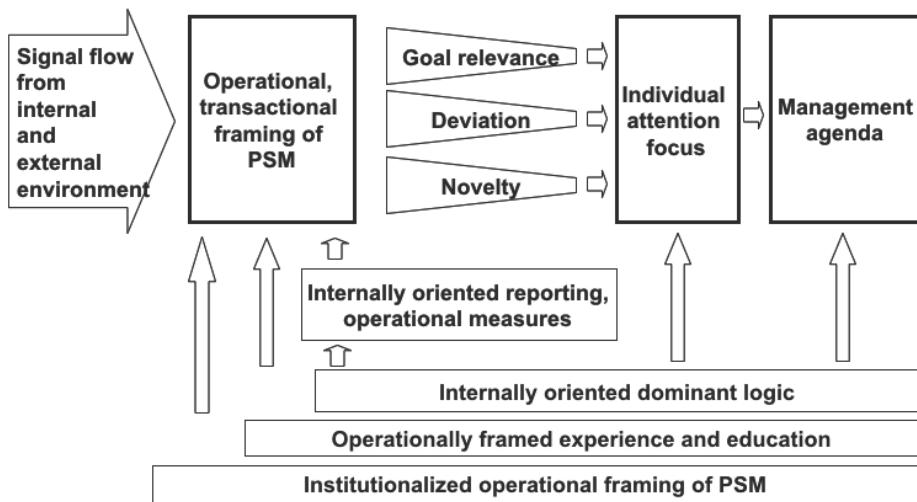


Figure 19. Detailed model of issues influencing an SSM-related signal's rise to management's attention. Empirical findings are integrated with the literature-based model (Figure 6), which was developed from Hambrick et al. 1984.

### Cognition of an extremely slow change

It is noteworthy that the model in Figures 6 and 19 does not include any elements which would raise an extremely slowly evolving change in the environment to an individual executive's attention focus. This is a highly interesting insight, because the phenomenon being studied is so slow that in an average industrial firm the normal yearly variation effectively hides the long-term trend. If the issue is not perceived as relevant from the perspective of an individual's goal, slow change does not trigger

attention through deviation from the expected or novelty. Long-lasting but slow evolutionary change in the business environment may stay unnoticed from year to year.

### Anchoring and framing

Anchoring in the traditional operative role and transactional framing of purchasing can be interpreted as being the key factors in creating barriers to the cognition of SM's strategicity. Anchoring and framing to an existing problem setting align well with Kelly's personal construct theory (Kelly 1963). The concept of framing, the influence on a decision made concerning a particular problem by the way it is described and the terminology employed (Tversky et al. 1981), is well aligned with the ideas of personal construct psychology. Individual personal constructs, as an individual's perception of the world, tend to frame any problem in terms of those constructs.

This idea gets support from my findings. When the challenge or opportunity is framed by the limits of traditional purchasing, non-traditional opportunities are not identified, investments in development not made, and results not achieved. When there is a sufficiently strong trigger, such as, in Gamma, the clear belief in strategic-level opportunities put forward by the owners, top management recognises both the size of the opportunity and the need to invest in the development of organisational capabilities.

This perspective was also supported when marketing Aalto PRO's (Aalto's lifelong learning institute) training in SM. When words such as "purchasing" or "procurement" were employed in public invitations to attend a course, the registered participants only had operational backgrounds, although the invitations were sent to CEOs. When the terminological framing suggested here was tested by deploying similar invitations with comparable contents, but utilising terminology such as "external resource management" and "strategic competitive advantage", clearly more interest among general management was aroused, and several CEOs and CFOs participated (Aalto Pro's files on seminar participants). Apparently, the strategic framing of basically the same issue had attracted top management's attention.

This stream of the literature explains the purely operational role of purchasing, also in times when external resources comprise a major share of resources and the global environment offers many opportunities of potentially strategic importance. When discussing purchasing, management traditionally frames it as the operational tasks of the purchasing department (i.e. Alpha and Beta) or local practices (i.e. Gamma) and, as a result of this framing, does not recognise the strategic opportunities or the size of the economic implications.

