

How purchasing practitioners use the Kraljic matrix

A relative comparative case study with four big Swedish industrial manufacturing companies

Many manufacturing companies spend more than half of their sales turnover on purchased parts and services. A number of articles have been written and it has increased the interest and enhanced the understanding of how purchasing improvements can contribute to a company's competitive advantage. The major breakthrough in this area was the Kraljic (1983) comprehensive portfolio approach. No major academic breakthrough has really replaced the model, why it is still seen as relevant. Though there are some aspects of the Kraljic matrix that have been more questioned than others. This concerns for example measurement, lack of guidelines for movements in the matrix and that the supplier side is disregarded. With an explanatory approach we highlight current practices of the Kraljic purchasing portfolio model and how it is used to manage strategic change for critical items. We are using four different but significant purchasing companies – Astra Zeneca, Scania, Skanska and Volvo Penta.

We analyse the different case companies based on a relative analysis between the different categories we have chosen to examine. This means that if all categories are graded as balanced (no relative difference), it does not signify how much on an absolute scale the categories are being used.

The study reveals a lack of awareness of Kraljic's working method presented in his article. The four case companies focus on the matrix without explicitly mentioning the general ideas related to the four phases of Kraljic's working method. With the help of the findings in this study we present a normative working method to deal with earlier critique against the matrix.

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Appendix

1 Introduction

1.1 Background

Many manufacturing companies spend more than half of their sales turnover on purchased parts and services. Reduced purchasing expenditures can therefore result in substantial improvements of the profit margin. In the last decades researchers have seen the potential of how purchasing improvements can contribute to a company's competitive advantage. A number of articles have been written and industrial- and trading companies have been in the center of interest, because of the high purchasing share of cost of goods sold (approximately 60 percent of the production value for industrial companies).¹ The trend of shift from an industrial society to a more service based society has however enhanced the interest of improved purchasing in service-based companies.² With the increased interest and the enhanced understanding of the purchasing function, the process of responsibility has developed from buying, via procurement to supply management. This development has meant an increased importance of the purchasing activities within the purchasing organization.³

When considering the development in the area of purchasing management, much has happened since Porter (1985) introduced his Value Chain, pictured procurement only as a supportive activity to a firm's primary activities. Today purchasing is not considered as a supportive function, it is seen as a strategic- and an important element of a company's organizational structure.⁴ When purchasing- and supply management is seen as a strategic unit it is important to connect the purchasing strategy to the overall mission of the firm.⁵ This makes it important to know how the vision of the firm is connected to the corporate strategy, the purchasing strategy and the operative purchasing activities. In addition to this it is of fundamental importance to understand how strategic change is performed within the purchasing department and how organizational and environmental factors affects decisions regarding strategic change.⁶ This due to the fact that global competition is fierce and the speed of execution in order to increase revenue, reduce operating costs and invest in product development is crucial in order to be successful on the market.⁷ An implication of this is that the purchasing department needs to be synchronized with the rest of the functions of the company in order to be well-informed regarding user preferences and new projects that demand new purchasing routines. This, among other things, means creation of cross-functional buying teams and it sheds light on the importance of a well-functional organizational design.⁸ With the intention of adopting a

¹ Van Weele, A, (2005), Purchasing and Supply Chain Management, 4th edition, p. 16, Thomson learning 2005

² Axelsson, B, Wynstra, F., (2002), Buying Business Services, p. 3, 21, John Wiley & Sons Ltd

³ Axelsson, B, Rozemeijer, F., Wynstra, F., (2005), Developing Sourcing Capabilities, p. 3, John Wiley & Sons

⁴ Van Weele, A, (2005), Purchasing and Supply Chain Management, 4th edition, p 23, Thomson learning 2005

⁵ Ibid, p. 167

⁶ Agndal, H., Axelsson, B., Melin, L., (2005), Developing Sourcing Capabilities, p. 34, John Wiley & Sons

⁷ Andersson, M., (2000), Strategic change, Fast cycle organization development, p. 3, South-Western College Publishing

⁸ Axelsson, B, Rozemeijer, F., Wynstra, F., (2005), Developing Sourcing Capabilities, p. 90-95, John Wiley & Sons

global scope towards sourcing (purchasing- and supply management)⁹ issues and deal with the increased globalization, large manufacturing companies have set up international purchasing offices in different regions of the world. This has improved joint purchasing actions especially for companies with several manufacturing plants scattered in different regions of the world. With this in mind it is interesting to see how big multinational manufacturing companies cope with professional purchasing and how the purchasing function is used to handle fierce competition. An extension from this is that competitors increasingly utilize ways to differentiate, in order to segment the various supply categories. This means designing adapted strategies for dealing with various categories. One dominant approach of coping with segmentation as a basis for designing commodity strategies is the use of a purchasing portfolio approach.

The major breakthrough in this area was the Kraljic (1983) comprehensive portfolio approach. He categorized products in a 2x2 matrix, which enabled guidelines for designing commodity strategies and managing the supplier relationships in a differentiated way. This model has a specific focus on commodities categorized as strategically important to a firm and the general idea is to minimize supply risk and make the most of buying power. It is still, after 25 years, the dominant approach among purchasing practitioners.¹⁰ Peter Kraljic, director in the Düsseldorf office of McKinsey & Company, Inc (when the article was published 1983) stress in his article that purchasing as a business function needs to change and adapt to worldwide environmental and economic changes. Purchasing managers, despite numerous economic and political disruptions to their supply of material, continue to negotiate with their established networks of suppliers. Kraljic offers a model for the top management to recognize the extent of its own supply weakness and treat it with a comprehensive strategy to manage supply. The article focuses on manufacturing companies.¹¹ Commodity strategies can further be placed in a certain context of structure, according the typology by Monczka (1991). The first step is to decide whether a commodity should be manufactured inside or outside a company. If a commodity is outsourced, strategies are developed for these commodities. Furthermore, the company decides which suppliers to call in and how the relations should be handled to obtain maximum efficiency. Finally a total cost perspective is used throughout the entire supply chain in order to realize cost savings.¹²

1.2 Problem discussion

The increased role of sourcing requires new skills of the purchasing organization. It is not only about negotiating skills, knowledge about the supplier market and practical insight in internal purchasing

⁹ See appendix I for an explanation of the term sourcing

¹⁰ Gelderman, C., Van Weele, A. (2002), Strategic Direction through Purchasing Portfolio Management, p 30, The Journal of Supply Chain Management

¹¹ Kraljic, P. (1983), Purchasing must become supply management, p 109, Harvard Business review

¹² Van Weele, A. (2005), Purchasing and Supply Chain Management, 4th edition, Monczka (1991), p 147-148, Thomson learning 2005

routines, it is also about cross-cultural knowledge, language proficiency, knowledge of international finance, international logistics, capabilities in information technology and telecommunication and establishment of relationships with suppliers and so forth.¹³ In addition to this, understanding the performance of strategic change improves the possibilities for the purchasing department to adapt to the demands of the company. This complexity should also be reflected in the models used in purchasing- and supply management and the models need to consider the dynamics of a certain business context, in order not to be too static and generic. This also concern models aimed for designing commodity strategies.

As mentioned in the earlier section, the seminal paper of Kraljic (1983) for designing commodity strategies, was seen as the major breakthrough in purchasing- and supply management. A result of the Kraljic portfolio model is that many researchers have tried to advance the model in order to make it better. No major academic breakthrough has really replaced the model, why it is still seen as relevant.¹⁴ Though there are some aspects of the Kraljic matrix that have been more questioned than others. In general, decisions based on portfolio models are proven to be sensitive to the choice of dimensions, factors and weights. Another aspect is that the supplier side of the buyer-seller relationship is a disregarded element. This means that possible strategies and reactions of suppliers are not considered in the Kraljic matrix and recommendations regarding how to handle the suppliers, are more or less only based on differences in power between the buyer and the supplier. Furthermore, the model does not provide guidelines for moving commodities and/or suppliers within the matrix, i.e., decisions regarding strategic change. With the critique against Kraljic in mind, the matrix itself can be seen as rather generic by nature.¹⁵ How then, do companies that use the Kraljic matrix, deal with the matrix inability of handling the dynamics of a specific business context? Because of the lack of empirical research providing insights into these problems there are no clear answers to this question.¹⁶

1.3 Purpose

The purpose is to examine how purchasing practitioners in a specific business context use Kraljic's purchasing portfolio model and especially how it is used to perform strategic change for important categories.

1.4 Delimitations

The thesis is delimited to big Swedish industrial manufacturing companies. Our belief is that companies

¹³ Schary, P, Skjott-Larsen, T. (2001), *Managing the supply chain*, p. 180-191, Copenhagen business school press

¹⁴ Caniels, M., Gelderman, C., (2005), *Purchasing strategies in the Kraljic Matrix – A power and dependence perspective*, p. 142, *Journal of purchasing and supply management*

¹⁵ Gelderman, C., Van Weele, A., (2003), *Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model*, p. 207 – 209, *Journal of Purchasing and Supply Management*

¹⁶ Gelderman, C., Van Weele, A. (2002), *Strategic Direction through Purchasing Portfolio Management*, p. 31, *The Journal of Supply Chain Management*

as such have developed their purchasing organization and tried to adapt it to the specific conditions prevailing in the industry. Furthermore, the thesis will investigate the companies in the study from a corporate level point of view. This is the level in the organization where assumedly the most knowledge about strategic issues is wanted and where the authority to release- and choose what information can be conveyed. Most problems connected to purchasing and supply management are also related to the top management rather than being related to the purchasing area itself.¹⁷ Another delimitation is to look at products categorized in terms of the Kraljic matrix as strategic. Furthermore, the perspective of the buyer will be highlighted, which limits the possibilities to generate conclusions from the perspective of the supplier, because of the fact that the buyer supplier relationship is generically dyadic.¹⁸

Concerning the different purchasing and supply activities we will focus more at the technical and the commercial dimension of the purchasing function and less at the logistical and the administrative dimension. The technical dimension concerns the functionality, specifications and quality of the purchased products; the commercial dimension is related to managing the relationships with the suppliers and the contractual conditions, which must be negotiated and arranged.¹⁹ The thesis focuses on Business-to-Business (B-2-B) transactions.

1.5 Contributions

From the previous sections above it became evident that there are a number of unanswered questions regarding how the Kraljic matrix is used among professional purchasing practitioners. Therefore we think that a broader approach is needed to look into the ways in which the matrix (or variants of it) is actually used by a selection of companies. Our aim is more specifically to contribute to the following parts:

- An increased understanding how the Kraljic matrix and the working method presented in Kraljic's article is used
- An increased understanding how the Kraljic matrix is used to perform strategic change especially for strategically important categories
- An increased understanding how the companies in the study relate to the power-dependence perspective between the buyer and the supplier
- An increased understanding how a certain business context in an industry affects the use of the Kraljic matrix.

¹⁷ Van Weele, A, (2005), Purchasing and Supply Chain Management, 4th edition, p. 90, Thomson learning 2005

¹⁸ Caniels, M., Gelderman, C., (2005), Purchasing strategies in the Kraljic matrix – A power and dependence perspective, p. 154, Journal of purchasing and supply management

¹⁹ Van Weele, A, (2005), Purchasing and Supply Chain Management, 4th edition, p. 35-36, Thomson learning 2005

1.6 Disposition

In the first part of the thesis we have introduced the chosen problem area as well as the purpose, the delimitations and our intended contributions. To make it easier for the reader we have in appendix I a list of definitions of the most common terminology for the chosen problem area. In the second part, the theoretical framework will be described followed in the third section by the chosen methodology. The fourth section describes the empirical material ended with a within case analysis, which is followed in the fifth section by a between case analysis of the four chosen case companies. Finally there will be a conclusion- and a discussion section regarding the results and some remarks concerning future research.

2 Theoretical framework

In this section we present the theories used for this thesis and it involves three sub-sections with the Kraljic matrix and his article as the first one, critique and contributions from other authors as the second one and a typology of strategic change in order to handle strategic change as the third one.

2.1 Purchasing portfolio analysis

Portfolio models have basically been used in strategic decision making to support resource allocation decisions, by identifying which groups of products, suppliers, or relationships that require greater attention than others. It is thereby also seen as a useful management tool.²⁰ From the purchasing perspective purchasing portfolio models are needed to support decisions regarding different kinds of supplier relationships.²¹

2.1.1 The Kraljic matrix

The article by Kraljic highlights purchasing as an important managerial area with an enormous impact on profit. Because of the article's message that the purchasing area was an important management issue, the implicit effect was the need of better models used in purchasing. Another important reason for the success of the model was the different clearly distinguished purchasing situations and the logical recommendations how to act in these situations.²² The matrix classifies the stages of purchasing sophistication within companies and identifies four stages: purchasing management; materials management; sourcing management; and supply management. Kraljic argued that supply management is critical when the supply market is complex and the importance of purchasing is high.²³

²⁰ Ellram, O., Olsen, L., (1997), A portfolio Approach to Supplier Relationships, p. 103, Industrial Marketing Management

²¹ Schary, P, Skjott-Larsen, T. (2001), Managing the supply chain, p. 193, Copenhagen business school press

²² Dubois, A., Pedersen, A-C., (2002) Why relationships do not fit into purchasing portfolio models – a comparison between the portfolio and industrial network approaches, p. 35, European Journal of Purchasing and supply management

²³ Caniels, M., Gelderman, C., (2005), Purchasing strategies in the Kraljic matrix – A power and dependence perspective, p. 142, Journal of purchasing and supply management

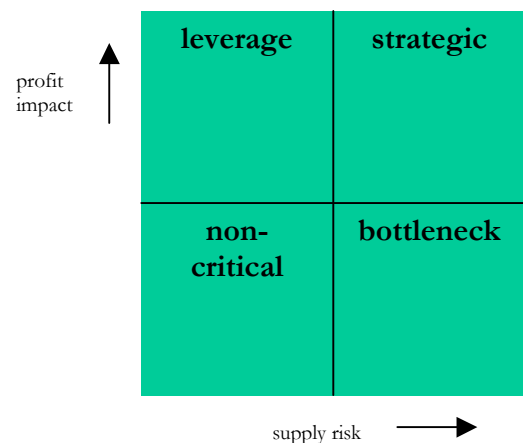
Companies must act in its own advantage and this changes the perspective from purchasing (an operating function) to supply management (a strategic one). The author continues that supply management becomes relevant when critical items are procured throughout complex situations. Supply management becomes even more important if the uncertainty in the buyer-supplier relationship increases.²⁴ Kraljic means that two factors are important for a supply strategy. The first factor concerns the strategic importance of the purchasing in terms of the value added by the product line, the percentage of raw materials of the total costs and the impact on profitability and so forth (profit impact). The second factor concerns the complexity of the supply market measured by supply scarcity, pace of technology and/or materials substitution, entry barriers, logistics cost and/or complexity, and monopoly and/or oligopoly conditions (supply risk).

An understanding of these two dimensions, profit impact and supply risk, improves the understanding of the top management and the senior purchasing executives and can lead to appropriate supply strategies. This can help companies improve the power balance with their suppliers and thereby exploit its buying power towards important suppliers. This approach can also reduce the risk (aspects as the contractual coverage, regional spread of supply sources and availability of scarce materials contributes to the risk profile of the company) the company faces. Kraljic stressed the importance that companies answer the following questions: *Is the company making use of opportunities for concerted action among different divisions or subsidiaries? Can the company avoid anticipated bottlenecks and interruptions? How much risk is acceptable? What make-or-buy buy policies will give the best balance between cost and flexibility? To what extent might cooperation with suppliers or even competitors strengthen long-term supply relationships or capitalize on shared resources.*²⁵

2.1.1.1 Classification of products

As can be seen from figure 1, the matrix classifies products as strategic, bottleneck, leverage and non-critical. The dimensions used for the classification are profit impact and supply risk. In the article where Kraljic presented the matrix, a working method with four phases should be followed – classification, plotting bargain power between the buyer and the different suppliers, strategic positioning of products identified in the classification phase and finally setting up long-term action plans. Classification of a company's different commodities, based on the dimensions

Figure 1, The Kraljic matrix



Source: Kraljic, P. (1983), Purchasing must become supply management, Harvard Business review

²⁴ Kraljic, P. (1983), Purchasing must become supply management, p. 110, Harvard Business review

²⁵ Kraljic, P. (1983), Purchasing must become supply management, p. 110-113, Harvard Business review

profit impact and *supply risk*, is the first phase in Kraljic's working method. The classification in the four categories requires a distinctive approach and the complexity of the supply market (supply risk) is in proportion to the strategic implications. In the strategic quadrant analytic techniques are needed to support supply decisions. Kraljic gives examples of such techniques as market analysis, risk analysis, computer simulation and optimisation models, price forecasting and other microeconomic analyses. Specific market analyses and decision models are needed for bottleneck products and vendor and value analysis, price forecasting models and decision models may be important for leverage items. Non-critical items simplified market-analyses; inventory optimisation and clear decision policies are needed. The author also stress that supply and demand patterns can shift the category for a material. He therefore points out the importance that any portfolio classification calls for regular updating.²⁶

2.1.1.2 The power dependence between the buyer and the supplier

The second phase in Kraljic's framework, after the classification of the product categories, deals with market analysis by plotting the bargaining power of the suppliers against its own strength as a buyer. This concerns everything from quality and quantity aspects to the relative strength of existing suppliers. Important factors during this phase are the check of supplier's capacity utilization, supplier's break-even stability, uniqueness of supplier's product, past variations in capacity utilization of main production units and the potential costs of non-delivery and inadequate quality. Taken together, Kraljic stress the importance of knowing both the supplier strength and company strength in order to do a good market analysis. The evaluation criteria will also differ for different industries.²⁷

2.1.1.3 Strategic positioning of the products identified in the classification phase

The third phase concerns strategic positioning of the materials/products identified in phase one. This makes it possible spot opportunities and vulnerabilities in the supply markets and it also makes it possible to develop counterstrategies. Three basic risks categories are possible in the strategic quadrant depending on where in the matrix a product category is positioned: exploit, balance and diversify. As appendix II shows, different actions are needed for volume, price, contractual coverage, new suppliers, inventories, own production, substitution, value engineering and logistics. The normal situation is that companies will have different roles when different items and suppliers are regarded. The company will have more flexibility in negotiations if the company is stronger than its supplier. The exploit strategy is used when the buyer plays a dominant role and the supplier's strength is medium or low; there should however be a balance in order not to jeopardize the relationship with the supplier. With an equal power situation a balanced approach are used and when the supplier dominate a diversified approach is used. This can also

²⁶ Kraljic, P. (1983), Purchasing must become supply management, p. 112, Harvard Business review

²⁷ Kraljic, P. (1983), Purchasing must become supply management, p. 113, Harvard Business review

mean that the buyer should try to find material substitutes or new suppliers. This can lead to inducements as longer contracts and higher prices. This stage is more related to the prevailing conditions the purchasing department faces.

2.1.1.4 Long-term actions plans and strategies

The fourth face concerns setting up actions plans for the long term and opens up for changing the prevailing conditions in phase three above. The previous phases have dealt with volume, price, supplier selection, material substitution, inventory policy and so forth. The fourth phase makes it possible to improve the general sourcing strategy. This can mean securing long-term supply and taking actions depending on the risks the company faces. Options with clear objectives, steps, responsibilities and different measurements need to be clear for the top management. The fourth phase should lead to strategies for critical purchasing materials both considering time and what actions that need to be taken.²⁸

Kraljic also discusses in his article the importance that the purchasing department reflects the overall corporate set-up. This concerns for example if the purchasing department should be centralized or decentralized. He also points out the problem of the purchasing department not being informed when new actions are taken and that the information period is too short. The purchasing department needs information at least three to six months before the start-up of a new project, in order to negotiate prices, rescheduling supply quantities and so forth. Tailor made systems are probably also needed for complex companies with numerous products and multiple plants. This can include forecast systems, EDP-supported planning, integration of purchasing systems with other corporate systems, purchasing analyses approaches such as commodity analysis, value analysis and improved systems support, both in order to work less with administrative tasks but also in order to be more efficient.

2.1.2 Alternative purchasing portfolio approaches to purchasing

The purchasing portfolio models that are used for comparison and as a critique to the Kraljic matrix, are gathered foremost from the literature review by Dubois and Pedersen (2002), regarding different and prominent purchasing portfolio models. They are summarised in appendix III. Improvements of the Kraljic matrix has according to Dubois and Pedersen (2001) mainly concerned (1) *the purchasing behaviour in relation to single materials or components and supply and purchasing situations* (Kornelius and Van Stekelenborg, 1994; Olsen and Ellram, 1997) and further (2) *the classification of buyer-supplier relationships* (Bensaou, 1999; Gelderman and Van Weele, 2000). We have added some articles, which in our opinion contributes and is in line with the purpose of this master thesis. These are foremost articles by Gelderman and Van Weele (2002), (2003) and Caniels and Gelderman (2005).

²⁸ Kraljic, P. (1983), Purchasing must become supply management, p. 115, Harvard Business review

2.1.2.1 Critique against the Kraljic matrix and portfolio models in general

2.1.2.1.1 The purchasing behaviour in relation to single materials or components and supply and purchasing situations

Concerning the authors in the literature review by Dubois and Pedersen (2002), Kornelius and Van Stekelenborg (1994) mean that the purchasing- and supply literature only recognises ideal types of relationships between buyer and supplier. Descriptions of the buyer- supplier relationship is not linked to a specific situation but are instead based on differences on just one contingency (e.g. the power balance and so forth), which makes it difficult answering the question: when to do what. It is about an understanding of what purchasing principles to apply in what supply situation. The authors see this as an imperfection in the existing literature, that only describes the control measures without saying anything about the situational characteristics. This also concerns Kraljic, because of his focus on the power-dependence between the buyer and the supplier as a contingency and the fact that control measures cannot be defined at random since they depend on the situational characteristics. In addition to this the time span must be considered.²⁹

Ellram and Olsen (1997) criticises portfolio models on a general basis. Among other thing they stress the importance of considering the complexity of the dimensions used to categorize the elements in the portfolio. If the dimensions are too simple important variables can be overlooked. The process of categorizing is also more important than the classification itself, because during the categorisation process, the decision-makers must agree on the importance of the different products, suppliers, or relationships segmented in the specific portfolio model. Furthermore, portfolio models have a tendency to result in strategies that are independent of each other. The strategies for products and suppliers are seldom linked in the overall long term purchasing strategy and there is also no general guidance of choosing among the resulting strategies.

Regarding the supplier relationship, and in line with Kornelius and Van Stekelenborg (1994), the authors stress that it is not enough only to focus on the power balance between the buyer and the supplier and suggest strategies based on that current balance (as Kraljic suggests). Exploiting its power as a buyer can be a strategy that works in the short run but not such a wise move in the long run. Ellram and Olsen make a parallel to the methods by Lopez as a former manager at General Motors. Lopez used his buying power to impose massive cost reductions from their suppliers. However, the main critique concerns the need of models to assist in the management of the company's entire portfolio of relationships.

²⁹ Kornelius, L., Van Stekelenborg R.H.A, (1994), A diversified approach towards purchasing and supply, p. 45-46, Production Management Methods

2.1.2.1.2 Classification of buyer-supplier relationships

Bensaou (1999) discusses the implications of the fact the business press and academics recommend managers to move from arm's length relationships to longer-term collaborative strategic partnership. This was largely based on empirical studies of Japanese production and supply practices, for example the success stories of Toyota. The author discusses some of the negative aspects of a more collaborative partnership, i.e., they are costly to develop, nurture, and maintain. The investments in the relationships also increase the risk for the buying company. Bensaou's conclusion that collaboration should be avoided under some circumstances is in sharp contrast to still another discussion departing from the Kraljic model, namely Håkansson & Persson (2007), who argue that collaboration is always possible and can be applied in Kraljic's matrix all quadrants. This means that partnership should not only be prevalent in the strategic quadrant of the matrix and that exploitation of different types of interdependencies can always be useful. A buyer and a supplier can through collaboration create more efficient activity structures.³⁰ Gelderman and Van Weele (2000) on the other hand, highlight the power dependence perspective in the Kraljic matrix. They stress that there is a natural conflict of interest in the buyer supplier relationship, i.e., both prefer a dominant power position due to the attached benefits. Furthermore, it is not clear in what way the balance of power enters the Kraljic matrix.

2.1.2.1.3 Strategic change in the Kraljic matrix

Gelderman and Van Weele (2002) highlight that the Kraljic model does not provide guidelines for strategic movements of commodities and/or suppliers within the matrix, i.e., how movements should be done in the matrix before or after decisions regarding strategic change. In addition to this, they mean that purchasing professionals should always look for possibilities to move to another more favorable strategic position in the matrix. The authors stress that previous research do not reveal how purchasing professionals handle the problem of positioning commodities and/or suppliers into the portfolio and how they actually develop purchasing strategies, and what results are derived from using portfolio techniques. Kraljic's recommendations for the four categories in the matrix are recommendations such as: strategic partnership, exploiting power, efficient processing and volume insurance. The authors mean that these recommendations are generic by nature and thereby only rough indications.

Gelderman and Van Weele (2003) also mention that previous researchers always claim strategic partnership in the strategic quadrant, which is not according to Kraljic ideas (balance, exploit, diversify). Furthermore the authors highlight the importance of considering how the supplier accesses the situation. A partnership is only possible if both parties have the same intentions.

³⁰ Håkansson, H., Persson, G., (2007), Supplier segmentation "When Supplier Relationships Matter", p. 40, The IMP Journal, Volume 1 no 3

An extension from the previous authors and also a critique of the dyadic relationship between the buyer and supplier is the ideas by Fredriksson (2007) concerning triadic sourcing. This concept deals with managing interdependencies in triads including one buyer and two suppliers and where the supplier-supplier relationship simultaneously is subject to both competition and cooperation. This concept means that the dyadic relationship is not always valid. Gelderman and Van Weele (2003) further argue, in line with Day (1986), that there are unanswered questions regarding measurement in the Kraljic matrix. Day (1986) also questioned how the dimensions in the matrix (profit impact and supply risk) should be measured. Gelderman and Van Weele (2003) stress that measurement- and strategic issues are handled differently and that companies adjust the Kraljic approach in order to for example match the conditions on the end markets and the overall business strategy.³¹

Caniels & Gelderman (2005) verifies that contributions to the Kraljic model typically recommend one purchasing strategy for each portfolio quadrant (this report is a supplementary research of the report by Gelderman and Van Weele (2003)). However the authors mean that purchasers make a clear distinction between alternative strategies within each quadrant. Little is also known about how the concept of the power dependence between buyers and suppliers and how that influence the choice for a specific purchasing strategy.

2.1.2.2 Contributions to the Kraljic matrix

2.1.2.2.1 The purchasing behaviour in relation to single materials or components and supply and purchasing situations

In the literature review by Dubois and Pedersen (2002), Kornelius and Van Stekelenborg (1994) mean that prescriptive models are needed in order to choose the appropriate purchasing strategy in a given situation. In order to cope with this the authors presented a typology for the characterisation of supply situations. For each purchasing situation a working method is presented, which will support decision makers in coping with the diversity in supply situations. The control principles of purchasing in a specific time span, should derive from the internal market demand (strategic importance of the purchased goods and services, product characteristics, unpredictability of the customer demand) on the one hand, and the delimitations of the external supply market (buyer's importance of the supplier, switching costs, supply scarcity, number of suppliers, geographic concentration the financial situation of the supplier, overall market conditions and so forth) on the other hand. This led to four purchasing situations: plain supply situation, internally problematic situation, externally problematic situation, and a complicated situation This enables purchasers to focus their attention on the contingencies that need attention and by that develop purchasing strategies for the different quadrants in the proposed portfolio. The complicated situation

³¹ Gelderman, C., Van Weele, A., (2003), Handling measurement issues and strategic direction in the Kraljic's purchasing portfolio model, p. 209 -210, Journal of purchasing and supply management

(high control need of the internal- and the external supply market) can be compared to the strategic quadrant of the Kraljic matrix, where the purchase needs to comply with very detailed specifications and conditions. In this situation purchasing must be integrated with other functions within the buying company. Taken together the control activities are directed towards supply situations that are causing a high control need³².

Ellram and Olsen (1997) expanded differently on the Kraljic matrix to analyse a firm's portfolio of supplier relationships. They propose a multi-step approach to analyse a company's supplier relationships. The first step in the portfolio analysis is to analyse spend in order ascertain ideal relationships for major purchases. In this step weights are assigned to each of the factors in the two dimensions. The second step concerns a descriptive analysis of the company's current suppliers in order to look at how the supply task is managed. Finally, actions plans are formed how to adapt existing supplier relationships based on the link between the analysis made in step one and two. The first step generated a portfolio model with the dimensions: *difficulty of managing the purchase situation* and *strategic importance of the purchase*. The latter dimension describes factors internal to the firm (competence factors, economic factors and image factors) and the first dimension describes external factors to the company (product characteristics, supply market characteristics and environmental characteristics). This division between internal- and external factors can be seen as similar to Kornelius and Van Stekelenborg (1994) and the control principles for internal market demand and the external supply market.

The second step in the working method, analysis of the company's suppliers, leads to a new portfolio model with the dimensions *relative supplier attractiveness* and the *strength of the relationship*. In relation to Kraljic, power dependence and supply risk are only two factors in this phase influencing the appropriate strategy when managing supplier relationships. Factors influencing the dimension *relative supplier attractiveness* are: financial and economic factors, performance factors, technological factors, organizational, cultural, and strategic factors and finally complemented factors, such as actions plans based on changes in a specific business context and the safety record of the supplier. Factors in this dimension, describe why a buyer should choose a specific supplier and it depends on the contingency for a specific commodity/supplier. This is also in line with Kornelius and Van Stekelenborg (1994). The second dimension, *the strength of the relationship*, includes economic factors, character of the exchange relationship, cooperation between the buyer and the supplier and the distance between the buyer and the supplier. The importance of each relationship is represented by a circle, where the size of the circle illustrates the current allocation of resources to the relationship. Finally and the third step of the working method by Ellram and Olsen, is to

³² Kornelius, L., Van Stekelenborg R.H.A, (1994), A diversified approach towards purchasing and supply, p. 307-315, Production Management Methods

develop action plans for moving from current to the ideal supplier relationship regarding purchases highlighted in step one. If the ambitions are to keep a strategically important supplier, it is important to strengthen the relationship.³³ The third step can be seen as similar to the fourth phase of Kraljic's working method.

2.1.2.2.2 Classification of buyer-supplier relationships

Bensaou (1999) also proposed a framework for managing a portfolio of relationships. His framework for managing a portfolio of relationships departs from the correlation between the buyer specific investment and the supplier specific investment. From this perspective, strategic partnership correlates with the investments from both the buyer and the supplier in the relationship, and as one of the respondents of the study declared – “We are tired of this smooth talk about let's work in partnership”. The findings in the authors study leads to a portfolio of how to manage a portfolio of relationship. This portfolio will help senior managers handle the governance structure and/or the relational design under different external contingencies. Furthermore, there will be guidance how to manage each relationship. Each quadrant of the first portfolio (specific investments) is from the perspective of managing the relationship not seen as inferior to one another. Therefore a strategic partnership does not mean a high performing relationship. Based on this, Bensaou (1999) proposes a portfolio of managing relationships based on the dimensions *relationship requirements* and *actual relationship capabilities*. If the relationship requirements are high and the actual relationship capabilities are graded low, the status is an under designed relationship. This means that the capabilities of the current relationship need to adapt to the requirements of the relationship in order to be match and to be competitive.³⁴

Gelderman and Van Weele (2000) developed the Kraljic matrix model further by trying to identify and classify the content of the buyer-supplier relationship. The authors created a model with the dimensions *buyer's dependence* and *supplier's dependence*. The main variable used is the power dependence between the buyer and supplier. Gelderman and Van Weele highlights different action plans, i.e., how to manage suppliers given a specific category. To be able to assemble “high points” in purchasing situations the authors suggest a balanced relationship. Important supplier strategies are: volume insurance, exploiting power and efficient processing.

2.1.2.2.3 Strategic change in the Kraljic matrix

Gelderman and Van Weele (2002) highlight the conditions for changing positions in the Kraljic matrix. The company in the study always try to reduce the dependence on the supplier involved, but in some cases (monopolistic situation) the company must accept a locked in position. In order to solve that situation,

³³ Ellram L., Olsen R., (1997), A portfolio approach to supplier relationships, p. 102-107, Industrial Marketing Management

³⁴ Bensaou, M. (1999), Portfolios of Buyer-Supplier Relationships, MIT Sloan Management Review

new suppliers need to be introduced. This could be a problem if patents are part of the locked in relationship. The study also stresses the importance of working with world-class suppliers because they are performing better both technically and economically. If a strategic partner is underachieving an alternative is to make the product less complex and find alternative solutions with new suppliers. Furthermore, moving from the leverage quadrant to the strategic quadrant might be a good choice for co-design. A general conclusion is that portfolio approaches is very helpful in positioning commodities in different segments and in developing purchasing strategies. Furthermore, the Kraljic matrix is useful for discussing, visualizing, and illustrating the possibilities of differentiated purchasing-and supplier strategies. It can also be useful for coordinating purchasing and supplier strategies among different fairly autonomous business units. However the case company doesn't make any calculations for assessing high or low in the matrix. As one respondent stressed –“It is better to be roughly right than totally wrong”.

Gelderman and Van Weele (2003) illustrate in their case study a clear tendency that buyers want to avoid supply risk and thereby position more in the center of the matrix.³⁵ Regarding strategic movements in the matrix and the movements to and from the strategic quadrant, three distinctive situations were found: (1) holding the position and maintain strategic partnership, (2) holding the position and accept a locked in partnership and (3) moving to another position and terminate the partnership and thereby find a new supplier. In a move to the strategic quadrant it is about developing a partnership.³⁶ Most likely it concerns a commodity positioned in the leverage quadrant. Furthermore three distinctive measurement methods were found: the consensus method (strategic discussions), one-by-one method (one key variable per dimension) and the weighted factor (a number of factors for each dimension). The consensus method has some attractive features and is based on reasoning and discussions. The last remark is that experienced portfolio users always include additional information with reference to the overall business strategy, the situation in the supply market and the capacities and intension of the individual suppliers.

Caniels and Gelderman (2005) empirically looked at the relative power and total interdependence for a number of portfolio-based purchasing strategies. The result of the study, among Dutch purchasing professionals, is that there appear to be a significant difference in the power positions between the purchasing strategies within each quadrant, and that it might be associated with differences in power and dependence positions. The choice of a specific purchasing strategy within each quadrant is yet unclear but can be associated with differences in power and dependence between the buyer and the supplier.³⁷ New findings concerned the fact that positions in the bottleneck and the strategic quadrants were associated

³⁵ Gelderman, C, Van Weele, A, (2003), Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model, p. 213-214, Journal of Purchasing and Supply management

³⁶ Gelderman, C, Van Weele, A, (2003), Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model, p. 213-214, Journal of Purchasing and Supply management

³⁷ Caniels, M., Gelderman, C., (2005), Purchasing strategies in the Kraljic matrix – A power and dependence perspective, p. 141, 151, Journal of purchasing and supply management

with supplier dominance while the other two quadrants had a more balanced power structure. This means that when a strategic relationship was maintained in the strategic quadrant, there was supplier dominance. The authors mean that one could have expected a more balanced power structure, because of the general thoughts by Kraljic of using power dependence as a key element when designing strategies in the strategic quadrant. Furthermore, the perceived supply risk by the buyer was strongly associated with the power balance between the buyer and the supplier.³⁸

The structure of the power balance highlighted by Caniels and Gelderman (2005), can be extended to Fredriksson (2007) and his conclusions regarding “triadic sourcing”. He suggests in his study that triadic sourcing may lead to higher performance since suppliers are put under competitive pressure. This involves among other things product development. However, more than two suppliers used in this hybrid strategy is not a good choice because of the fact that the number of interfaces grows exponentially with the number of suppliers involved. This limit the resources spent on managing each interface.³⁹ On the other hand, one supplier would take away the positive tension created by competition.

2.2 Strategic change from a purchasing perspective

In order to understand how companies act when they form new strategies, we have used a model from the book by Axelsson, B, Rozemeijer, F., Wynstra, F., (2005), *Developing Sourcing Capabilities*. This model is found in the chapter written by Agndal, Axelsson and Melin and the model complements previous presented purchasing portfolio models (with the Kraljic matrix as a foundation) in order to highlight strategic change. Our intention using this model is to better understand the strategic change process, both from the perspective of the purchasing department but also from the company as such. Organizational, environmental and individual influences on change will probably make it easier to understand how the strategic change process within the purchasing department, affects decisions regarding strategic change in the Kraljic matrix. The thesis will focus more on the strategic change as such and not as much how the change process is managed.