In traditional thinking, "firms might be envisaged as islands of planned coordination in a sea of market relations" (Richardson 1972, p. 883); that is, firms were perceived as independent entities connected only through market mechanisms. In this mental model, the firm is not perceived as being able to influence another entity's internal behaviour and efficiency, and market competition is the mechanism that is expected to drive overall cost efficiency. Both issues, discussed above, seem to be connected to the traditional production orientation: terminology (i.e. "purchasing"), purchasing-oriented operational role, internally-oriented dominant logics, production-oriented

management reporting and target setting, and the R&D organisation's dominant role. Similar practical findings outside the case companies seem, for example, to support this explanation: the operational orientation of purchasing in many companies, the emphasis on R&D, and the traditional operational management reporting and operational target setting of SM. These are typical general challenges mentioned in public seminars on SSM (e.g. Aalto EE and Aalto PRO courses and training series, e.g. "Diploma in Global Supply Management (From Purchasing towards External Resource Management)", where the majority of the participants occupy leading SM positions in companies operating globally.

### Institutionalisation

A further theoretical contribution of this paper lies in elaboration and empirical application of institutional theory in supply management context. I suggest mechanisms, which have institutionalised operational purchasing and, more generally, internally oriented dominant logics, both of which have a weak fit to the present business environment in which external resources constitute the majority of an industrial firm's resources. I build on Meyer et al's suggestion, that over time institutionalised concepts may become commonly believed myths (Meyer et al 1977) and divide institutionalisation into normative, coercive and mimetic processes obeying Paul J. DiMaggio's and Walter Powell's view (1983).

Normative education is naturally an important process in conveying the experiences of earlier generations, but the findings suggest that, in the evolving world, normative education can become a barrier to appropriate adaptation to new environmental conditions. The findings draw attention to the risks of normative education in a rapidly evolving world. This is a significant challenge to the teaching profession at all levels. How are students given skills to utilise all the learning and experience of earlier generations and, simultaneously, critical capabilities to evaluate the applicability of these skills in an evolving environment?

The findings also suggest broader discussion of the overall educational framework of a firm's top management. Where should the emphasis be? When external resources comprise such a crucial share of an average firm's cost structure, should they not play a radically bigger role in teaching programmes?

### Accounting

It is interesting to note that although the externally purchased spend is by far the case companies' largest cost factor, as in average industrial companies, it is not publicly reported as such. Economic figures would suggest strong reporting on the efficiency and effectiveness of the usage of external resources. Additionally, a random sample of public companies' annual reports reveals that any comments on the total usage of external resources in an average (Finnish) annual report were rare. Mostly, it was not discussed at all. A brief inspection of the general economic media reveals that external resources are rarely addressed in company reviews and analyses. The total amount of the external resource spend is rarely mentioned. Top management's still rare education in SM and the rarity of experience concerning modern SM can be regarded as consequences of the prevalent thinking in the present business environment. This effective grounding within the business environment makes it

understandable that some attempts to develop and reshape SM towards a more strategic approach had failed in our case companies.