2.2.1 Four types of strategic change

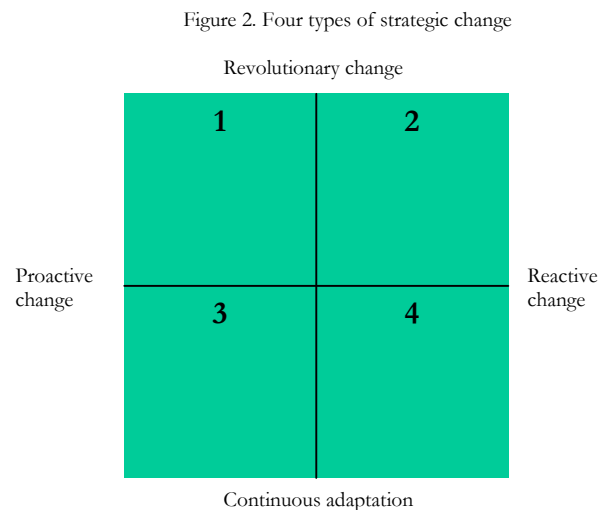
Strategic change in sourcing cannot be isolated from the mission of the firm. This means that all strategic purchasing activities should be related to the mission of the firm. Early academics saw strategy as a static thing and something that only the top management were involved in. It was more content oriented and less process oriented, i.e., how the content of the strategy was conceived. The latter means a focus on patterns in organizational actions and decisions and thereby a focus on strategy as firm behavior. The

³⁸ Caniels, M., Gelderman, C., (2005), Purchasing strategies in the Kraljic matrix – A power and dependence perspective, p. 153, *Journal of purchasing and supply management*

³⁹ Fredriksson (2007), *Cooperating and competing in supply networks: Making sense of a triadic sourcing strategy*, Chalmers. Göteborg

identification of how strategies emerged, were highlighted by Mintzberg and Waters (1985) with intended and realized strategies. However these findings only gave a partial understanding of the strategy formation. The use of real-life observations contained traits of both emergent and deliberate elements in the identification of how strategies come forward. The authors developed their ideas into eight generic types of strategy formation, where the (1) planned strategy was the most deliberate strategy based on a stable environment and the (8) imposed strategy was the most emergent, where the firm and the its actors have little control.⁴⁰ The consensus method presented in Gelderman and Van Weele (2003), as one approach to the measurement issue in the Kraljic matrix, can be seen as similar to the seventh step in Mintzberg and Waters' eight generic types of strategy formation. The latter authors see the consensus strategy as emergent since it entails mutual adjustments between organizational actors as a consequence of the absence of a centrally directed strategy.⁴¹ With this is in mind, a conclusion from the case study company in Gelderman and Van Weele's study, is that the case company lack a clear connection between the purchasing strategies related to the Kraljic matrix and the overall corporate strategy.

Strategic change is defined as a change in the pattern of organizational actions. In order to understand strategic change one need to understand the process of how organizational behavioral pattern form. Strategies seen as emergent or deliberate can be looked upon a continuum with the pure effect on both ends. When these two are combined in a typology with strategic changes as more or less proactive or reactive in nature, a matrix typology of strategic change emerge. *Proactivity* is seen as an active step taken in a new direction and a *reactive* strategic change is a consequence of a respond to changes in the internal and the external context of the firm. The two-dimensional typology of strategic change can be further elaborated with the contribution of a third dimension - *the degree of magnitude of strategic change*. As figure 2 displays, four ideal type change situations emerge. In square number one the situation is both proactive and revolutionary and it exemplifies a major strategic change. The change itself finds it origin within the organization without an obvious need to do such a change.



Source: Agndal, H., Axelsson, B., Melin, L., (2005), Developing Sourcing Capabilities, p 21, John Wiley & Sons Ltd

Square number two is a situation classified as revolutionary and reactive. It is a major strategic change that is a result to an explicit problem (for example a typical turn around). Square number three signifies a

⁴⁰ Agndal, H., Axelsson, B., Melin, L., (2005), Ch 3, Developing Sourcing Capabilities, p. 33-36, John Wiley & Sons Ltd

⁴¹ Ibid, p. 36-37.

company that initiates and drives changes without any pressure of doing so; it is a proactive and continuous adaptation. Square number four also has a continuous adaptation but instead of reactive nature, which is due to some organizational or environmental pressure for change. This also shows that patterns of strategic actions do not form by themselves but often are related to both pressures from the organization and the environment. This can also be related to who make strategic change happen. Strategic change does not come about as a direct result from environmental and organizational conditions; changes in patterns of actions of a firm come from actions of human beings. Furthermore, a new way of looking at the strategy process is the concept of strategizing, which signifies a continuous formation and transformation of strategic patterns. This theoretical view has the perspective from the individual and how individuals interact with each other. This makes it important for the purchasing practitioners to understand the context in which the process of strategy formation takes place.

Additionally, contingency theorists mean that the appropriate strategy depends on the environmental conditions and changes in these. Strategy is by that definition dependent on the contingency of the environment. This was also something that was stressed earlier by Kornelius and Van Stekelenborg (1994). Industrial theorists on the other hand, mean that strategy is an adaptation to regulatory frameworks and the general prevailing norms in a certain industry.⁴² Taking together the thesis will use the theoretical framework regarding strategic change in order to understand how organizational and/or environmental pressure affect decisions regarding strategic change. This can be used to understand how the Kraljic matrix is used to perform strategic change for important categories.

2.3 Summary of the theoretical framework

2.3.1 Kraljic's four phases

The Kraljic matrix was introduced and it revealed a working method containing four different phases. These are: the classification phase, the power-dependence phase, the strategic positioning phase of products identified in phase one (exploit, balance, diversify) and the last phase where long-term actions plans were created for strategically important commodities. The first phase in this working method involves classification of commodities based on the dimensions profit impact and supply risk. The general idea concerns maximizing buying power and reducing the supply risk. The thesis will study how the four phases in Kraljic's working method are used.

2.3.2 Critique and contributions to the Kraljic matrix

Contributions to the Kraljic matrix have foremost concerned models with the aim of improving the

⁴² Agndal, H., Axelsson, B., Melin, L., (2005), Ch 3, Developing Sourcing Capabilities, p 36-42, John Wiley & Sons Ltd

working method for dealing with the disregarded supplier side. The power dependence perspective is not enough for managing the buyer supplier relationship. An example was the portfolio model by Ellram and Olsen (1997), that used the dimensions *supplier attractiveness* and the *strength of the relationship*, in order to better manage the relationship with the suppliers. The power dependence perspective was only one element in their portfolio model. The articles by Gelderman & Van Weele especially dealt with issues relating to the power dependence and how professional purchasers handle strategic movements in the matrix. The critique and the contributions to the Kraljic matrix will be used in order to take advantage of earlier research regarding purchasing portfolio models and make it possible to get a broad approach how the Kraljic matrix is used among purchasing practitioners. This research will be used during the analysis of the four phases in the Kraljic working method.

2.3.3 The business context and the purchasing organisation

In the theoretical framework it became evident that the business context matters in the choice of a suitable purchasing strategy. We will therefore highlight the complexity of the different industries of the case companies in order to shed light on this element. Furthermore, the purchasing organisation need to pay attention to the overall mission of the firm by the fact that the purchasing function is seen as a strategically important business function and thereby should reflect the overall corporate set up. Kraljic (1983) also mentioned this. An extension from this that the purchasing department needs to cooperate with other functions of the company and strive for joint- and global purchasing actions in order to take advantage of the synergies that be a result of such a conscious work. The thesis will highlight the above mentioned factors when analysing the case companies. This can probably increase the understanding how the Kraljic matrix is used.

2.3.4 Strategic change

Finally the two-dimensional typology describing change in organizational patterns was displayed and this model will contribute to an understanding how decisions about strategic change appear. The four types of strategic change (proactive and revolutionary; reactive and revolutionary; proactive and continuous; reactive and continuous) will be analysed and the findings will be used to better understand the strategic change process within the purchasing organization and in the Kraljic matrix.

3 Methodology

In this section we will introduce the mode of procedure and how this study is carried out. This will make it possible for the reader to enable a critical assessment of the performed study. We will further highlight the credibility of the study.

3.1 Research approach

There are two distinctive alternative research approaches: deductive and inductive, in order to relate theory to reality. The inductive approach focuses more on process, understanding and interpreting, and empirical findings are used as a foundation for generating new theories. A deductive approach on the other hand departs from already valid theories, and hypothesis are derived and tested empirically.⁴³ Because of the purpose of the thesis and the fact that not all conditions are known on beforehand, the thesis will have a combination of the two above mentioned research approaches, namely an abductive approach. While a deductive approach depart from theory and an inductive approach from empirical findings, an abductive approach combine empirical finding with previous theory. Previous theory(s) is used to find patterns, which may contribute to new knowledge.⁴⁴ The aim of the thesis is to depart from the portfolio theory by Kraljic and complement it with latter research aimed at improving- or replacing the matrix. These more or less structural empirical findings will be complemented with new empirical findings. Because of the fact that there seems to be some knowledge-gaps concerning how the Kraljic matrix is used, the thesis considers the ideas by Kraljic as shallow- and not as deeply routed regularities. From that perspective it seems more natural to depart from an abductive approach instead of a deductive one, especially if the working method of Kraljic is considered (all four phases) and not only the classification part of the matrix (the first phase). Furthermore, the specific business contexts that are studied will set their own traits.

3.2 Research method

There are two different approaches to research: qualitative and quantitative. The purpose with qualitative research is to understand the context of a phenomenon or a certain experience, compared to the quantitative researcher who is striving to understand how all parts work together, in order to create a clear picture of the phenomenon.⁴⁵ The quantitative method is formalized and structured and more controlled by the researcher. Furthermore, quantitative research is based on statistic analysis and a high degree of generalization. Qualitative research on the other hand, deals with more complex contexts and where the aim is to get a deep understanding of a certain phenomenon in the context. In addition to this, the researcher gets close to the information source and the analysis is based on understanding and interpretation.⁴⁶ In order to answer our research question in the best possible way, we have used the qualitative in depth approach to be able to explain the dynamics between actors and other relevant factors in the studied contexts.

⁴³ Bryman, A., (2002), *Samhällsvetenskapliga metoder*, p. 20 – 21, Alan Bryman and Liber AB

⁴⁴ Alvesson, M., Sköldberg, K., (1994), *Tolkning och reflektion*, p. 42, *Vetenskapsfilosofi och kvantitativ metod*, Alvesson & Sköldberg, Studentlitteratur Lund

⁴⁵ Merriam, S., (1994), *Fallstudien som forskningsmetod*, Studentlitteratur 1994

⁴⁶ Holme, Idar Magne & Solvang, Bernt Krohn (1997), "Forskningsmetodik; Om Kvalitativa och kvantitativa metoder", 2 uppl, Lund: Studentlitteratur.

3.3 The case study as a research strategy

The thesis uses a comparative case study, in order to emphasize on differences and similarities between the chosen companies. Holme and Solvang (1997) stress that this is a good way to perform a qualitative research. We will use four different but significant purchasing companies. With significant we mean Swedish industrial manufacturing companies with a global approach and a well-established purchasing organisation. There are number of reasons why we have chosen to work with the case study as a research strategy. First of all, it makes it possible to study complex processes involving many variables. This is an important element in order to be able to get insight and answer our research questions.

A case study can capture many different situations and contexts and it does not show any static traits; instead it can give an understanding of how people and their actions are connected in different situations. A case study is typically used for “how” research questions. It is well suited when examining contemporary phenomena within their real-life contexts and when the boundaries between the phenomena and the contexts are not clearly evident.⁴⁷ Furthermore, relevant behaviours cannot be manipulated.⁴⁸ We wanted to gain insight in how the Kraljic purchasing portfolio model is used among purchasing practitioners and especially how it is used to perform strategic change for critical items. An extension of this is that the thesis will conduct an explanatory case study, because of the nature of the questions and the following explanations why the four case companies make the choices they do, regarding the Kraljic matrix.

3.4 Data collection

There are two ways to collect data, either by primary- or secondary sources. A primary source is when data is gathered through direct observations and interviews. Secondary data means information collected from already written material, for example findings on the Internet, information in annual reports or in specific databases. Primary data for our research are gathered through our semi-structured interviews and secondary data have foremost been collected from academic reports published in well-known business databases. During the semi-structured interviews some pre-specified questions were not always asked to the respondents, because of earlier answers overlapping these questions. However, if the answers of pre-specified questions were not exhaustive, we addressed these questions later on by e-mail or by telephone.

3.4.1 Selection of companies

We made a selective non-random choice of the case companies used in the thesis, and they were chosen based on some predefined criteria (Swedish industrial manufacturing companies with a global approach and a well-established purchasing organization). The chosen companies responded positively to an e-mail

⁴⁷ Yin, R.K, (2003), *Case Study Research Design and Methods*, p. 13, Sage Publications, Inc.

⁴⁸ Yin, R.K, (2003), *Case Study Research Design and Methods*, p. 5-7, Sage Publications, Inc.)

that was sent regarding our research questions and the information we needed to conduct the study (the company should to some extent use the Kraljic matrix). Based on this procedure we chose: Astra Zeneca, Scania, Skanska and Volvo Penta as case companies. Furthermore, we discussed different case-candidates with our supervisor and these discussions departed from mature purchasing companies actively developing their purchasing organization. All these four companies have, according to our supervisor, continuously worked for successful changes regarding their purchasing strategies and developed very powerful purchasing organisations. All of them are also actively working to make the purchasing department more efficient, which includes reducing costs through consolidation and improving the coordination, both within the purchasing organisation but also with other functions of the company.

3.4.2 Themes and categories

During the thesis' start-up phase many questions were formed within our research area and many of these questions have later on been used in our interviews. Based on the chosen theories we created an interview form with questions grouped in themes based on the summary in the theoretical framework. Kvale (1997) stated that themes are a well-balanced approach in order to get a good structure of the questions and thereby make it easier to fulfill the purpose of the thesis.⁴⁹ Based on the chosen themes relevant categories were selected as a foundation for categorizing the empirical data. Categorizing the empirical data is central when it comes to analyzing and interpreting the empirical findings.⁵⁰

We divided the interview form into four themes: (1) the organization and the purchasing department, (2) relationship to the Kraljic matrix, (3) strategic change and (4) industry complexity (the business context). Analysing the suppliers will partly be done within theme number two, but partly also highlighted in an own sub-section within Kraljic's section in the empirical presentation. Inspiring sources for the themes were among others, Kraljic (1983), Van Weele (2005), Axelsson, Rozemeijer and Wynstra (2005) and articles written by Van Weele and Gelderman (2002-2003). These authors contributed to the thesis pre-holistic understanding of the chosen research area.⁵¹ With our interview form we tried to cover all parts in the research area and at the same time make our questions as precise as possible in order to fulfill our purpose. We tried to phrase our questions in a distinct manner in order to deal with free interpretations. Furthermore, we divided the themes into categories partly based on the research mentioned above, partly based on how we interpreted and naturally structured the notes from the interview material. The latter especially meant an increased focus on highlighting the four phases in the Kraljic working method and not only on the Kraljic matrix used in the working method. The themes and categories are summarized in the tables below and they are used to highlight the interpretations in the analytical sections.

⁴⁹ Kvale, S. (1997). Den kvalitativa forsknings intervjun. Lund: studentlitteratur

⁵⁰ Andersen, I., (1998), Den uppenbara verkligheten, Val av samhällsvetenskaplig metod, p. 183, Studentlitteratur, Lund

⁵¹ Andersen, I., (1998), Den uppenbara verkligheten, Val av samhällsvetenskaplig metod, p. 197, Studentlitteratur, Lund

Table 1, Relative within- and between case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	The company		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)	Category 2	Category 3	Category 4
The organization and the purchasing department	A2	A3	A4
(A1) The degree goals and strategies of the purchasing department corresponds to the overall mission of the firm			
(A2) The degree of correspondence between the purchasing department and other functions of the company			
(A3) The degree of joint purchasing and global purchasing coherence in the company			
Relationship to the Kraljic matrix	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups			
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers			
(B3) Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials			
Strategic change	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change			
(C2) Proactive and continuous in decisions about strategic change			
(C3) Reactive and revolutionary in decisions about strategic change			
(C4) Reactive and continuous in decisions about strategic change			

The answers/notes within each theme will be explicitly structured in each section in the empirical presentation of each case company. The text within each theme will be pulled apart and assigned to each category by a coding system.⁵² Plotting each company's themes on a big chart and mark sections of the text with different colored pencils, in order to assign the text to the different categories within each theme, will do this process. After categorizing the empirical data, the second important element in the analysis- and the interpretation process, is to relatively analyze the themes and the categories within each theme.⁵³ Based on the defined categories within each theme

the relationship between the categories are analyzed and interpreted in a within analysis after each case company's empirical data and in a between case analysis in the analysis section. This mean for example that the degree of following the first phase in Kraljic's working method will be relatively compared to the

Table 2, Relative between case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Volvo Penta Astra Zeneca Scania Skanska		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category, D1, is relatively compared to the other categories in the theme, D2 and so forth)	Category 2	Category 3	Category 4
The industry	D2	D3	D4
(D1) The complexity of Volvo Penta's industry			
(D2) The complexity of Astra Zeneca's industry			
(D3) The complexity of Scania's industry			
(D4) The complexity of Skanska's industry			

degree of following the second phase and so forth. Regarding the complexity of the industry, this category will be relatively analyzed between the case companies in the between case analysis in the fifth section. A scale with five grades - none, low, balanced, medium and high, measures the relative comparison between the different categories, where the degree high and

⁵² Andersen, I., (1998), Den uppenbara verkligheten, Val av samhällsvetenskaplig metod, p 200, Studentlitteratur, Lund

⁵³ Andersen, I., (1998), Den uppenbara verkligheten, Val av samhällsvetenskaplig metod, p 184, Studentlitteratur, Lund

none are the extremes. The grade none means that no relative comparison can be done between the specific category and the other categories within the theme. The degree high is defined as a category that is highly used compared to the other categories within the theme. Balanced, means that two or more categories are interpreted as being used as much. This also means that a single category cannot be graded as balanced. Furthermore, if all categories were used equally all would be graded as balanced. The degrees medium and low are used when the interpretation of a specific category cannot be graded as either one of two of the extremes. These two degrees will be more arbitrary than the extremes but will on the other hand contribute to a more dynamic view of the relative degree of the different categories. Medium is used when a category is more used than balanced but not as extreme as high; low is used when the opposite is valid.

However, it is important to clarify that the analysis of the different categories are based on a relative analysis between the different categories. This means for example that if all categories are graded as balanced, it does not signify how much on an absolute scale the categories are being used. All categories can for example be used to a less extent. The relative analyses are also based on interpretations regarding the analyses of the different case companies.

3.4.3 The respondents

The thesis used a key informant method when choosing respondents for the interviews. This means that a number of purchasing directors and managers at the corporate level were chosen for the interviews. They all have specialized knowledge and long experience of purchasing portfolio models but also regarding strategic decisions made in their purchasing organisation. Furthermore, they can give us a good overview of the entire purchasing operation.⁵⁴ During the interviews with the respondents we mixed three different interpretation levels, according to Steiner Kvale (1984). First we interpreted the respondent's knowledge regarding the chosen research subject, which became the starting point in the analysis process. Based on the discussions- and the notes during the interviews, we made a common-sense interpretation departing from our knowledge concerning the theoretical framework.

The interviews were made according to the following procedure:

	Date	Check of material	Time
Volvo Penta	2007-10-25	2007-10-30	100 min
Astra Zeneca	2007-10-25	2007-10-30	60 min
Skanska	2007-11-09	2007-11-12	60 min
Scania	2007-11-14	2007-11-15	75 min

⁵⁴ Gelderman, C., Van Weele, A., (2002), Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model, p. 209, Journal of purchasing and supply management

3.5 Critiques of case study as a research strategy

There are some limitations using case study as a research strategy. Dubois and Gadde (2002), mean that a case study is rich of information and situation specific, which makes it difficult to make generalizations. There is however a different view of generalization captured by the concept analytical generalization. If the view of generalization only means counting regularities on the surface, there is no reason to believe that a certain pattern should be valid for several occasions. Only valid statistical studies can reject coincidences in the linkages. However, if there are hidden patterns and tendencies common for several shallow phenomena, extensions from a certain theory's empirical domain are both possible and desirable, even for qualitative studies.⁵⁵

Even if it is preferable for a qualitative study, to have generous- and tense descriptions, the study can be too long, deep and detailed. For readers and/or decision makers the reading itself can be a tiresome story, which may lead to difficulties understanding the totality of the context. According to Guba and Lincoln (2000), case studies can either simplify or exaggerate the factors in a unique situation, which can make the reader to take wrong conclusions.⁵⁶ Moreover, it requires a lot of training regarding interviews in order to receive useful and essential information. There are no guidelines how to construct a report, which leaves it to the author(s) capability to make a relevant case study. Furthermore, there can be a bias because of the fact that the information is gathered from a limited number of respondents, which may affect the result of the research.⁵⁷

3.6 Research quality

3.6.1 Reliability

Reliability means that you will get the same result if the thesis was rewritten with the same purpose, the same procedures and within the same context. This will not be the case if temporary stipulations occur. The aim with a high reliability of a study is to minimize the errors and biases in the study. When a case study is done it is important to document the procedures in order to understand what have been done and how it can be used for replication later on.⁵⁸ On the other hand, Merriam (1994), mean that the reliability in a qualitative case study will be low, because a reproduction of the case study will not generate the same result. This due to the fact that the collected information is a product of the interpretations of the authors, but also the specific contexts in a certain time span. However, the result can instead be meaningful, consistent and highly dependent. This means explaining the researcher's

⁵⁵ Alvesson, M., Sköldbberg, K., (1994), *Tolkning och reflektion*, p. 39-40, Vetenskapsfilosofi och kvantitativ metod, Alvesson & Sköldbberg, Studentlitteratur Lund

⁵⁶ Lincoln, Y.S. & Guba, (2000) E.G. *Naturalistic Inquiry*.

⁵⁷ Merriam, S., (1994), *Fallstudien som forskningsmetod*, Studentlitteratur 1994

⁵⁸ Yin, R.K, (2003), *Case Study Research Design and Methods*, p 37-38, Sage Publications, Inc.

preferences, triangulating the results by using several sources in the data collection of the same material and create a manual for other independent people.

In the case of this study one of the authors has read the course Purchasing management, which contributed to a general interest of purchasing. Furthermore, both of the authors have some own experience of purchasing and outsourcing, which contributes to a general knowledge-base regarding purchasing-and supply management. Concerning collecting the same data with different sources, we were not able to use a tape-recorder in any of the interviews. However, both authors attended during all the interviews and the re-written material from an interview was sent to the respondent for corrections. The interview material was adjusted according to the notes from the respondent, which both improved the reliability but also the internal validity. This due to the connection between these two quality measures.⁵⁹ If we found it necessary we addressed the same questions in a questionnaire sent by mail. Concerning the last aspect related to an agenda for data collection and the performed case studies in general, the information in section 3.4 conveys the general course. In addition to this the theoretical framework, the group of themes (for the questions) and the categories in the within- and between case-analysis, well contribute to good quality concerning the reliability of the case study. However, there might be some bias concerning the respondents participating in the interviews due to the fact that questions asked were of a strategic nature and therefore some information could have been omitted.

3.6.2 Validity

Internal validity concerns if the result of the case study corresponds to the reality. Because of the fact that it is impossible to have a good reliability without a good internal validity, much of what is said in the reliability section is also valid in this section. All four respondents were to some extent prepared when the interview started, because of the e-mail that was sent earlier regarding what the study aimed for. This could however be compensated negatively by the time pressure that was evident when the interviews were done. Furthermore, an increased time span for performing the case studies would probably have improved the internal validity. This also concerns an increased participation of the respondents during the total workload of the case study. However, because of the tough agenda of all respondents, this was not possible. We did however strengthen the internal validity by triangulation and the fact that the respondent monitored the written material.⁶⁰

External validity concerns to what extent the result of a case study is useful in other situations than the particular area of the study. If the external validity is high it is possible to generalize the result to other areas. As in the case with reliability, internal validity must be present in order to generalize the result,

⁵⁹ Merriam, S., (1994), Fallstudien som forskningsmetod, p 181, Studentlitteratur 1994

⁶⁰ Merriam, S., (1994), Fallstudien som forskningsmetod, p 178-180, Studentlitteratur 1994

because no one is interested in meaningless information. As was mentioned in section 3.5, the specific situation of the case study makes it difficult to generalize the result from a qualitative case study. However, if there are hidden patterns and tendencies common for several shallow phenomena, extensions from a certain theory's empirical domain are both possible and desirable, even for qualitative studies. With the clear definition of the themes as a foundation for the questions and the thorough investigation of the working methods related to the different researchers in the theoretical framework, we make an effort to make some normative suggestions regarding improvements of the Kraljic working method. Furthermore, in order to improve the external validity, the thesis explores companies with somewhat different business contexts. This highlights different problem areas for different industries concerning the chosen subject.

4 Empirical study

4.1 Volvo Penta

4.1.1 The company and the industry

Volvo Penta (VP) is a world-leading supplier of engines and complete driving systems to the marine industry. VP operates in more than 100 countries and 95 percent of the sales is exported to other countries. The company is divided into three different business units: marine spare time, marine commercial and industry.⁶¹

VP is a forward going and technologically leading company and a competitive advantage for VP is the organizational-, financial- and technical support they get from the Volvo Group.⁶² A result of that is the creation of new and innovative engines and so forth and VP is for example the world leading company when it comes to “driven-systems”, not only the propeller part, but the whole system.⁶³ The company's average product life cycle is very long, approximately 15-20 years. This is considered when strategically important decisions are made. It is therefore important that the right suppliers are chosen, and that they can deliver what is agreed in the contract. The industry's product life cycle can be compared with the car industry, 3-5 years and for trailers, approximately 8-10 years. The electronic development however, increases rapidly every year and there are two to three radical progress changes per year. The whole industry is also in an expansive phase. With this in mind, it is difficult for the purchasing staff to have enough time to make a superior procurement work. In addition to the rapid technological development, suppliers that are immature in their own processes and routines, make the strategic procurement even more difficult.⁶⁴

⁶¹ <http://www.volvo.com>, April, 2008

⁶² <http://www.volvo.com>, April, 2008

⁶³ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008

⁶⁴ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008

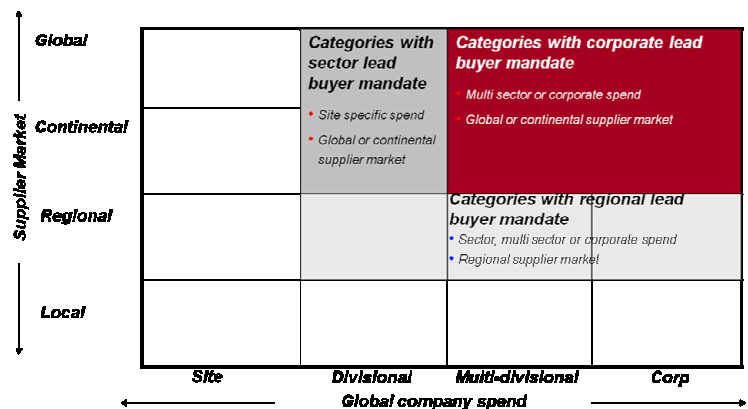
4.1.2 The organization and the purchasing department⁶⁵

During the 1980's VP was very successful. However, during the 1990's the market took a downturn and, according to the respondent, in these times companies often restructure to a centralized organization/sustain a centralized organization. However, VP made a decision, in conjunction with some consultants, to go the opposite way and instead work in a decentralized way. The result was a split into five purchasing areas, with the aim of supporting the company's main commodity groups. In 1996/1997 the company returned to a centralized purchasing organization and according to the respondent, VP could once again use the full volume of scale. Furthermore, the purchasing organization could improve the overall efficiency and enhance the degree of cooperation and coordination within the rest of the company, which is important due to the rapid changes regarding different projects. During these cross-functional projects, the purchasing department is responsible for the commercial part regarding the company's suppliers. This also means that many of their products are purchased globally and often jointly with other companies within the Volvo Group.

VP's purchasing organization slowly develops towards a more segment-oriented organization with the aim of obtaining maximal effect of all possible synergies. This means that many products are segmented in order to be procured and handled in an efficient way. Product orientation has earlier meant that unnecessary variants have been developed with lower volumes, reduced efficiency and higher costs as a result. The purchasing department also strives to work accordingly to the overall mission of the firm, but there are some aspects that worsen the ambition of doing so. For example the production department can have certain preferences regarding which suppliers that should be called in. The reason for this can be that the supplier is relatively geographically close to the production, which may overcome logistics problems and so forth.

As mentioned earlier coordination and joint actions are prioritized. In order to achieve this they use the AT-Kearney model. The contribution of this model in relation to the ideas by Kraljic and the used portfolio model is that it improves the possibilities of a global approach and also the possibilities of an increased coordination. The model describes all purchasing categories, which are valid for

Figure 3, The AT-Kearney purchasing approach used by Volvo Penta 2007



Source: Volvo Penta 2007

⁶⁵ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008, all information in section 4.1.2

the products the company is manufacturing/selling. The model can in a structured way show which products that should be bought locally for the local business and which commodities that should be bought globally for the whole corporation. With the AT-Kearney model in mind VP has divided their purchasing organization into different geographical areas. The office in the US is responsible for the suppliers in the NAFTA region; the office in China has a local focus in China. The office in Sweden is responsible for Europe and the rest of the world. This geographical dividend improves the coordination when it comes to purchasing, quality and the transparency. The respondent thinks that everything in the procurement system improves a bit with this approach. A coordinated procurement system is still under progress and it will hopefully increase the synergy effects but also issues related to measurement and reporting. VP has a “sourcing board”, which strives for increased coordination and that the company’s purchasing organization works according to the overall mission of the firm.

4.1.3 Relationship to the Kraljic matrix⁶⁶

VP uses the ideas by Kraljic to visualize the commodity complexity, but also to visualize how the different commodity segments are displayed at a certain point in time. However, the respondent states a general question: “but what else can you use the matrix for?” It gives you an hint about strategic important segments, bottleneck areas and so forth, but the Kraljic matrix is not enough to create strategies and actions plans for different commodities. Every commodity segment and purchasing area must be judged separately, where industry knowledge, experience, and special consideration must be weighted in order not to do any mistakes (whether it is operational, tactic or strategic). The model can be used for classification and by that visualizing different commodity segments, but is less good for driving change. This is even more important for strategically important products such as engines, transmissions, electronics, cooler-systems and propels.

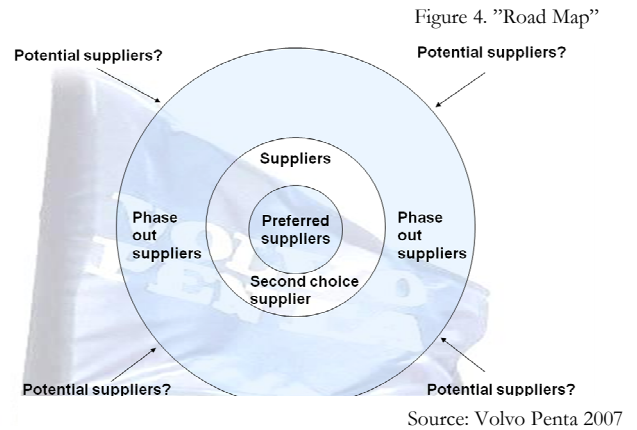
Concerning Kraljic’s central idea of maximizing buying power and minimizing risk, the respondent stress that the main use for the purchasing department departs from an understanding of the different suppliers and how stiff a certain position is with a certain supplier (re-sourcing). A stiff relation will reduce the flexibility regarding movements in the matrix. Furthermore, and related to the power dependence perspective, is that VP also want to know which companies that can be put under competitive pressure. Other factors are also considered and a conclusion is that Kraljic’s dimensions are not directly used for segmentation of products/suppliers. VP is interested in understanding the dynamics of a specific supplier relationship. In order to classify different commodities and/or suppliers, the purchasing department has strategic discussions. This also means that there are no direct calculations in the classification phase and that the academic critique regarding measurement problems is less problematic. However, the respondent

⁶⁶ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008, all information in section 4.1.3

agrees with the critique that the supplier side is disregarded and further that the matrix does not have any explicit directions for movements, i.e., holding one position or moving to another.

4.1.3.1 Volvo Penta's suppliers⁶⁷

As figure 4 displays, VP has an own classification ("a road map") of preferred suppliers, second choice suppliers, phase out suppliers and potential suppliers. Furthermore, a "goal Matrix" is used in order to evaluate the suppliers. It describes a couple of "goal variables" (see the variables in Appendix IV), which is useful for measurement and in setting goals. The "road map" describes how the purchaser can come closer to the supplier and investigate what prerequisites there are for a well functional and sustainable cooperation. The time horizon is 1-5 years. VP also uses a so-called "capacity review", which among other things describes how the purchaser should react when the volumes differ heavily from all ready bought capacity.



If VP finds themselves in a locked in position concerning a certain commodity, and become too dependent on a specific supplier, they try to find alternative suppliers in order to reduce the risk. They want to avoid the risk of being locked in, because a competitor can see the supplier as a potential buying candidate, which is not a particularly good situation. Examples of other risk factors are lack of deliveries caused by a fire in a supplier factory. Concerning VP's involvement with their suppliers, they are not working with 2nd or 3rd tier suppliers. Instead they have many restrictions and rules how their 1st tier suppliers should handle their suppliers. In the 1980's VP controlled subcontractors. Furthermore, VP has "host buyers", who is steering the strategic set up for the suppliers, both concerning contracts and the directives to the local buyer. The local buyer keeps the relation stimulated by working with the daily business and by attending at meetings about quality product development and so forth.

4.1.4 Strategic change⁶⁸

VP does not use the Kraljic matrix as a tool for performing strategic change. The matrix is only used to visualize different commodity groups. However, Kraljic's dimensions are not used. Furthermore, marginal changes in the matrix are not that important and the possibility for radical changes for a certain products is not that high. The respondent also mean that there are some difficulties regarding updating the matrix continuously. The people involved must be well informed about a specific commodity segment and the

⁶⁷ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008, all information in section 4.1.3.1

⁶⁸ Stefan Hillsten, Purchasing Manager, Volvo Penta, 2007/2008, all information in section 4.1.4

general market conditions, in order to make strategic changes for strategically important products. Additionally, the respondent stress the importance that a purchasing organisation must have the relevant competence in order to be successful regarding decisions about strategic change of commodities/suppliers in the matrix. The supply market specifically, is an important source for performing strategic changes for strategically important commodities. In order to make decisions regarding their suppliers they proactively and continuously up-date the status in their supplier relationships, by the earlier mentioned “road map”, the “goal matrix” and the “capacity review”. The “host buyer” controls the strategic decisions. An important factor in this work is avoiding being locked in a supplier relationship due to the reduced flexibility.

4.1.5 Within case analysis

4.1.5.1 The organization and the purchasing department

When VP reestablished a centralized purchasing organization in 1996/1997, the company could yet again use volume of scale, be more efficient in their purchasing work and improve the general cooperation within the Volvo Group. This also enhanced the degree of correspondence to the overall mission of VP. Furthermore, the company strives to improve the maximal effects of possible synergies, which among other things involves joint purchasing, purchasing involvement in product planning and product development. This means that there is an ambition of improving the correspondence between the purchasing department and other functions of the company. However, aspects such as the production department’s preferences for certain suppliers can dilute this ambition. A conclusion is that the purchasing organization develops to a more segment oriented organization similar to the ideas of category management. These thoughts are in line with the AT-Kearney model using the dimensions supplier market and global company spend.

Taken together we come to a conclusion that VP has an ambition of working according to all three categories, i.e., according to the overall mission of the firm, cooperate with other functions and strive for joint- and global purchasing, and we judge the relative comparison between the three categories as being balanced (no relative difference). This is also in line with the thoughts by Kraljic (1983) that it is of importance that the purchasing department reflects the corporate set-up and that the purchasing department is well-informed regarding new projects. Related to this is the findings by Gelderman and Van Weele (2003), that experienced portfolio users always include additional information concerning the overall business strategy.

4.1.5.2 Relationship to the Kraljic matrix

Kraljic’s ideas are used in the purchasing organization and it is seen as a good generic purchasing tool. It is

excellent for new purchasing staff in order to understand the structure of the purchasing department, because of the visualization of different product categories in a specific time span. From this point of view the used portfolio model becomes a helpful organizational tool. However, Kraljic's dimensions, profit impact and supply risk are not used, but instead *stiff relationships* and *competitive pressure* are (other dimensions can also be used). These in line with the findings by Gelderman & Van Weele (2003) that some companies adjust the Kraljic approach in order to for example match the conditions on the end markets and adapt the purchasing strategy to the overall business strategy. However, if the dimensions are changed, one can question if a company is actually using the Kraljic matrix and not just a purchasing portfolio model adapted to the specific conditions of the company and the industry. If not Kraljic's dimensions are used the answer would be no, but in the case of VP they use the general ideas by Kraljic and it especially involves the flexibility and the power dependence of a specific supplier relationship. This due to the dimensions *stiff relationships* and *competitive pressure* and in line with Gelderman & Van Weele (2003), that buyers want to reduce the risk towards the suppliers. Furthermore, VP complement their purchasing portfolio model with a "road map" and a "goal matrix", where the latter deals with variables related to the profit impact dimension of the Kraljic matrix. With this in mind, our interpretation would be that that Kraljic's dimension *supply risk* is dealt with in their purchasing portfolio model and the dimension *profit impact* with the use of the "goal matrix".