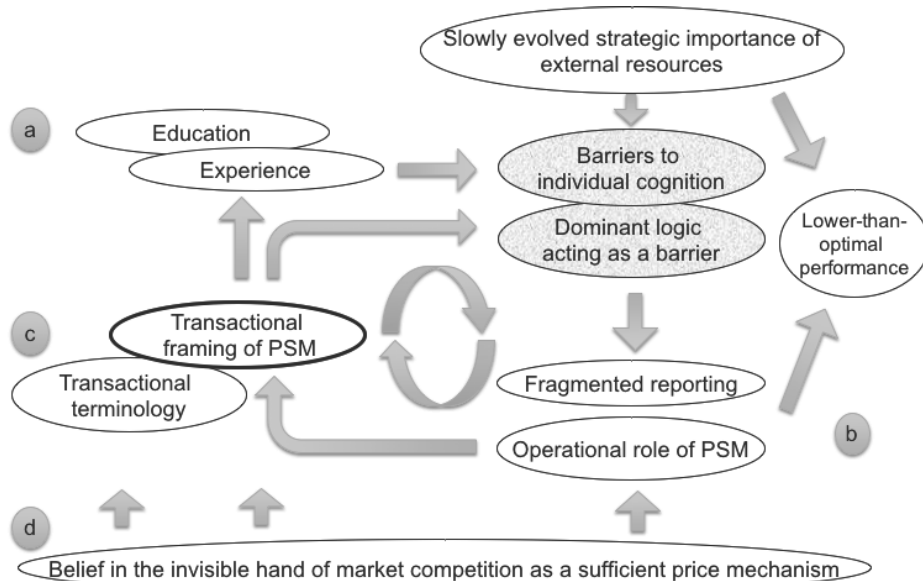
Public companies' general reporting practices remain internal production-oriented. International and national reporting standards (IFRS-based) do not oblige firms to report the use of external resources. They guide external reporting towards relevant information, and the relevance understandably depends on the perceptions, beliefs, and dominant logics of the firm, industry and business community.

Today the mental models behind these reporting and information practices still seem to be inward-oriented, primarily regarding a firm as a production unit. This means that the internal production-oriented neoclassical organisation models developed up to 100 years ago still guide public discussion of the performance of companies throughout industries today.

The findings indicate that well-institutionalised public standards can become a strong barrier to adaptation to new circumstances in an evolving business community.

## 7.2. Barrier mechanisms constitute a vicious circle

The barrier mechanisms identified here are tightly interlinked and interdependent. Through repeated trials abductive reasoning, a suggestion for a descriptive picture of causal linkages and interdependencies between different factors, was developed. A key conclusion is that different barrier factors may be interpreted to constitute a vicious circle, maintaining and strengthening the transactional framing of PSM.



*Figure 20. The barriering factors constitute a vicious circle of institutionalisation, maintaining the transactional framing and operational role of PSM.*

Explanation of Figure 20:

- a) limited or non-existent education and related experience do not open up broader views of the strategic opportunities of PSM and external resources. Education and individual experience of modern SSM would be the key drivers of cognition of its evolving strategic importance. When they are limited, general transactional framing guides the individual cognition process;
- b) the operational organisational role of PSM resulting from internally-oriented dominant logics does not question the transactional framing. This internal orientation focuses executive economic reporting on the direct spend and neglects the indirect spend, allowing its reporting to be fragmented or non-existent. The fragmentation of the reporting prevents its relative importance from becoming visible and does not question the transactional framing;
- c) transactional framing, related to transactional terminology, maintains the internally-oriented dominant logic and further the operational role of PSM. It does not offer new strategic views to widen individual experiences;
- d) belief in the invisible hand of market forces maintains all the above and thus is the root cause of the traditional transactional framing. The operational functional role in the organisation does not question the belief in the invisible hand and thus maintains it.

All these interdependent factors may constitute a vicious circle, which continuously institutionalises itself through this process, where no component would question the transactional framing.

### **7.3. The practical relevance of the findings**

In this study I suggest mechanisms which have acted as barriers to the effective utilisation of the potential offered within external resources. Resolving those mechanisms would have a radical influence on the economic performance of industrial companies.

Chapter 1.3 constructed a link between a firm's economic performance and managerial cognition. Common sense would suggest that if the management team neglects active management of the majority of the resources used, the outcome is probably not optimal. On the other hand, Chapter 1.1 of this study refers to earlier studies where professional SSM led to remarkable improvements in a firm's profitability.

The practical meaning of my observations of education and experience as the two basic factors acting as barriers is economically remarkable because of the relative importance of external resources for a firm's performance and the practically non-existent education and limited experience of the present cohorts of senior executives. This finding would suggest the needs to: a) update education and training in universities and other educational establishments, and b) activate SSM and external resource-related training and development programmes in industrial firms.

Fragmented and production-oriented reporting of the external spend seems to effectively hinder the identification of external resources' relative importance. A practical implication is the importance of regular reporting on and evaluation of all the different forms of external spending within a firm. Just replanning internal reporting systems to cover all the use of external resources in an appropriate form would quickly enhance the economic performance of the firm. Public reporting standards and norms should be developed to take this view into account. External analysts should acquire a deep understanding of external resource management.

The basic insight with broad practical contributions is the strong dependence of managerial decisions on individual experience-based perceptions, which create a basis for the selective cognition of changes and triggers in the continuously evolving business environment. The perceptions also steer and limit reactions to these triggers, decisions, and activities; that is, the “hammers” with which to address changing situations. This insight also suggests questioning the traditional composition of boards of directors, which often emphasises long experience within the same company or industry. Our earlier research had already identified and questioned this practice and suggested less homogenous compositions and the acquisition of members with different backgrounds (Eriksson and Iloranta 2002) .

Another important finding is the strong dominant logics of management teams and firms that seem to guide managerial decisions on SM and external resources even more than rational facts. Strong dominant logic can be powerful in a positive sense as it keeps the firm on a preselected course, but it can become a really significant weakness when the environment is changing. The slow evolution of the environment is especially challenging, as it may stay unnoticed without an external trigger of top management attention.

The selected criteria for the strategic utilisation of external resources (i.e. as part of the competitive strategy and of continuing top management concern) suggest some practical implications in the light of this study. To meet these criteria, external resources and their strategic opportunities and risks should play an appropriate role in the strategy process, be discussed regularly by the top management team, and span across the organisation's functional boundaries. The slowness of the evolution of the relative importance of external resources and SSM is an important factor. It would suggest that management teams should also actively look for very slow evolutionary changes in the business environment.

The findings suggest that perceptions of PSM as operational and transactional activities are deeply rooted in our business environment and create a key barrier to the strategic utilisation of opportunities regarding external resources. This perception constitutes a vicious circle that tends to strengthen itself and create a barrier to or slow down development initiatives if there is no top management cognition and resultant decisions and resource allocations. It thus explains why the change towards active utilisation of strategic supply opportunities has been so difficult in many companies.

#### 7.4. Vicious circle at the firm level

Within a company there seem to be several mechanisms that exert an influence in the same direction and strengthen each other as barriers to open cognition of SSM's strategic opportunities. These mechanisms seem to be partly conscious and partly subconscious.

An interesting common feature in all three cases was SM-related development initiatives that occurred approximately five years earlier. All of these initiatives aimed at some level of change in SM practices. In Alpha, the new CEO began centralisation of the fragmented purchasing organisation and recruitment and training of new resources. In Beta, a new production plant was built with the aim of improving the supply chain and delivery capability and developing better overall efficiency. In Gamma, a cross-organisational training exercise was run and good economic results were achieved.

However, none of these exercises led to a real breakthrough regarding cognition of SM. In Alpha, the initiative was limited to the purchasing organisation and the indirect spend was addressed only to a very limited extent. In Beta, the new plant was a success and inbound logistics developed well, although sourcing, supplier selection, and SM practices did not change. In Gamma, economic results were achieved and cross-organisational category teams formed. However, in practice, the behaviour did not change.

The observations across all three cases suggest that neither perceptions nor operational organisational roles changed in the five earlier projects. In Alpha and Beta, the R&D professionals still made most strategic selections without purchasing's participation. Gamma's local BUs made most of their supplier selections as before. Integration and cross-organisational cooperation were minimal (e.g. some trials in Gamma) and purchasing's role was still only perceived as operational.