Our interpretation of how Kraljic's four dimensions relatively are used, are summarized in table 3. As was mentioned earlier, VP does not classify their commodities according to the dimensions of Kraljic's matrix, but instead implicitly deal with the dimensions through the three different models they use. This also mean that it will not be possible to directly judge the relative use of the phases in Kraljic terms. Instead we will indirectly judge the different phases dependent of how they use their portfolio model and the other models. Due to the fact that the dimensions of Kraljic's portfolio model are not used we consider the first phase to be none comparable to the other three phases. The classification is based on the dimensions *stiff relationships* and *competitive pressure*, which are more related to the dimension *supply risk* of the Kraljic matrix. Furthermore, the classification part is done by strategic discussions similar to the consensus method presented by Gelderman & Van Weele (2003). With this in mind we therefore interpret phase two and three as being balanced. Phase two and three are implicitly being used by the "road map" and the adapted purchasing portfolio model. Dependent on where their suppliers are situated in the "road map", strategies such as balance, exploit and diversify are used. An important goal is to avoid being looked in a specific supplier relationship.

Opposite to the ideas by Kornelius and Van Stekelenborg (1994) and Ellram and Olsen (1997), it seems like VP's main focus concerns issues related to the power balance between them as a buyer and their

Table 3, Relative within case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Volvo Penta		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)	Category 2	Category 3	Category 4
The organization and the purchasing department	A2	A3	A4
(A1) The degree goals and strategies of the purchasing department corresponds to the overall mission of the firm	B	B	
(A2) The degree of correspondence between the purchasing department and other functions of the company		B	
(A3) The degree of joint purchasing and global purchasing coherence in the company			
Relationship to the Kraljic matrix	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups	N	N	N
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers		B	M
(B3) Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			M
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials			
Strategic change	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change	N	N	N
(C2) Proactive and continuous in decisions about strategic change		H	M
(C3) Reactive and revolutionary in decisions about strategic change			L
(C4) Reactive and continuous in decisions about strategic change			

suppliers and strategies are based on this balance. In the empirical findings of VP it became evident that they use a so-called “capacity review”, which among other things describes how the purchaser should react when the volumes differ heavily from all ready bought capacity. This review, with the foundation of the “goal matrix” and the “road map”, can be seen as similar to the long-term action plans suggested in Kraljic’s forth phase. However, we don’t really see a clear distinction between the “goal matrix” and the “road map” on the one hand (with a time horizon of 1 – 5 years) and the “capacity review” on the other hand, as a long-term planning tool. We therefore, in Kraljic terms,

interpret phase two and three of the Kraljic working method as being relatively more used compared to the outspoken long-term focus that Kraljic suggest in phase 4. Although, the sourcing board of VP, might have more outspoken long-term action plans (clear- objectives, steps, responsibilities and different measurement need according to Kraljic to be clear for the top management) similar to the ideas by Kraljic. This was not however addressed by the respondent, but should be relevant when the long product-cycle of 10-15 years is considered. Taken together, VP uses the general ideas by Kraljic but has adapted the matrix to the conditions in the industry.

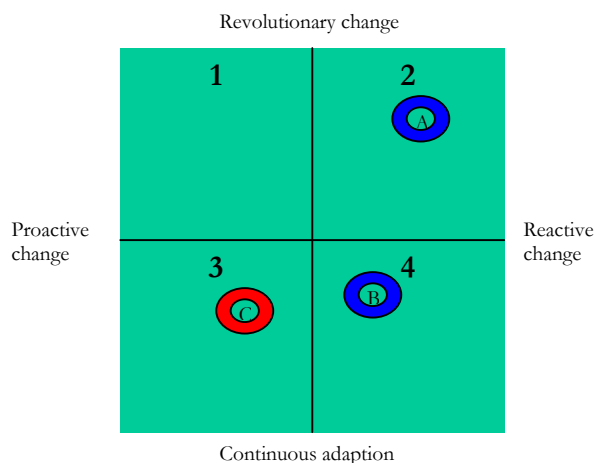
4.1.5.3 Strategic change

VP does not consider the Kraljic matrix as a tool for decisions regarding strategic change of critical items. The matrix is not context driven and each commodity segment must be judged separately. This is in line with Kornelious and Van Stekelenborg (1994) and the critique that the buyer-supplier relationship is not linked to a specific situation. An extension from this is that the respondent stress that, in line with previous critique, the matrix disregard the suppliers. Because of the fact that VP considers the supply market as the most important source for decisions regarding strategic change of critical commodities and/or suppliers, the Kraljic matrix will not be used as a tool for strategically important decisions.

Competent employees are seen as critical for evaluating the supply market. This also means that movements in the Kraljic matrix, with the use of his dimensions, will not be seen as problematic because of the fact that other dimensions are used. However, the respondent stress that small changes in the matrix is not interesting and the probability of big rapid changes will be small. This means that Gelderman and Van Weele's (2002) findings regarding marginal changes in the matrix is not valid in the case of VP. However, it seems a little bit contradictive that changes in their portfolio model is not that interesting, when an important factor in their purchasing strategy is to reduce the risk towards a supplier. Both a stiff relationship and a relationship with low competitive pressure, would imply a desired movement in the used portfolio model. This means that Gelderman & Van Weele's (2003) reasoning, concerning the three different choices of movements in the matrix (holding the position and maintain strategic partnership, holding the position and accept a looked in partnership, and moving to another position terminating the partnership), would be interesting even for VP. However, there might be a difference how movements are considered when Kraljic's dimensions are used. Furthermore, VP doesn't make any calculations in the classification phase, which may negatively affect the understanding of how movements should be done in the matrix.

To further highlight the way the purchasing department changes the strategic pattern of the purchasing department, figure 5 with four types of strategic change will be used. It became evident that the purchasing department foremost continuously and proactively evaluates their suppliers and the supply market. This due to the fact that the supply market is the most important source for strategic change. The "C-circle" displays the proactive and continuous work to update the used purchasing portfolio model. This makes it possible to form counterstrategies based on predictions about the future. The used purchasing portfolio model, and by that also the Kraljic matrix, is not used to drive these changes – it is done by other models and working methods. It also became evident that there were some environmental and organizational pressures leading to strategic changes within the buying department. The other two circles display the organizational changes that indirect affected how strategic changes for strategically important commodities/suppliers are performed. In the early 1990s there was a downturn and some consultants recommended VP to change their purchasing organization to a decentralized one. This is seen a reactive and revolutionary change due to a turnaround. It is visualized by the "A circle". However, the purchasing staff didn't like this way of working because of lack of volume of scale and the purchasing organization become yet again centralized in

Figure 5, Volvo Penta, Strategic change



1996/1997. This can be seen as a reactive and a somewhat continuous change and is displayed by the “B-circle”. This change made it possible to be more coordinated in the overall organization, which enhanced the degree of correspondence between the purchasing organization and the overall mission of the firm. The obvious reason why the respondent considers volume of scale as advantageous is apart from lowering the procurement costs, to improve the power balance towards the suppliers. With an increased volume, the power of VP increases and it will be easier to avoid locked in partnership.

Taken together, the relative comparison between the different categories in the theme *strategic change* are visualized in table 3. We interpret, based on the empirical data from this study, that square number one in figure 5 (C1), cannot be compared to the other categories, because of no use. Square number three, signifying the proactive and continuous work (C2) of improving the overall purchasing routines, is judged as being highly used compared to square number two (C3) and less more used than square number four (C4). This due to the fact that this proactive and continuous work is the foundation concerning strategically important decisions regarding important commodity segments/suppliers. The reason why category number two is judged as high in comparison to category number three and less more in comparison to category number four, is because the latter is based on major strategic changes resulted to an explicit problem (for example the turnaround in the 1990s), and the former due to less degree of organizational and environmental pressure, which probably occur more often and thereby also affects strategic change more frequently.

4.2 Astra Zeneca

4.2.1 The company and the industry⁶⁹

Astra Zeneca (AZ) is one of the world leading companies in the pharmaceutical industry. Their products are available in more than 100 countries and AZ has approximately thirty production plants in twenty different countries. AZ's procurement costs is globally SEK 57 700 million and SEK 11 300 million in Sweden. Of money spent - 70 percent is on products and the rest on services and employee related costs. In year 2006, AZ purchased direct material for SEK 2 800 million, whereas indirect material and services constituted SEK 8 500 million (including clinical studies needed in their production). The respondent states – “it is important to focus on the right orders due to the fact that 97 percent of our orders is below SEK 100 000”. 3 percent of all orders is representing approximately 80 percent of the total spend.⁷⁰

AZ is a part of a very complex industry, due to the fact of the legal restrictions regarding what is manufactured and sold. This concerns legal restrictions of their own company, the suppliers that are contracted and the medical substances used for the sold drugs. Before a new drug is sold it has to pass at

⁶⁹ Jan Sjö Dahl, Astra Zeneca, - *Sourcing Director Sweden* 2007/2008, information in section 4.2.1

⁷⁰ <http://www.astrazeneca.se/OmOss/Korta-fakta.aspx?mid=72> , based on 2006 years' figures

least three test phases in order to be legally approved and available on the market. Furthermore, it takes approximately ten years from an idea about a new drug until it is sold on the market. In addition to this, AZ's goal is to have an even higher standard than the legal restrictions lay down. There are also strict restrictions for the suppliers AZ work with. It takes approximately twelve months to be legally accepted as a certified supplier of a specific medical substance. Consultants hired for clinical studies are also an important element in the three phases. This sheds light on the complexity when changing conditions with already signed suppliers and the actions plans finding new ones. When the product life cycle is considered, the patent conditions are very important for being successful on the market. During this stage AZ either manufacture their own medical substances or outsource it to qualified suppliers. A critical factor when outsourcing a strategically important commodity is to assure supply. However, when the patent expires other pharmaceutical companies can enter the medical field and gain market shares from the original manufacturer. This increases the number of suppliers on the market.

4.2.2 The organization and the purchasing department⁷¹

Purchasing was not on the agenda twenty years ago. However, in the last couple of years there have been dramatically changes in order to cut costs and to enable effective routines. Furthermore, in year 2000, Astra and Zeneca emerged and a lot of changes followed in the purchasing organization in order to coordinate systems- and operational processes. Today, the purchasing department is working with everything from ordering to strategic coaching; for example examining quotations and making effective processes for purchase-to-pay (P-2-P). The choice of suppliers is a mutual decision between the user and the purchasing department. After the merger the purchasing department became more centralized and globally oriented. This meant that the daily procurement work became more synchronized and goals and strategies of the purchasing department should/shall correspond to the overall mission of the firm. Category management became an important element in the purchasing process, in order to cope with the changing working conditions. Furthermore and related to the value of being successful in the test phases of a new drug, is that the respondent stress the importance that the purchasing department must work closely with other functions in order to find new capable suppliers.

4.2.3 Relationship to the Kraljic matrix⁷²

The respondent mentions some positive feedback about the Kraljic matrix. The matrix is simple to apply and easy to understand and the purchasing staff has been educated how the model works and by that also familiar with the general thinking regarding the model. Furthermore, there is no necessary funding commitment and it focuses on today's suppliers, which is all right if no supply base change is required.

⁷¹ Jan Sjö Dahl, Aztra Zeneca, - *Sourcing Director Sweden* 2007/2008, all information in section 4.2.2

⁷² Jan Sjö Dahl, Aztra Zeneca, - *Sourcing Director Sweden* 2007/2008, all information in section 4.2.3

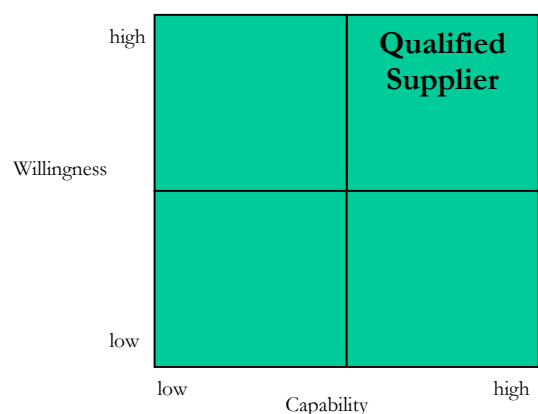
The Kraljic matrix is foremost used as a risk-analysis tool on a tactical basis. This means that the matrix is used at the category level, which makes it possible to display critical and important supplier relationships based on the profit impact and the risk. An example of risk can be the consequences if a supplier factory is destroyed by fire. The Kraljic matrix is thereby used as a tool for building up relations based on the specific contingency in the buyer-supplier relationship and the inherent risk in the relationship. The matrix is however not used as a tool to perform strategic changes.

Regarding negative aspects, the respondent stress, that the model itself is not enough. First of all, the model is used for assessing strategies for a category, not for assessing a supplier. Therefore it is not possible to introduce new capable suppliers into the portfolio. The model is based on each supplier's current spend versus risk. This means that new suppliers would not fit this model as they have no spend. Additionally, the matrix does not have a consistent methodology for assessing supplier willingness, supplier capabilities, or category criticality. Therefore the Kraljic matrix is complemented with other models in order to cope with supplier management.

4.2.3.1 Astra Zeneca's suppliers⁷³

The respondent stress that the Kraljic matrix cannot be used for lay down supplier willingness and capabilities, in order to find qualified suppliers. However, AZ uses the Kraljic matrix as a starting point from a risk perspective, to understand how critical and important a certain relationship is. In order to find capable suppliers AZ uses a portfolio model with the dimensions *supplier capabilities* and *supplier willingness*. A high score on willingness can for example be if the supplier is willing to invest in a warehouse for temporary stock. It is by that a measure how willing the supplier is to be committed in the relationship. Variables connected to supplier capabilities are for example: code of conduct, problems regarding scheduled deliveries, quality, returns, answering questions and in general the overall purchase-to-pay process. However, the respondent also stress that it is important to consider what the suppliers think of AZ, i.e., how important the company is for a specific supplier. However, AZ is very strict concerning which suppliers are allowed to in public speak about the relationship.

Figure 6, Willingness and capabilities of suppliers



Source: Astra Zeneca 2007

Furthermore, and overall, AZ does not always believe in a win-win situation, but instead on a fruitful relation. There must however be some type of gain for both parties. Concerning qualified suppliers, they

⁷³ Jan Sjö Dahl, Astra Zeneca, - *Sourcing Director Sweden* 2007/2008, all information in section 4.2.3.1

are plotted in a new portfolio model with the dimensions *ease of implementation* and *qualified supplier*. Highly complex commodities (critical substance, patents and so forth) have a high score on both of these dimensions (see Appendix V, a)). This will lead to the plotting in the final portfolio model in the supplier management working method, a portfolio model with the dimensions *commodity complexity* and *category criticality* (see Appendix V, b)). A high score on both of these dimensions lead to a partnership and a strategic alliance. In year 2007, AZ Sweden, had twelve companies in this category and these are companies that directly or indirectly can affect the stock price of AZ. The final model should not be intervened with the Kraljic matrix, when the latter foremost deals with risk analysis. The first one deals with how critical a commodity is from a strategic point of view. Taken together, the multi-step working method presented above, is the primary tool to perform strategic changes in the purchasing organisation of AZ

4.2.4 Strategic change⁷⁴

When AZ makes decisions regarding strategic change, they use facts as a foundation. In addition to this, brainstorming in cross-functional teams/category teams is an important ingredient. The strategic discussion itself has changed from earlier only being based on the present situation for a specific product category. Today, decisions for strategically important products and/or suppliers are based on hypotheses. These hypotheses are built on earlier facts but also from the existing knowledge from participants in each category team. This is a starting point for strategic planning, but also for tracking problem/possibilities on a general basis. The respondent also stress that the visible part of purchasing- and supply management is often connected to classical purchasing aspects such as volume- and price changes, whereas beneath the shallow structures, hidden aspects are found. The cross- functional groups must find and understand the hidden aspect and continuously strive for improvement for a certain category. Opportunities may emerge that can be seen as rather complex, which probably also require a better and deeper cooperation between the purchasing unit and the user. This can for example concern questions such as make or buy, a complete change of the supplier base and so forth.

As mentioned earlier, AZ, do not think the Kraljic matrix is enough. This concerns the fact that the supplier side is disregard and that the matrix doesn't have a consistent methodology for the assessment of supplier- and category criticality. When AZ developed a new global working method for supply management, they wanted a working method that segmented suppliers based on the specific conditions in the pharmaceutical industry. The result was a multi-step approach with a series of models. This made it possible to better analyze the supply market and to cope with the complex business context. This resulted in a more holistic understanding of the different commodity groups.

⁷⁴ Jan Sjö Dahl, Aztra Zeneca, - *Sourcing Director Sweden 2007/2008*, all information in section 4.2.4

Nowadays, AZ departs from the ideas of category management and it is a process how similar external purchased products and services should be solved in the best manner. It is a continuously and long lasting process, which is cross-functional by nature and based on the company's needs and initiatives. The respondent means that this is a necessary tool in order to reach the saving goals for each commodity. All money spent is categorized from the same criteria. Cross-functional teams are formed to coordinate all the purchasing activities. Furthermore, the category plan describes the category from already made analysis. This analysis, which often departs from Porter's industry analysis, is also the starting point for the new supplier management working method, which is used as a complement to the disregarded supplier element in the Kraljic matrix. With the use of Porter's analysis in the initial phase, AZ highlights factors affecting the purchasing organization. AZ's quality standard for the used substances and the tablet packages, are seen as very important factors in the strategic decision process. The analysis can then be broken down to subcategory level. From this point of view, cross-functional teams strive to work forward and continuously implement purchasing improvements. Furthermore, category criticality is seen as important, in order to understand how strategically important the different commodity groups are. However, the respondent mentions that the new working method, opposite to the Kraljic matrix, requires a lot of training for the purchasing staff and it needs funding time for external data analysis.

4.2.5 Within case analysis

4.2.5.1 The organization and the purchasing department

After the merger between Astra and Zeneca in year 2000, the purchasing organization became more centralized and synchronized within the overall company. An extension from this merger was that the daily purchasing activities became more globally oriented and further, in line with the overall mission of the firm. Additionally, category management is seen as an important tool to be effective in the purchase-to-pay process, within the purchasing organization. In order to coordinate the purchasing activities within and between the different categories, cross-functional teams are formed and their main focus is to perform well regarding the critical categories. As in the case of Volvo Penta, a centralized approach is preferred in order to be more synchronized and coordinated within the purchasing organization and with other functions of the company. We mentioned that this is in line both with the thoughts by Kraljic (1983) and Gelderman and Van Weele (2003), regarding both that the purchasing department needs to reflect the corporate set-up and that experienced portfolio users always include additional information collected from the overall business strategy. An extension from this is the aspects mentioned by Kornelius and Van Stekelenborg (1994) that strategies assessed by portfolio models, seldom are linked to each other and to the overall long-term strategy. If the purchasing department is more in phase with the overall mission of the firm, it should be easier to deal with these weaknesses. This should be relevant independent of how matured a purchasing organization and how small/big a company is. Taken together and with previous

mentioned in mind, we interpret the relative comparison between the different categories in the theme *the organization and the purchasing department* as being balanced. We do not see any specific tendency judging the categories (working according to the overall mission of the firm, cooperate with other functions and strive for joint- and global purchasing) differently.