To create a summary overview of the perceived barriers to the adoption of new SM practices, I started by analysing all the individual causal maps in the case company Gamma. and identified factors relating generally to the failure of development initiatives. These factors, which mostly related to Gamma's first project, were then grouped by similarity and put into a summary causal map. This map was further detailed by comparing it to other failed projects in the other case companies. Finally, the understanding the researcher had gained guided the selection of the most important factors and their groupings. Thus, the following list documents the main perceived reasons for the failure of the SM development projects:

- the transactional framing of PSM was clearly audible in the interviews, as discussed earlier;
- the pressure to get improvements/savings was insufficient;
- the profitability of the company was good, exceeding targets, and the markets were growing (Alpha, Beta, and Gamma);
- strategic importance and potential were not perceived, because of limited reporting, experience, knowledge, and education (Alpha, Beta, and Gamma);
- the prevailing dominant logics framed PSM into a traditional transactional role (Alpha, Beta, and Gamma);

- the operational and transactional role of PSM limited the identification of opportunities (Alpha, Beta, and Gamma);
- and thus there seemed to be no reason for investments in SM development (Alpha, Beta, and Gamma1)

Without investments, no results could be expected. Without economic improvements, no reason for changing the operational framing was perceived.

These factors seem to constitute a self-strengthening spiral, anchored in the traditional transactional framing of PSM, as shown in Figure 21.

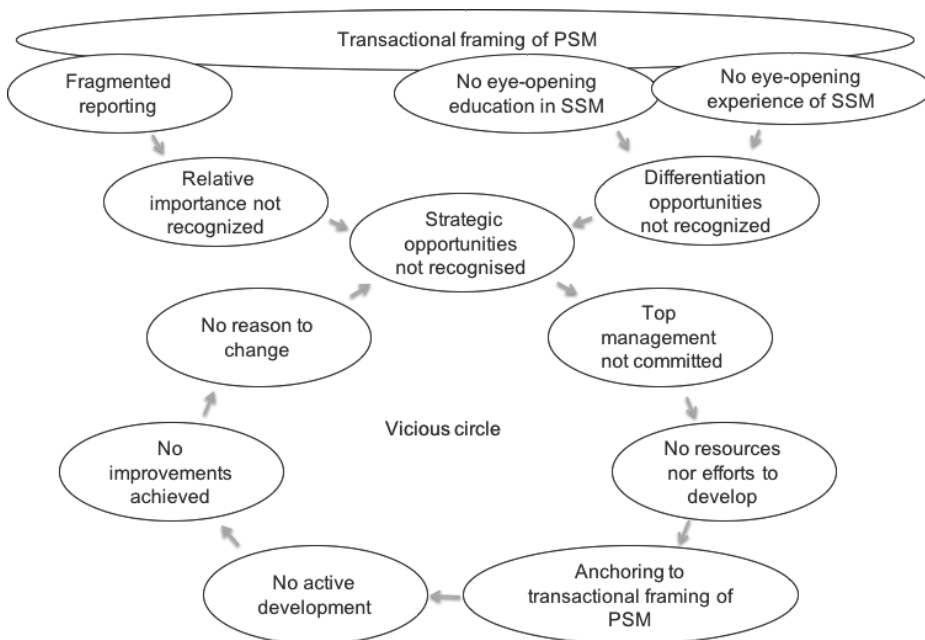


Figure 21. A vicious circle at the company level – transactional framing without triggering education or experience acts as a barrier to the cognition of strategic opportunities.

Fragmented reporting hides the relative importance of external resources and supply management. Non-existent education limits understanding of opportunities, which tends to limit the dimensions of further learning only to traditional experience-based models. Narrow experience based only on traditional beliefs limits the achievable results. Weak results limit the perceived value and, further, the interest of top management. Limited interest limits the allocation of resources and recruitment and also the interest in training and educating people. Limited resources limit the results and so on; the circle iterates downwards.

There had been several training exercises within the PSM function among the PSM professionals in Alpha, although they did not manage to arouse cognition in the top management or within other functions. The management did not participate, despite the SVP, who also had earlier experience of modern SSM. This supports the earlier propositions concerning the importance of individual experience and education for cognition. There had been no training initiatives or comparable eye-opening development projects regarding modern SM in Beta.

### **7.5 Suggestion for paradigmatic change in thinking**

During the course of this research the broader concepts of external resources and external resource management (ERM) evolved and slowly became actively used within the research team. This perspective extends the concept of external resources beyond the firm's traditional borders to e.g. external sales and delivery organisations and social networks. It definitely demands the redefinition of concepts and frameworks. The concept of a firm thus evolves from an internally-oriented "isolated island in the sea of markets", as perceived by Richardson (1972), towards an "extended enterprise" and "nexus of contracts". In this further broadening light, the traditional inward-oriented perception of a firm seems not to reflect the realities of the current business environment.

When internal activities are minor parts of a firm's value-producing networks, business models can no longer be based on operational "purchasing". The concept of external resource management represents a paradigmatic change in thinking and defining the borders of a firm. This concept has been explored and argued by Aki Laiho in his dissertation ("Orchestration of external resources", Aalto 2015) and is under further development by our research team (Tanskanen et al. 2012).

Because the radically evolved business environment offers remarkable strategic opportunities through the organisational adoption of SSM and external resource management, the cognitive barriers observed in this research do have remarkable implications for economic performance.

### **7.6. Suggestions for further research**

All the observations and propositions of this research should be tested with a broader set of samples with larger variations between firms. Comparison of the successful and less successful development initiatives within these case companies gives some indications on the key factors and drivers of top management cognition of strategic opportunities within external resource management. The sample is too limited for broadly general conclusions to be made, but it offers a good starting point for further research. Not only top management cognition, but also the mechanisms through which the aroused cognition drives organisational change would be interesting to study within a broader sample. Cross-organisational training seems to be an important driver of change, but how to address it best so as to avoid less successful outcomes is really worth studying.

The final outcome of this broader research could be a powerful toolset for companies trying to maximise the value of their supply networks and external resources.

### **7.7. Alternative explanations of the findings**

Alternative explanations for the observations could be searched for from two directions. First, the fluctuations in the economic situation may explain at least a part of the findings. Second, the complex forms of general resistance to change at all organisational levels may offer an array of different explanations which could reduce the relative importance of the observations of this work.

### **7.8. Summary**

This paper suggests that the general management orientation within industrial firms is based on mental models of a firm that purchases external resources mainly for production needs. These historical mental models are implanted into the minds of new generations in the form of education, form the basis of general functional organisational models and concepts of strategy, and influence discussions in the economic media. Through these various forms, the mental models' implications tend to strengthen each other and constitute a vicious circle that effectively creates a barrier to cognition of the strategic opportunities offered by SM and external resources.

In this paper, I focus on supply management. However, the challenge is probably broader, covering all areas of organisations. This research especially emphasises the role of top management team members' perceptions in the adaptation of the strategy and use of resources in the evolving business environment.

## 8. Validity and limitations

The research involved three case companies in which five change initiatives towards more strategic supply management (SSM) were identified as having occurred before this research process. Each of these initiatives was different in scope, content, and nature, although all aimed at better utilisation of external suppliers in some way. All of these exercises had brought some results and practical changes; however, only one led to top management cognition of the strategicity of SM, achieving really significant results and sustaining changes in organisational behaviour.

To maximise credibility I have fulfilled the criteria for theory-building research within operations management (OM) and supply chain management (SCM) offered by Choi and Wacker (2006):

- at the beginning, a clear boundary was delineated around an important SM issue: barriers to top management cognition of strategic supply management (SSM);
- a construct of criteria for SSM was developed, building on existing theoretical perspectives;
- the basic ideas of the management cognition literature and personal construct psychology (PCP) were integrated into a simple theoretical lens for preliminary hypotheses on research planning;
- the research methodology was carefully crafted to correspond with the nature of the issue to be studied and the theoretical lens selected, applying PCP-based causal mapping as a key analytical tool and adapting to the guidelines of grounded theory approach put forward by Corbin and Strauss (2008);
- multiple theoretical perspectives, consisting of the literature on management cognition, institutional theory, and contingency theory, were integrated to position the propositions in the broader framework of top management;
- several clear propositions were developed on the basis of cross-case and within-case analysis;
- an underlying dominant paradigm, the broadly institutionalised operational concept of purchasing as a root cause of cognition of opportunities within SSM and external resources, was identified.