4.2.5.2 Relationship to the Kraljic matrix

AZ has a relation to the Kraljic matrix and the purchasing staff has been educated in order to understand the general thinking of the model. The model itself is also pedagogical in the sense that it is easy to understand the fundamental principles. Furthermore, the use of the matrix does not require any funding commitments, which is preferable from a budget- and investment perspective. AZ thinks that the matrix it is a first step to supply management but leaves an unanswered question – What shall you do later on? This means that they follow the first phase of the Kraljic working method, i.e., the classification part but complement the matrix with other models. The company does not use the portfolio for assessing suppliers, but instead as a tool for analyzing the risk for a certain buyer-supplier relationship.

Concerning phase two in the Kraljic working method the respondent sees obvious limitations regarding handling the suppliers. This in line with earlier academic critique, that the supplier side is a disregarded element in the matrix. The respondent means for example that new suppliers do not fit into the portfolio because they have no spend in the model. Thereby, the matrix does not introduce new capable suppliers into the portfolio. This also highlights the model's principle of the supplier's current spends versus risk. Additionally the supplier itself is not evaluated in the model, it is used for assessing strategies for a category. This means that they develop phase two and three of Kraljic's working method, in order to get a more dynamic view of the relations with the suppliers. With this in mind the power dependence, in Kraljic terms, between AZ and their suppliers will not be that crucial. This is in our opinion probably related to the specific conditions of the pharmaceutical industry, where the quality and the uniqueness of a specific medical substance made by a supplier is far more important than suggesting strategies based on the power balance. This in line with the critique by Kornelius (1994) and Van Stekelenborg and Ellram and (1997) that it is not enough to focus on the power balance between the buyer and the supplier. Purchasing strategies related to the buyer-supplier relationship must be related to a specific business context and therefore the authors suggest new working methods.

In our opinion Olsen & Ellram (1997) has the most comprehensive working method, and as can be seen from the table in appendix III, they start by analyzing the company's purchases, and then the supplier relationships are studied and finally action plans are developed. The interesting part with this working method is that the power balance is only one parameter of many in the analysis of the buyer-supplier relationship and why a specific supplier is chosen, depends on the specific contingency for the supplier. In

Table 4, Relative within case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Astra Zeneca		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)	Category 2	Category 3	Category 4
The organization and the purchasing department	A2	A3	A4
(A1) The degree goals and strategies of the purchasing department corresponds to the overall mission of the firm	B	B	
(A2) The degree of correspondence between the purchasing department and other functions of the company		B	
(A3) The degree of joint purchasing and global purchasing coherence in the company			
Relationship to the Kraljic matrix	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups	H	H	M
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers		B	L
(B3) Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			L
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials			
Strategic change	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change	L	N	L
(C2) Proactive and continuous in decisions about strategic change		N	M
(C3) Reactive and revolutionary in decisions about strategic change			N
(C4) Reactive and continuous in decisions about strategic change			

order to cope with this analysis a portfolio model with the dimensions *relative supplier attractiveness* and *the strength of the relationship* are used.

As can be seen from table 4, we judge phase one (B1) in the Kraljic working method to be highly used compared to phase two (B2) and three (B3). The reason why we don't interpret the relative comparison to be none despite the fact that phase two and three are not directly used, is the use of the Kraljic's matrix as a risk-analysis tool. Thereby phase two and three are indirectly used when the Kraljic's matrix is used as a tool for designing the appropriate buyer-supplier relationship, dependent on the specific contingency in the relationship.

However, we judge the risk analysis perspective of the matrix to be more in line with the usage of the classification phase. Risk assessment is probably a vital part during the brainstorming sessions and therefore we judge the relation (departing from phase one), between phase one (B1) and phase four (B4) as being less more used.

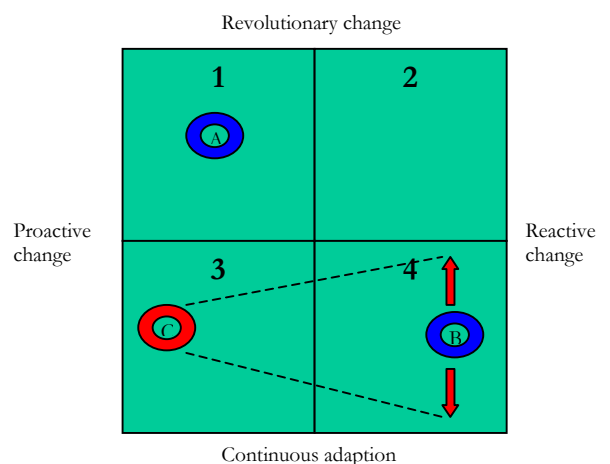
4.2.5.3 Strategic change

The respondent thinks that the Kraljic matrix only portrays the perspective of earlier changes and that the model cannot be used to consider future changes. Because of the fact that there is no consistent methodology for assessing supplier willingness, supplier capabilities or category criticality, a multi-step supplier management working method is used. Porter's industrial analysis is used as starting point in order to understand the external factors and the dynamics on the supply market. From this initial market analysis AZ uses a portfolio model that assesses supplier willingness and capabilities. The willingness dimension can be related to the findings by Bensaou (1997) regarding the correlation between buyer investment and supplier investment as a foundation for a partnership. From this point of view AZ need to match the structure of the relationship based on the specific requirements. Qualified suppliers are structured based

on a new portfolio model, which leads to the final step of the multi-step approach of plotting commodities based on the complexity and the category criticality.

An important forum for making strategic changes regarding critical categories, is the cross-functional strategic discussions based on current facts and hypotheses in order to find hidden problems and possibilities. AZ uses hypothesis based on existing knowledge and documented facts. The knowledge and the facts are used as a starting point to elaborate with further circumstances that demand decisions about strategic change for critical items. This can for example be a hypothesis about implications of purchasing a new critical medical substance or the internal packaging of a tablet. Figure 7 highlights this as a proactive and continuous adaptation (the “C-circle”). The strategic discussions can, as in the case of Volvo Penta, be seen as similar to the consensus method (strategic discussions) presented by Gelderman & VanWeele (2003). However, as mentioned earlier, the complex legal infrastructure that is of vital importance in the pharmaceutical industry probably makes it difficult to predict every single update in medical standards for new substances and so forth. Patent regulations can also be related to this and how proactive AZ has been, to cope with an expired patent and when new actors and suppliers enter the market. In figure 7 this is visualized by the two dotted lines between the “C-circle” and the “B-circle”. If the discussed and elaborated hypotheses are correct there is a proactive and continuous adaptation of strategic change, whereas if something that is not that predicted, the strategic change can be seen as more continuous and reactive.

Figure 7, Astra Zeneca, Strategic change



Before the merger between Astra and Zeneca the purchasing organization was not coordinated because of the different purchasing units, i.e., a more decentralized approach. The organizational change to a centralized purchasing organization, is visualized in the figure 7 above by the “A Circle”, and can by its nature be seen as proactive and revolutionary. This due to the fact that the merger was a major strategic change without any direct pressure of doing so. Furthermore, if something goes wrong concerning a specific drug, for example not anticipated side effects, the strategic actions would be considered as reactive and revolutionary. Taken together and displayed in table 4, there are no relative comparisons between category three (C3) and the other categories due to the fact that we didn’t make any plotting in the quadrant for reactive and revolutionary strategic change. As in the case of Volvo Penta, AZ has an ambition of working proactively and continuously regarding decision making for the most important commodities/suppliers. This is why this category (C2) has a higher relative use in comparison to C1 and

C4. Category C4 is relatively less more used than category C1 based on the low frequency of mergers as a major strategic change.

4.3 Scania

4.3.1 The company and the industry⁷⁵

Scania (SC) is a world-leading manufacturer of trailers, busses, and industrial and marine engines. A growing segment is also providing different cost effective services to their customers. SC is operating in more than 100 countries and their factories are located in Europe and in Latin America. The products SC purchases nowadays are more complex, due to the technological development. Earlier, SC was production oriented, which through time has changed to a market oriented approach. Today customers' demands and needs drive the product development. Furthermore, an increased competition in the industry, has led to more proactive actions by the actors in the industry. Concerning the production cost, 70 percent of the trailer cost is purchased and 30 percent is made in-house.

4.3.2 The organization and the purchasing department⁷⁶

The respondent stress that during his 32 years of employment at SC, the company has grown significantly, which also has affected the purchasing organization. Today they have the same amount of employees in the commercial sector as in the industrial one. The commercial sector means that SC owns their retailers, which helps SC to follow the whole process and become very strong on the aftermarket. This has evolved through time and resulted in a more complex structure of the business process for a specific commodity segment (contains more parts). The purchasing organization needs to pay attention to how spare parts of the products are torn down, in order to perform proactive- and effective procurement. It also requires a total cost perspective for the customer and it reviles if the purchasing organization is involved early in the product development.

Regarding the purchasing organization's relation to other functions in the company, the respondent means that they must continuously work along with the other functions. This because of the need of mutual dependence between the different departments and in order for the production department to understand the process of what is procured, manufactured and sold. Almost every week the purchasing department arrange meetings with cross functional groups, where people from different departments in the company (R&D, Production and procurement) attend. Furthermore, the respondent stress that it is quite natural that goals, strategies and handling plans of the purchasing department correspond to the overall mission of

⁷⁵ Roger Rytterström, Scania; Director Global Purchasing Parts, Cheet metal, Chassis and Bus Components (Interviewed 2007/2008) , information in section 4.3.1

⁷⁶ Roger Rytterström, Scania; Director Global Purchasing Parts, Cheet metal, Chassis and Bus Components (Interviewed 2007/2008) , all information in section 4.3.2

the firm. SC is an engineering company, which means that the purchasing staff needs to understand the technology behind the products/parts that is procured in order to meet the needs of the user.

The company is roughly divided into three product/commodity groups (rope, cabin and chassis), where a quality- and a project group support each group. The commodity groups “own” the suppliers and are responsible for the business. Being responsible and owning the supplier means dealing with business operations, business development, develop strategies and choosing suppliers and so forth. In year 1998 the purchasing department was split into a project- and a production unit. Earlier when problems emerged in the production unit, and the purchasing department had important meetings with suppliers regarding future projects, the purchasing department had to put all the effort into the production problems. This meant that the purchasing organization had to postpone important supplier meetings. However the new organizational design with a project- and a production unit, has made it is easier for the purchasing organisation to focus on oncoming projects. The respondent stress, that this is a very important element for a technology driven and leading company such as SC. The purchasing organization needs to make continuous changes in order to follow the company’s expansion ambitions. Furthermore, SC has a global approach, which means that they want to achieve volume of scale on a global level.

4.3.3 Relationship to the Kraljic matrix⁷⁷

SC uses the Kraljic’s matrix foremost to observe if the purchasing department is working with the right things. This concerns for example following which products that have been out for request of quotation as a first step in the classification process. However, the respondent means that the Kraljic matrix is not used to create changes in existing situations; instead the matrix is a consequence of changes. As the respondent mentions - “you can see that you are working with the right things.” This means that the matrix is secondary driven. Furthermore, the respondent stresses that decisions about strategic change for critical products are based on arguments following some type of common sense. These arguments are supported by different types of micro-analysis. This concerns for example analysis of new and important steps in the product development and how it affects the purchasing department, quality evaluations, profit calculations and so forth. However, the respondent means that the matrix on a general basis is an excellent tool for purchasing- and supply management. Though, instead of profit impact as a dimension in the Kraljic matrix, cost per year is used. The respondent states that measurement of variables for the dimensions do not constitute any direct problem. Furthermore, and related to the critique against Kraljic regarding that the supplier side is disregarded, it is considered as a medium problem and SC complements the matrix with other models in order to evaluate their suppliers.

⁷⁷ Roger Rytterström, Scania; Director Global Purchasing Parts, Cheet metal, Chassis and Bus Components (Interviewed 2007/2008) , all information in section 4.3.3

4.3.3.1 Scania's suppliers⁷⁸

Concerning SC's suppliers they choose to cooperate with small/middle sized companies and not big world class- and system suppliers. The respondent means though, that they also cooperate with system suppliers, i.e., suppliers that can deliver all components for a certain product, but he will not call them world-class suppliers. SC has traditionally worked with small- and middle-sized companies. This is due to the fact that SC is technologically driven and has the advantage of developing new products. SC tries to avoid working with world class suppliers, because it reduces the flexibility. They think it is better to work with small/middle sized companies with approximately 50-100 employees, originally a family business which has grown in size. Another reason why they are not working with system suppliers is because SC wants to own the tools used in the production. System suppliers often claim an ownership of the tools and machines used in the production.

SC do not chose suppliers that are losing money and a specific supplier must struggle to be profitable with SC. The respondent stress that this strategy can be risky in industry- and company booms, because when SC progresses, their suppliers also progress due to higher volumes. However, this is often a temporary problem and the power balance usually reaches standard levels during normal economic conditions. There is always a risk that a supplier in progress attracts competitors or other suppliers in acquiring the supplier. They have action plans for situations like that, but these kinds of situations often have negative consequences. Furthermore, SC motivates their suppliers through the business itself, high volumes and high order value is enough. However, regarding small order problems for strategically important products, SC choose to involve the suppliers to a larger extent. Suppliers that are contracted for strategic products are contemplated to a larger extent. This also means that the decision process is much longer. There are more technical aspects to consider. Additionally, SC wants long-term contracts with strategically important suppliers, so that they can be integrated in the development of strategically important products and for improvements of existing ones.

Regarding sourcing policies the respondent means that dual sourcing is useful when dealing with the suppliers. This sourcing method was used 32-years ago but with time and trend, single sourcing became the main sourcing method. Nowadays, SC's purchasing organization has reestablished dual sourcing as the main sourcing method. Dual sourcing creates a competitive situation, both when it comes to existing products, but also when new products are developed. It means that either will existing suppliers take part of product development or new ones with better technological know-how will be introduced.

⁷⁸ Roger Rytterström, Scania; Director Global Purchasing Parts, Chet metal, Chassis and Bus Components (Interviewed 2007/2008) , all information in section 4.3.3.1

4.3.4 Strategic change⁷⁹

Regarding classification of the commodity groups in the Kraljic matrix as well as dealing with decisions about performing strategic change for important commodities/suppliers, the sourcing manager defines how many potential supplies that should exist for a certain article. There can also be influences from the R&D and other functions. These decisions are linked to a business plan. However, the respondent does not think that it is vital to exactly know how to change a commodity- or supplier position in the matrix. Concerning decisions about strategic change, the purchasing department must understand the product and the technique behind the product in order to drive changes. This is a fundamental element in SC's engineering climate. This means for example understanding the technique of wheels on trailers, which is a trailers most expensive- and critical elements. Everything on the wheel is expensive, breaks and so forth, i.e., the whole system that is a part of the wheel.

In order to make strategic actions regarding strategically important commodity groups, SC's suppliers are evaluated at meetings every week. During these meeting they make a list of all problems related to the suppliers. SC's priority is the quality and the delivery time, where late deliveries mean bad economical consequences. How it affects the profitability depends to the scope of the specific problem and is difficult to generalize. SC is also very clear in their communication with the suppliers especially concerning quality problems and if a specific supplier cannot contribute to further product development. The week meetings are complemented with more extensive month- and quarter based meetings.

In the long run (up to seven years), SC tries to have a market-oriented view and make different choices depending on the customers needs. There is also a dialog between other functions in the company, for example the production unit. This unit may for example have observed something that can replace an existing component for a certain commodity and therefore suggests a study of new suppliers. Another factor, which on long-term can influence SC, is the conformity to law, for example standards for emissions. This requires that SC is very proactive when it comes to law restrictions. Furthermore and mentioned earlier, which simplifies decisions about strategic change, is the fact that SC owns the supplier's tools. This means that the supplier cannot sell it to other actors and it improves the power balance for SC and increases the flexibility regarding performing strategic change.

4.3.5 Within case analysis

4.3.5.1 The organization and the purchasing department

SC explicitly acts according to the overall mission of the firm, which also stress the importance of working

⁷⁹ Roger Rytterström, Scania; Director Global Purchasing Parts, Cheet metal, Chassis and Bus Components (Interviewed 2007/2008) , all information in section 4.3.4

closely with other functions of the company. This is managed through cross-functional teams with different participants from R&D, production and staff from the purchasing department. As a global actor on the market and in combination with a mature purchasing organization, SC aims for volume-of-scale through global joint purchasing actions. As in the case of Volvo Penta and Astra Zeneca, we do not find any obvious reason why the three categories (according to the overall mission of the firm, cooperate with other functions and strive for joint- and global purchasing) in the theme, *the organization and the purchasing department* should not be judged as balanced relative to each other. Once more there is a tendency that the ideas by Kraljic (1983) and Gelderman and Van Weele (2003) are valid, regarding the importance that the purchasing department reflects the corporate set-up and that experienced portfolio users always include additional information concerning the overall business strategy.

4.3.5.2 Relationship to the Kraljic matrix

SC uses the Kraljic matrix in order to see that the purchasing organisation is working with the right things. The company explicitly follows phase one in the Kraljic working method – the classification of commodities as a foundation for a differentiated purchasing- and supply approach. However, they do not use Kraljic's both dimensions (profit impact and supply risk) and instead of profit impact the dimension *cost per year* is used. In our opinion it could be easier to use a cost perspective for a commodity instead of the profit impact, because in the latter you need both revenue and cost in order to know the profit. One can question how easy it is to track the revenue to for example the wheel-system of a trailer (if the aftermarket is not considered). This could be one reason why the respondent doesn't stress any general critique regarding measurement of the dimensions used in the used matrix. Despite the fact that cost per year is used, we still consider the matrix SC uses as a Kraljic matrix. In the article by Kraljic (1983) the profit impact dimension is seen as a dimension highlighting the strategic importance of the purchasing department. Profit impact can be used, but other dimensions can also be used, for example value added by the product line and different measurements reflecting the cost side. Therefore we regard the dimensions *cost per year* and *supply risk* as dimensions in the Kraljic matrix. This kind of reasoning is in line with the findings by Gelderman and Van Weele (2003), that companies handle measurement of the dimensions differently. One reason could be to match the prevailing conditions in the industry. Furthermore, Day (1986) questioned the measurement of the Kraljic's dimensions (profit impact and supply risk); using cost per year instead of profit impact, could be one solution to handle problems related to measurement.