The validity of the findings and observations was tested through presenting and discussing the early results within the case companies, in Alpha with the CEO and purchasing executive separately, in Beta with all the top management team and more deeply with the VPSCM, and in Gamma with the CPO.

Each case company was also followed subsequently to the research process. In Alpha and Beta, the interviews initiated growing top management interest in external resources and led to developmental initiatives. In Alpha, an executive responsible for the indirect spend was appointed and a cross-organisational training programme within the R&D professionals was implemented. In Beta, all the purchasing, supply management (SM), and R&D professionals were invited together to a cross-organisational training programme on modern SM. However, no more top management interviews were conducted, although discussions during these training

seminars were employed both as sources of ideas and new findings and places to test earlier findings.

To address broader applicability and generalisability, newly emerging ideas and insights were repeatedly tested by presenting and discussing them during SSM training programmes at Aalto PRO and Aalto Executive Education and also during internal training programmes within industrial companies. The audiences comprised SSM professionals from novices to CPO level and production, R&D, and project management. Additionally, some sales and marketing executives, CFOs, business controllers, general executives, and managing directors participated, especially in “External resource management” and internal company programmes. These experiences served as an opportunity to clarify the researcher’s emerging thoughts and interconnections between findings. The discussions served as tests of the findings’ generalisability and also ignited the idea of searching for deeper root causes, the underlying logics behind various findings. These discussions did not raise any conflicting issues or views which did not fit the observations and propositions suggested in this study.

### Limitations

In the social and managerial sciences, it is often a challenge to minimise the influence of the research process on the results. The research process and also the researcher tend to influence the objects under study. Selecting the sample, setting the questions, and planning the survey media or the interview process are examples of factors that are born from the perceptions, ideas, and experiences of the researcher, and all potentially influence the results, even the object to be measured. A researcher’s individual experience unavoidably causes some amount of bias in the formation of questions or in the way the research, goals, and questions are presented.

The used research method contains a hidden source of limitation of validity. The interpretation process of interviews and other findings can be seen as sensemaking, trying to fit new pieces of information to the continuously emerging framework. As discussed earlier, a natural tendency of human brain is to identify only those signals, which support and fit to the expected framework, and neglect the rest, leave potentially conflicting ones unnoticed. (ref chapter 2.1). The sensemaking process in the brain of the researcher leads easily to early anchoring on the first ideas and insufficient adjustment, although new pieces of data would allow or support alternative explanations.

To improve the repeatability and provable validity of the research, the research methodology literature recommends mitigation and good management of the influence of personal experiences. As mentioned with regard to the case selections, I had broad individual contacts as trainer and coach of SM development within Alpha and Gamma before the study, but not that kind of relationship during the research. This participant perspective naturally opened insights that would have been difficult to obtain as a visiting researcher and enabled a deeper understanding of the organisation and behaviour. This kind of bias was minimised in Alpha by the research team checking the questionnaire, giving the interviewees a written summary of the research, having two persons from our research team conduct the interviews, and by triangulating the interview notes. In Beta and Gamma, the interviews were audio tape-recorded and another analyst drew the causal maps and made the first

interpretations, partially in parallel with me. Throughout this work, I have systematically endeavoured to rely only on the interviews and avoid bringing my own experiences to openly influence the interpretations. However, the interpretations unavoidably reflect my personal experience-based constructs to some extent.

### Terminology

The vagueness of the generally used terminology within PSM is a potential limitation of this work. The terms employed were repeatedly explained during the interviews and the interviewers endeavoured to open the interviewees' thinking to broader perceptions of the external spend, or purchasing and supply management (PSM). The "research plan in a nutshell" that was delivered to the interviewees also employed the term "purchasing" in the title. This might have directed the interviewees' thoughts to the traditional concepts of operational purchasing, although, during the interviews, the interviewers endeavoured to broaden the concept to cover the management of all the external spend. The interviews in Alpha were originally booked by the secretary of the purchasing department and, in Beta, through the VP Supply Chain Management (SCM). This might also have implicitly associated the interview with the perceived tasks and role of the purchasing department, thus limiting wider insights.