The respondent thinks that the plotting of power between the buyer and the supplier, and by that also the power and dependence perspective in phase two of Kraljic's working method, is not enough to deal with the specific context of the supply market. It follows the reasoning by previous researchers regarding Kraljic, that the supplier side is a disregarded element. Furthermore, SC's purchasing organisation works

Table 5, Relative within case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Scania		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)	Category 2	Category 3	Category 4
The organization and the purchasing department	A2	A3	A4
(A1) The degree goals and strategies of the purchasing department corresponds to the overall mission of the firm	B	B	
(A2) The degree of correspondence between the purchasing department and other functions of the company		B	
(A3) The degree of joint purchasing and global purchasing coherence in the company			
Relationship to the Kraljic matrix	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups	M	M	M
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers		B	B
(B3) Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			B
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials			
Strategic change	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change	N	N	N
(C2) Proactive and continuous in decisions about strategic change		N	H
(C3) Reactive and revolutionary in decisions about strategic change			N
(C4) Reactive and continuous in decisions about strategic change			

according to the concept of dual sourcing. They think it reasonable to have at least two suppliers sourcing the same commodity. This is also the reason why SC chooses not to work with world-class suppliers. In Kraljic terms regarding strategic positioning in the strategic quadrant, they strive to move to the left side and thereby the centre of the matrix. By having this position they to some extent exploit the relationship with the suppliers according to the Kraljic guidelines from such a position. However, the respondent also mentioned that suppliers situated in the strategic quadrant should be treated as partners. This means that the critique by Gelderman and Van Weele (2003) and Caniëls and Gelderman (2005),

that researchers always claim partnership in the strategic quadrant in the Kraljic matrix, is not valid in the case of SC. The authors stress that the strategic positioning (in the strategic quadrant) in phase three of Kraljic's working method, means strategies as balance, exploit and diversify, which not necessary mean partnership. This is line with the reasoning by Bensaou (1999), that investment in partnership can increase the risk and should be avoided in there is no required match for a partnership. Opposite to this arguing is the ideas by Håkansson and Persson (2007), who think that exploitation of different types of interdependencies can always be useful because the fact that collaboration creates more efficient activity structures. Phase four in the Kraljic matrix was nothing the respondent related to. However the respondent stressed the importance of logical strategic reasoning, similar to the consensus method in Gelderman and Van Weele (2002).

An extension to the reasoning above is that SC to some extent, not follows the strategic positioning in the strategic quadrant - exploit, balance and diversify. However, they have power dominance towards more or less all their suppliers due to the choice of not working with world-class suppliers. This is opposite to the recommendation by Gelderman and Van Weele (2002) that companies should strive to work with world-class suppliers, because these suppliers are performing better both technically and economically. In our

opinion there are three reasons why SC chooses not to collaborate with world-class suppliers – (1) SC is a world-leading company in the industry and are not that dependent on other actors in the industry, (2) it reduces the flexibility performing strategic changes and finally (3) the issue of owning the supplier’s tools, which is delimited when small/middle sized suppliers are contracted.

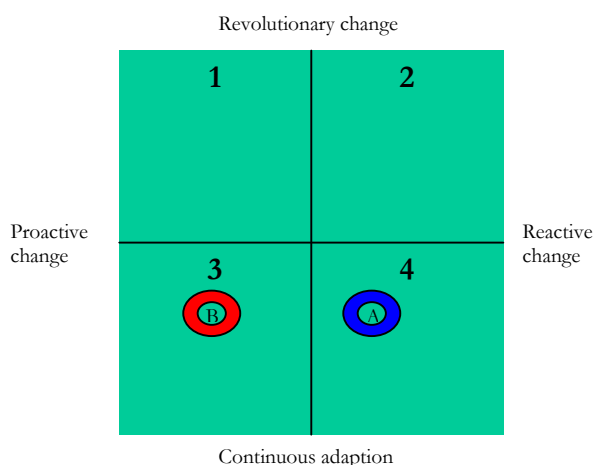
Taken together, and displayed in the table above, we judge the classification phase (B1) to be less more used and all the other categories in Kraljic’s working method. This also means that SC has a connection to all four phases but explicitly uses the classification phase to a larger extent. Phase two (B2), three (B3) and four (B4) are implicitly used (from the perspective of Kraljic) and the relative comparison between these categories are balanced. The fourth phase, long-term action plans and strategies, can be related to the constant dialogue the purchasing department has with the other functions within the company regarding adapting the company’s strategies to the changing needs of the customers. This is also why SC has chosen to become strong on the aftermarket, something that affected the purchasing department with the need of increased understanding of the procurement of spare parts.

4.3.5.3 Strategic change

Regarding guidelines for strategic movements the Kraljic matrix is not used to create changes in existing situations, the matrix is a consequence of changes and thereby secondary driven. The respondent means that in order to make decisions about strategic change, the purchasing department must understand the product and the technique behind the product. This is a fundamental element in SC’s engineering climate.

Besides the Kraljic matrix, different micro- economic analyses are made. SC has meetings every week to evaluate the suppliers’ quality of the delivered components/products, delivery status and possibilities for future product development and so forth. This can be seen as a proactive and continuous working methodology and visualized by the “B-circle” in figure 8. Quality and delivery problems are two important factors that can affect decisions about strategic change for critical items. The week meetings are complemented with more extensive monthly- and quarterly based meetings. In the long-run, and also mentioned earlier, SC uses a market oriented thinking regarding their purchasing strategy and strategic change are based on the future needs of their customers. Every commodity group leader evaluates their particular area and is thereby also responsible for their suppliers. Concerning the drivers of strategic change and in relation to the SC’s suppliers, the “A-circle” shows how SC changed from dual sourcing to single sourcing. This because of the trend of using single

Figure 8, Scania, Strategic change



sourcing as a sourcing method. However, as the respondent said – “I don’t know why we left the dual sourcing principle”, and a consequence was the re-introduction of dual sourcing. The first change can be seen as an environmental pressure for change while the other as a consequence of organizational reasoning to leave the single sourcing methodology. Reactive and continuous change can also be related to changes in the conformity of law due to for example changing emission standards. As can be seen from the figure above, revolutionary- proactive and reactive change are not plotted in the typology of strategic change, and are therefore not relatively compared to the other categories in the theme strategic change. Because of the strong tendency of SC always aiming for proactively and continuously work with strategic purchasing- and supply management tasks, this category (C2), is highly used compared to category C4 (reactive and continuous).

The finding in this study regarding SC and strategic change, is in line with the findings by Gelderman and Van Weele (2002) that the case company in their study always try to reduce the dependence on the contracted suppliers. Furthermore, the reasoning by Caniels and Gelderman (2005) also seems to be valid, that a specific purchasing strategy within each quadrant in the Kraljic matrix, can be associated with differences in power and dependence between the buyer and the supplier. The choice of not working with world-class suppliers support this reasoning due to the fact that it increases the flexibility when performing strategic change for critical commodities/suppliers. However, opposite to the findings by Caniels and Gelderman (2005), there seems to be a tendency that there is no supplier dominance in the strategic quadrant of Kraljic matrix. One reason for this could be that the company in this study and the companies in Caniels and Gelderman (2005) study, differs as regards the relative power position in the industry. SC is a strong actor in the industry and could therefore maintain a stronger power-position towards their suppliers.

4.4 Skanska

4.4.1 The company and the industry⁸⁰

Skanska (SK) is one of the biggest construction companies worldwide and has a strong position in Europe, United States and Latin America. SK provides innovative solutions through a close cooperation with their customers by combining worldwide expertise with local presence. SK has an 80 percent purchasing to sales ratio, i.e., approximately 100 billions. The purchasing to sales ratio may differ among SK’s business units because of sub-suppliers.

The respondent thinks that the car industry is far ahead and leads the purchasing development. The construction industry and SK is more fragmented compared to the car industry, which control the whole

⁸⁰ Bert-Ove Johansson, Skanska: Senior Vice President Purchasing (Interviewed 2007/2008), information in section 4.4.1

supply chain. However, the respondent stress that the car industry is selling relatively standardized low margin products, which requires an enormous focus on the supply chain. On the other hand, the construction industry can continue to have high prices because the customers do not have the same requirements as for example customers buying cars or consumer electronics. The profit for the construction companies has however not increased; it has been at the same level for many years. This means, according the respondent, that the industry, including SK, has an ineffective supply chain, which can be improved. SK's goal is to reach the standard of the car industry. The respondent further explained that if the company reaches the same standard as the car industry standard five years ago, it is good enough.

4.4.2 The organization and the purchasing department⁸¹

When the respondent joined the purchasing department three years ago (interview 2007), his first mission was to legitimate the purchasing organization at the corporate level. He became aware of this important organizational element when benchmarking other big industries. In order to improve the purchasing standard nowadays, SK needs to improve the overall purchasing knowledge in order to understand the sourcing process. The organisational design is an important aspect especially with cross-functional teams. However, the products being purchased are also an important factor affecting the structure of the purchasing department. Some strategically important products require a more central and coordinated approach, while others can be more decentralized. SK's purchasing department is also trying to follow the guidelines of the company's overall strategy, but the respondents admit that it can be difficult some times due to the fragmented nature of the industry. Furthermore, the purchasing department's ambition is to cooperate frequently with other functions in the company but as in the case of following the overall mission of the firm, the fragmented nature of the industry restrict the possibilities of doing so. However, they aim for a more synchronized cooperation with the other functions of the company. Though, SK cannot be coordinated in all business contexts and instead they have a balanced coordination, i.e., a global approach for certain categories of commodities (for example steel commodities). It is for example difficult to have a global approach towards the procurement of painting service and it is only possible for certain types of commodities, for example the purchase of concrete and steel.

The model SK uses regarding organisational design and thereby also as a complement to the Kraljic matrix, is the model by Rozenmeijer (2000). The model itself was the result of a study of many modern purchasing organisations, which portrayed some ideal types of purchasing organizations, but also many hybrid forms. Two important drivers is the degree of purchasing maturity and the degree of corporate coherence. The first dimension, *the level of sourcing maturity*, classifies organisations in different phases

⁸¹ Bert-Ove Johansson, Skanska: Senior Vice President Purchasing (Interviewed 2007/2008), all information in section 4.4.2

regarding the organisations purchasing sophistication. Retailers and automotive companies are seen as very sophisticated. The second dimension of the Rozenmeijer model is *corporate coherence* and it reveals how fragmented or coordinated an organisation is. Taken together the model demonstrates what organisational design is most suitable in a certain field of the model. In the case of SK, they cannot be coordinated in the purchasing of all commodity groups, but will instead have a balanced coordination and thereby a coordinated purchasing. This is highlighted by the figure in appendix VI.

4.4.3 Relationship to the Kraljic matrix⁸²

Despite the fact that SK cannot be seen as a mature purchasing organization, they do have a relation to the Kraljic matrix. SK is using the model as a simple and a pedagogical tool to get a rough segmentation of the products. The respondent thinks that the overall idea (maximizing the buying power towards the supplier and reducing the supply risk) of the matrix is relevant and useful. They use the dimensions in the Kraljic matrix (profit impact and supply risk) and the respondent declares that these dimensions do not constitute any direct problem. However, they do not make any calculations to plot the different commodities. Regarding phase two in Kraljic's working method, they do not systematically highlight the power dependence in the strategic quadrant between themselves as a buyer and the used suppliers. Therefore they only use the strategies of strategic positioning in phase three (balance, exploit and diversify), when it is seen as relevant. Though, the respondent does not think that the matrix is enough to manage all purchasing situations and therefore it is complemented with other models. It is important to know- and depart from the specific characteristics of the company.

SK is also for the time of the interview using influences from the research- and academic field. The purchasing consultants, Rosenmeijer and Van Weele, are helping SK improving the structure of the purchasing organization and adapting it to the specific conditions of the construction industry. SK also benchmarks different companies and they have employed people from for example Astra Zeneca and Ericsson, which give SK updated purchasing skills. This helps the company to establish a more sophisticated and matured purchasing organization in a much quicker pace. With this as a foundation, Rosenmeijer and Van Weele educate SK's strategic purchasers the fundamental ideas of category management, in order to systematically and effectively purchase the different commodity categories.

4.4.3.1 Skanska's suppliers⁸³

The respondent stress that there is a difference how industries look at the "rules of the game". For a company such as Scania, the rules are already set for the purchasing company and its suppliers and they know that the arena is global. The improved purchasing sophistication within the construction industry

⁸² Bert-Ove Johansson, Skanska: Senior Vice President Purchasing (Interviewed 2007/2008), information in section 4.4.3

⁸³ Bert-Ove Johansson, Skanska: Senior Vice President Purchasing (Interviewed 2007/2008), information in section 4.4.3.1

should at least in the start up phase, terrify the suppliers, because they are not used to act under such circumstances. Furthermore, at the time of the interview it was lack of material in the industry, due to the boom and therefore SK obtains a worse power position against the suppliers. The respondent stated that this could change the conditions with the suppliers and open up for strategic movements in the Kraljic matrix. Time is however, a more important factor for changing position in the matrix. The supplier market is also narrowed to where the building is located. For a category as painting, it is hard to find a global actor. Therefore it is not possible for Skanska to have a global approach and volume of scale for all their purchased products. However, the respondent stress that outsourcing is convenient if the marginal revenue is above the marginal cost. It reduces the risk and enables companies to focus on the right things.

4.4.4 Strategic change⁸⁴

Imaging SK having 12 000 factories compared to for example Scania with a limited number of factories. Additionally, SK's customers often decide the final result of the products manufactured in the factories. This means that different construction projects have an inherent choice of freedom regarding the final result of the product. Furthermore and as mentioned earlier, some commodity groups can only be purchased locally, which increase the width for a commodity group, for example painting services. Taken together, it is difficult to coordinate strategic change and a result is that the project leader often is in charge for these kinds of changes. This means that the Kraljic matrix is not systematically used for decisions regarding strategic change for strategically important products.

According to the respondent, you are able to distinguish some base structures in a building, for example that the concrete has the right quality, the lifts have the regular standard and so forth. A common denominator for almost all products is to some extent a dependence on steel. This concerns for example lifts, steel balks and white goods. SK is therefore, very sensitive to price changes in steel and these changes has a direct impact on the profit. However, the respondent declared that with SK's 12.000 projects each year worldwide, it can be difficult to distinguish what is really a critical product and thereby what is regarded as a strategic change for a certain commodity. Even a product with little value may be of importance if it is not delivered on time. For example lock on doors. This can lead to penalties if SK is unable to finish the project as agreed in the contract. Another issue can concern a certain kitchen brand for a residence project. In this case the customer has the final word and it is difficult for SK to be proactive vis-à-vis strategic changes. This more concerns the base structures of a building. However, SK has three to four people who proactively and continuously work with different types of micro-analyses, such as market- and risk analysis. This is fundamental to how SK makes decisions about strategic changes especially regarding strategically important products. Related to the Kraljic matrix, decision about strategic

⁸⁴ Bert-Ove Johansson, Skanska: Senior Vice President Purchasing (Interviewed 2007/2008), information in section 4.4.4

change must be seen both from a purchasing perspective and a change perspective. The respondent declared that from a change perspective the matrix becomes secondary, because it does not pay attention to change.

4.4.5 Within case analysis

4.4.5.1 The organization and the purchasing department

Before the respondent joined the purchasing department (2004), the purchasing organization was not legitimated at the corporate level. In Porter terms, the purchasing department was seen as a supportive part of the SK organization and didn't directly contribute to the company's competitive advantage. The model by Rozenmeijer (2000) regarding organisational design, facilitates the ambition of improving the overall purchasing- and supply actions. Because of the fact that SK cannot be coordinated in all business contexts, due to the fragmented nature of the industry, they instead have a balanced coordination in their purchasing- and supply actions. It is for example difficult to have a global approach towards the procurement of painting services and it is only possible for certain commodities, for example the purchase of concrete and steel.

Taken together the purchasing department strives to work according to the overall mission of the firm, but due to the "immature" purchasing organization and the complex nature of the industry it is difficult to have a total correspondence. The fragmented structure of the different construction projects also make it problematic to have a continuously dialog between the different functions of the company. Therefore, and deviating from the other companies in this study, there seems to be a tendency that the three categories (according to the overall mission of the firm, cooperate with other functions and strive for joint- and global purchasing) in the theme, *the organization and the purchasing department*, are not that easy to systematically follow. However, we cannot distinguish any direct deviations in the relative degree of use between the three categories, and therefore they are judged as being balanced.

4.4.5.2 Relationship to the Kraljic matrix

SK uses the Kraljic matrix as a pedagogical instrument to get a ruff segmentation of the different commodity groups, as is done in phase one of Kraljic's working method. This portrays the Kraljic model as a model of departure and it helps SK's immature purchasing organization to structure the purchasing activities in an efficient way. However, the matrix is also complemented with other models. On a general basis Skanska think that the ideas by Kraljic of maximizing the buying power towards the supplier and reducing the supply risk as much as possible, is a reasonable criteria. The respondent also thinks that the dimensions in the matrix do not constitute any problems but this opinion could also be a result of the fact that they do not make any calculations, to decide whether the importance of a commodity is measured

high or low. Gelderman & Van Weele (2002) mention that the drawback of such a working method is that the validation of measures is limited but also add that- “it is better be roughly right, than exactly wrong”.

Table 6, Relative within case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Skanska		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)	Category 2	Category 3	Category 4
The organization and the purchasing department	A2	A3	A4
(A1) The degree goals and strategies of the purchasing department corresponds to the overall mission of the firm	B	B	
(A2) The degree of correspondence between the purchasing department and other functions of the company		B	
(A3) The degree of joint purchasing and global purchasing coherence in the company			
Relationship to the Kraljic matrix	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups	M	M	M
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers		B	B
(B3) Phase 3: Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			B
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials			
Strategic change	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change	N	N	N
(C2) Proactive and continuous in decisions about strategic change		N	B
(C3) Reactive and revolutionary in decisions about strategic change			N
(C4) Reactive and continuous in decisions about strategic change			

Concerning negative aspects of the Kraljic matrix the respondent do not think that the matrix is enough to manage all purchasing situations and therefore must be complemented with other models. This is due to the specific characteristics that prevail in the construction industry. By the fact that SK does not disagree with the thoughts of power dependence between the buyer and supplier, they plot the power of suppliers. However, this not systematically and continuously done, which can open up for certain situations in the relationship that are not foreseen. This is similar to reactive and continuous change in strategy patterns. Furthermore and an extension from previous reasoning is

that the strategic positioning in phase three will be affected by this reactive way of thinking. A conclusion is that decisions about making strategic change regarding if a certain relationship should be balanced, diversified and exploited, will not be that simple. In our opinion the combination of a complex nature of the industry in conjunction with no measurements in the matrix, makes it even more difficult to perform a strategic and accurate purchasing- and supply job. With this in mind and in relation to the academic critique regarding the lack of guidelines for strategic movements in the matrix, the respondent doesn't think that movements in the matrix is a problem because the matrix itself is not used systematically. This also means that there is no chronological extension to phase four in the Kraljic working method. However, the constantly made micro-analyses implicitly increase the connection between the forth phase and the other phases in Kraljic's working method. Taken together, we interpret the relative comparison between the classification phase (B1) as being less more used than the other phases. Regarding the relative comparison between the other phases, we judge, with the above mentioned in mind, the relative use as being balanced.