### Addressing the challenges of causal mapping

Prof. Michael Manning (Interactive course on grounded theory, HUT 2011) questioned the intended reliance only on causal maps in this kind of research setting, as they can limit the scope of findings to issues that are most consciously perceived as having causal relationships. Most probably, the more conscious perceptions would be expressed verbally while less conscious perceptions, most probably those that have never been expressed in words, can remain hidden. Thus, the innovativeness and novelty of the findings might suffer. To evaluate and mitigate this risk, I endeavoured to analyse five selected interviews carefully employing the Corbin-Strauss methodology, even testing word-, sentence-, and chapter-level coding separately. The findings did not add any new insights or bring the earlier ones into question.

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**Enclosures**

Encl 1. Questionnaire Alpha and Beta

Encl 2. Questionnaire Gamma

Enclosure 1.

Questionnaire: Drivers, enablers, and obstacles of the evolution of procurement's strategic role

A broad view of supply management

Interviewee's background in brief

Confidentiality

Part of a broader research project

Semistructured interview, open questions

No personal feedback/summary

Opportunity to check correctness

Short summary report (sources not identifiable)

Your personal background in relation to procurement and supply management?

Your present personal activities related to procurement and supply management?

Describe briefly your view of the evolution of procurement and supply management in your company. (try to cover as long a time span as possible; if no personal role in management, then own interpretations and understanding of the earlier situations and activities)

Describe the reasons and triggers for changes

What are the drivers, obstacles and challenges on this evolutionary path?

Your personal views on procurement and supply management's role in the future?

Definition/scope of procurement

Procurement in the company's management team?

Procurement and supply markets in the company's strategy process?

Trade-offs between procurement development and other investments/recruitments

Procurement's strategic potential?

The relative importance of procurement from the overall profitability point of view

The opportunities procurement offers to create a sustainable competitive edge, to help in differentiating oneself from the competition

Procurement's key means and tools to do the above?

Procurement's key means to reduce costs?

Enclosure 2.

How opportunities offered to a company by purchasing are understood

Kari Iloranta, Aalto University, formerly Helsinki University of Technology, SSOC research group 010609

This interview is confidential and will be employed solely for research purposes. The identity of the interviewees will not be disclosed. Individual statements will only be employed to achieve an overall understanding. Details identifying the company and the interviewees will only be shown to the professors evaluating the study to authenticate its correctness.

What has happened in your company with regard to purchasing over approximately the past five years?

What has changed?

How are the changes manifested?

What are the effects of the changes?

How do you expect these changes to affect the future?

How do you anticipate purchasing operations might change in the future?

How do you expect the changes to affect the operations of the company in a broader sense?

How have people's perspectives on the purchasing operations and opportunities in supplier markets changed?

How has your personal perspective on the purchasing operations and opportunities in the supplier market changed?

How did you previously perceive the purchasing operations and their role, and what is your perception now?

What issues have affected your opinions?

What individual issues have acted as wake-up calls? How have they affected you?

Why do you think such changes were not implemented earlier?

Why do you think that investment in purchasing operations was not made earlier?

What slowed or hindered the changes? Do you recognise any possible factors?

Why is there unused potential in the supplier market? How is it manifested?





This research addresses a significant unresolved problem, the slowly evolved top management cognition of the strategic opportunities of supply management. As theoretical lenses I utilise the concepts of bounded rationality, managerial cognition and institutionalisation. I will build on the idea that the barriers to cognition of the increased importance of external resources are barriers to the optimal economic performance of the firm.

I argue, that general managerial thinking is based on historical mental models of a production firm, although the majority of the resources utilised by a firm are external. I suggest a need for paradigmatic change in general thinking, from operational purchasing towards external resource management. This change would have remarkable implications for reporting practices, strategy processes, management teams' agendas, organisation, education. It would also bring new insights to economic media in evaluating a firm's performance.

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