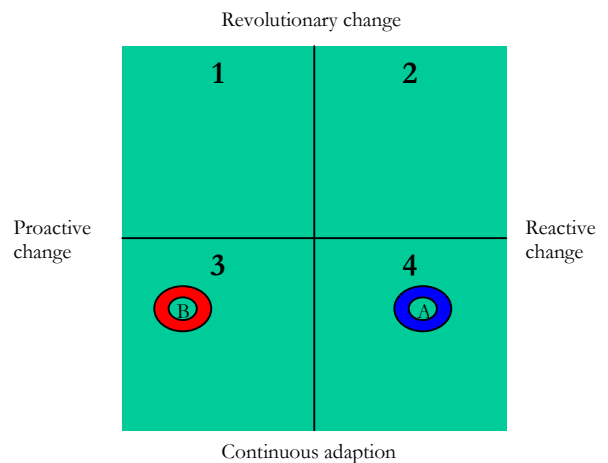
4.4.5.3 Strategic change

SK does not use the Kraljic matrix as a tool to make decisions about strategic change for critical items. However, three to four people continuously work with different types of micro-analysis and they depart both from a purchasing- and a change perspective. Decisions about strategic change are based on these micro-analysis. The change perspective seems to be something that SK prioritizes to a large extent. SK wants people in the organization that are seen as enablers and by that can handle changes. The respondent stated that the Kraljic matrix cannot handle the change perspective. The model by Rozenmeijer (2000) regarding organizational design is used to structure the different purchasing tasks for the different commodity groups and the different construction sites. As the model display in appendix VI, everything cannot be centralized, some items must be managed locally (painting services). All in all this make it difficult to coordinate strategic change for all commodity groups regarded as critical.

Because of the fact that some parts of a building can be seen as base structures, for example concrete and steel baulks and so forth, these commodity groups can be planned to a larger extent than items purchased locally. Therefore decisions about strategic change involving base commodity groups (concrete, steel), can be seen as proactive and continuous. This is highlighted in figure 9 by the “B-circle”. On the other hand products that are locally by nature or items that the customer affects because of design preferences, cannot be structured in the same

manner. Here decisions about strategic change are seen as more reactive and continuous (the “A-circle”). As can be seen from the figure above, revolutionary- proactive and reactive change are not plotted in the typology of strategic change, and are therefore not relatively compared to the other categories in the theme strategic change. Due to the fragmented nature of the construction industry, we interpret the relative comparison between C2 (proactive and continuous) and C4 (reactive and continuous) as being balanced. This because of the tendency of the construction industry, that the location site of a certain construction project, to some extent set the guidelines for the purchasing department. Another aspect is the customer’s inherent choice of freedom regarding design, which also increases the tendency of more reactive and continuous decisions regarding strategic change.

Figure 9, Skanska Strategic change



5 Analysis

The purpose of this section is to highlight the differences between the case companies and the different industries. The within analyses for the different companies are compared in a new table and further complemented with a table displaying the relative comparison of the complexity of the case company's industries.

5.1 Between case analysis

5.1.1 Industry complexity

When we choose the four case companies we wanted big Swedish industrial manufacturing companies with a sophisticated purchasing organization based on the specific conditions in their business contexts. A conclusion from the four cases is that there are both similarities and dissimilarities. Volvo Penta and Scania are matured and far ahead in the daily procurement work. Furthermore they operate in similar business contexts both manufacturing transportation vehicles, where the general structure of the purchasing system between the buyer and the suppliers is very standardized and efficient. Taken together the overall purchasing system is quite transparent. Volvo Penta and Scania are both world leading and technology driven companies, where product development and efficient manufacturing systems are extremely important in order to be competitive on the market. However, these two industries are not that complex compared to the industries of Astra Zeneca and Skanska. In our opinion the two latter companies operates in more dynamic business contexts, which makes the infrastructure of the purchasing system less transparent and more inefficient. Both companies have very specific industrial characteristics. The pharmaceutical industry with its legal restrictions and patents and the construction industry, which is partly fragmented by nature and partly, has a certain choice of freedom for the customer. Taken together

we interpret the relative comparison between Volvo Penta and Scania, regarding the complexity of the industries based on the chosen problem area, as being balanced. As regards Astra Zeneca and Skanska they have different kinds of complexities, and dependent on if a fragmented nature or an industry based on strict legal restrictions is seen as more complex, these two industries may be judged differently

Table 7, Relative between case analysis			
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced (no relative diff.) in comparison to the other category M = Less more (medium) in comparison to the other category H =High in comparison to the other category	Volvo Penta Astra Zeneca Scania Skanska		
Themes and categories (the relative comparison departs from the category in the left column; for example the first category, D1, is relatively compared to the other categories in the theme, D2 and so forth)	Category 2	Category 3	Category 4
The industry	D2	D3	D4
(D1) The complexity of Volvo Penta's industry	L	B	L
(D2) The complexity of Astra Zeneca's industry		M	B
(D3) The complexity of Scania's industry			L
(D4) The complexity of Skanska's industry			

in comparison to each other. However, based on the empirical material in this study and overall, we judge the complexity of the two industries as being balanced. In our opinion and in relation to Kraljic, Astra Zeneca and Skanska become more dependent on other models adapted to the specific conditions of the industry. The former company uses a supplier management multi-step working method and the latter company the organizational design model by Rozenmeijer (2000).

5.1.2 The organization and the purchasing department

Concerning the group of variables related to the organization and the purchasing department all four companies are aiming for linking goals and strategies of the purchasing department to the overall mission of the firm; have a correspondence with other functions of the company and aiming for joint- and global purchasing coherence. Skanska however, cannot be coordinated to the same extent as the other three companies because of the fragmented nature of the industry, and therefore have a balanced coordination in their organizational design in accordance to the model by Rozemeijer (2000). Based on the fact that Skanska aims for working according to all three categories in the theme, all four case companies have a relative balanced (no difference) comparison between the categories. This also means, and mentioned earlier in the within case analyses, that there is a tendency that the ideas by Kraljic (1983) and Gelderman and Van Weele (2003) are valid for all four case companies, regarding the importance that the purchasing department reflects the corporate set-up and that experienced portfolio users always include additional information concerning the overall business strategy.

However, there can also be certain problems even for a matured and sophisticated purchasing organization such as Volvo Penta's. If for example the production department has preferences for a certain supplier because of geographical proximity, this can dilute the plans for the purchasing department regarding a certain product. This may affect all the variables in the organizational group. This is in line with the critique by Kornelius and Van Stekelenborg (1994), regarding that Kraljic only focuses on one contingency – the power dependence between the buyer and the supplier, without reflecting on the situational characteristics.

5.1.3 Relationship to the Kraljic matrix

The four case companies use the ideas by Kraljic but not explicitly all four phases of Kraljic's working method. This also concerns the dimensions used when segmenting commodities. Volvo Penta doesn't use any of Kraljic's dimensions and Scania has replaced *profit impact* with *cost per year*. Furthermore, either Volvo Penta or Skanska make any calculations for segmenting the commodities in the matrix. Furthermore, and related to Kraljic's power dependence, is that both Volvo Penta and Scania are world leading companies in their industry, which makes them very powerful and they use this power advantage to in some way exploit

their supplier relationships. Even if it is not explicitly expressed in table 8 below, the supply risk dimension becomes more important from that point of view. Both strive to increase their flexibility and thereby

Table 8, Relative within- and between case analysis												
N = None in comparison to the other category L = Low in comparison to the other category B = Balanced in comparison to the other category M = Less more in comparison to the other category H =High in comparison to the other category	Volvo Penta			Astra Zeneca			Scania			Skanska		
	Category 2	Category 3	Category 4	Category 2	Category 3	Category 4	Category 2	Category 3	Category 4	Category 2	Category 3	Category 4
Themes and categories (the relative comparison departs from the category in the left column; for example the first category in the theme Strategic change, C1, is relatively compared to the other categories in the theme, C2 and so forth)												
The organization and the purchasing department	A2	A3	A4	A2	A3	A4	A2	A3	A4	A2	A3	A4
(A1) The degree goals and strategies of the purchasing departm. corresponds to the overall mission of the firm	B	B		B	B		B	B		B	B	
(A2) The degree of correspondence between the purchasing department and other functions of the company		B			B			B			B	
(A3) The degree of joint purchasing and global purchasing coherence in the company												
Relationship to the Kraljic matrix	B2	B3	B4	B2	B3	B4	B2	B3	B4	B2	B3	B4
(B1) Phase 1: the degree the Kraljic matrix is used for classification of different commodity groups	N	N	N	H	H	M	M	M	M	M	M	M
(B2) Phase 2: the degree the Kraljic matrix is used for handling the suppliers		B	M		B	L		B	B		B	B
(B3) Phase 3: the degree the company uses Kraljic's ideas of strategic positioning - exploit, balance and diversify			M			L			B			B
(B4) Phase 4: the degree the company uses Kraljic's ideas of setting up actions plans for critical purchasing materials												
Strategic change	C2	C3	C4	C2	C3	C4	C2	C3	C4	C2	C3	C4
(C1) Proactive and revolutionary in decisions about strategic change	N	N	N	L	N	L	N	N	N	N	N	N
(C2) Proactive and continuous in decisions about strategic change		H	M		N	M		N	H		N	B
(C3) Reactive and revolutionary in decisions about strategic change			L			N			N			N
(C4) Reactive and continuous in decisions about strategic change												

reduce the dependence on the suppliers. Exploiting power is seen as the main alternative. An extension from this is that both Volvo Penta and Scania choose not to work with world-class suppliers; thereby the power dependence perspective improves. In the case of Scania it is also about the legal rights of the tools used in the production, where world-class suppliers have higher demands of ownership.

This is often not the case for small- and middle-sized suppliers. However, both Scania and Volvo Penta complement phase two and three, regarding the supplier side of the matrix, with external evaluations in order to work proactively and continuously towards the suppliers and thereby not totally focus on the power dependence perspective. A general conclusion that can be made from this study is that the biggest problem with the Kraljic matrix is that it doesn't consider the supplier side. This is in line with earlier academic critique. Both Volvo Penta and Astra Zeneca, and in accordance to the multi-step working method by Olsen and Ellram (1997), explicitly complement the matrix by multi-step working methods. In the case of Astra Zeneca, they use the Kraljic matrix as a risk-analysis tool and complement it with a supply management multi-step approach, in order to find capable suppliers.

A remarkable tendency of this study is the lack of awareness of the Kraljic article's overall working method including all the four phases. The case companies focus on the matrix without mentioning the general ideas from Kraljic's article. If they did consider all four phases, it would be some tendency of a balanced relative comparison between the categories, as the relative balanced comparison in the theme *the organization and the purchasing department*. However, our interpretation of the four case companies is that there is not a balanced relative use between the four phases in Kraljic's working method. All case companies except for Volvo Penta, explicitly use the classification phase (phase one) and Astra Zeneca is the only company that has a high relative use of the classification phase in comparison to phase two (B2) and phase three (B3). This due to the fact that they use the Kraljic matrix as a risk-analysis tool and not as it's supposed to be used according to Kraljic's working method. They use the classification phase, but do not directly pay attention to the power-dependence perspective in phase two and three. This is taken care of by their own developed supplier management method, where the general thinking departs from category management. Scania and Skanska on the other hand, use the classification phase relatively less more than the other phases (B2, B3 and B4). This means that Scania and Skanska have a connection to all four phases but explicitly use the classification phase to a larger extent. Phase two (B2), three (B3) and four (B4) are implicitly being used (from the perspective of Kraljic) and the relative comparison between these categories are balanced (no relative difference).

Regarding Volvo Penta and Astra Zeneca, and in accordance to Scania and Skanska, the relative comparison between phase two (handling the suppliers) and three (strategic positioning – exploit, balance and diversify) are seen as balanced. However, the relative difference between phase two (B2) and phase four (B4) departing from phase two, is for Volvo Penta interpreted as being less more used and for Astra Zeneca as being less used (low) in comparison to the forth phase (long-term action plans). The reason why Volvo Penta has been judged using phase two less more than phase four is that they implicitly use the power dependence perspective as a tool for long-term action plans through the dimensions in the classification phase, stiff relationships and competitive pressure. This is also in line with the previous mentioned tendency that Volvo Penta and Scania, focus more on the power dependence perspective than the other two case companies. However, Volvo Penta doesn't really have the same systematical approach regarding Kraljic's working method, in comparison to Astra Zeneca, due to the fact that they don't use Kraljic's dimensions and more or less complement phase one (B1) and phase four (B4) with other models (the "goal matrix", the "road map" and the "capacity review"). Volvo Penta's use of Kraljic's working method regard a relatively more use of phase two (B2) and phase three (B3). Astra Zeneca uses phase two and three less than phase four due to the supplier management method and because that the Kraljic matrix is used as risk-analysis tool supporting long-term actions plans. This means that phase one (B1) and phase four (B4) are relatively more used than phase two (B2) and phase three (B3).

5.1.4 Strategic change

It became obvious that the Kraljic matrix is not enough to handle all purchasing situations. The model is not enough because it is secondary driven and a consequence of earlier made strategic decisions. Neither one of the four companies uses the matrix as a tool to perform strategic changes, which means that they cannot really relate to the general critique how changes should be plotted in the matrix. All of the four case companies use some type of strategic discussion complemented with different microeconomic analysis, in order to decide how to change the conditions for a certain commodity and/or supplier. This can be seen as similar to both Gelderman and Van Weele's (2003) findings regarding the consensus method, but also to the general ideas presented in the Kraljic article and related to phase four (long-term action plans). Kraljic stress the importance of continuously updating the matrix and complement it with different micro-economic analysis especially in the strategic quadrant of the matrix.

It also became evident that changes on the margin are not that interesting and the possibility of a big rapid change for a specific commodity is not that big. This means that the general critique by Gelderman and Van Weele (2002), that the Kraljic matrix doesn't provide guidelines for strategic movements of commodities and/or suppliers, is not considered as a major problem by the four case companies in this study. However, we spotted a tendency that Volvo Penta and Scania more pay attention to the power dependence perspective when strategic decisions are made. This is in line with the findings by Caniels and Gelderman (2005), that the choice of purchasing strategy within each quadrant in the Kraljic matrix can be associated with differences in power between the buyer and the supplier.

The last theme in table 8 above, gives evidence to two patterns regarding strategic change in organizational patterns. Because of the fact that the Kraljic matrix is not used as a tool for performing strategic change in the purchasing organization, this theme (strategic change) increased the understanding of how strategic change is performed. First of all, and mentioned previously, all companies strive to work proactive and continuous in their daily purchasing- and supply actions and secondly there are certain organizational changes that change the pattern in a reactive and revolutionary manner. Furthermore, the general characteristics of the pharmaceutical industry (legal restrictions and patents) and the construction industry (fragmented and certain choice of freedom for the customer), transforms the ambitions of working proactive and continuous and reactive and continuous strategic changes become more apparent in such industries. During these conditions other models must be used in order to cope with the complexity of the industry (the Kraljic matrix will not be enough). This is probably not that outspoken in transparent and standardized industries such as Volvo Penta's and Scania's. Taken together, and displayed in table 8, proactive and revolutionary strategic change (C1) is only plotted in Astra Zeneca's typology for strategic change. This strategic change is a major strategic change with origin in the organization without any direct environmental or organizational pressure of performing the change. We interpreted the merger between

Astra and Zeneca as suitable for this category. This merger transformed the purchasing organization to a more centralized and globally oriented one, which also improved the synchronization of the purchasing department within the rest of the company. In our opinion, the consequences of this strategic change improved the possibilities for the purchasing organization to become more mature and sophisticated. However, category C4 (reactive and continuous) is relatively less more used than category C1 based on the low frequency of mergers as a major strategic change. Furthermore, Volvo Penta was the only case company with a plot in the reactive and revolutionary quadrant (based on the chosen problem area and the time span). This because of the organizational change that was done due to the downturn in the 1990s. The purchasing organization transformed from a centralized organization to a decentralized one and this major strategic change was the solution to cope with the downturn as an explicit problem. The major drawback was according to Volvo Penta, the lack of volume of scale and the company reintroduced a centralized purchasing organization later on. This change improved the power dependence perspective towards Volvo Penta's suppliers.

The final remark regarding the theme strategic change, and mentioned earlier, is that all case companies have an ambition of working proactively and continuously regarding decisions about strategic change. However, a conclusion from this study is that the Kraljic matrix is not explicitly used as a tool to perform these strategic changes.

6 Conclusions and discussion

This section will be a short extract from the previous section, where both questions in the thesis' purpose will be answered. Other reflections will also be made and a normative working method will be recommended. In the final part of this section will have a general discussion about future research and other remarks regarding this thesis.

How do purchasing practitioners use Kraljic's purchasing portfolio model?

Our belief, is that when people related to purchasing pay attention to Kraljic, they refer on a general basis to the matrix that is presented in his article, regarding that purchasing must become supply management. However, the matrix is only one phase of four in the working method he introduced in 1983.

The answer to the question is that Kraljic's matrix, in this study, is more or less only used for segmenting different commodities in the clearly distinguished quadrants. This is also the purpose of the matrix, that the different categories in the matrix should be treated differently based on the dimensions profit impact and the supply risk. However, when looking at table 8 in section five, it becomes evident that the four different phases in Kraljic's working method are used implicitly. None of the four case companies use the

Kraljic matrix for all purchasing- and supply activities, especially not at the strategic level. This was highlighted in the Astra Zeneca case, where the Kraljic matrix was used as a risk-analysis tool at the tactical level. This meant that it was used for plotting commodities and not suppliers. However, the matrix was used as a starting point for understanding of how strategically important suppliers should be handled in the multi-step supplier management method. This also highlights this study's tendency that the supplier side is disregarded in the Kraljic matrix, which is in line with earlier academic critique. Furthermore, all case companies do not use the dimensions by Kraljic. Volvo Penta doesn't use any of the dimensions and instead adapt it to a supplier segmentation tool. Scania uses *cost per year* instead of *profit impact*, which might be a good alternative for companies that consider measurement in the matrix as a problem. Two of the companies, Volvo Penta and Skanska, do not use calculations for classifying the different commodity categories. However, only Skanska uses the proposed dimensions by Kraljic.

How is Kraljic's purchasing portfolio model used to perform strategic change for important categories?

The findings from this study highlights that the Kraljic matrix is not used to perform strategic change for important categories. The findings by Gelderman and Van Weele (2002), regarding how companies consider movements in the matrix, is not something that the four case companies consider in the overall procurement work. All companies think that the matrix is secondary driven, and that changes in positions are related to earlier made strategic decisions. However, we see this as an extension to the previous mentioned statement, that Kraljic's all four phases in his working method is not considered. If all faces were used systematically and in conjunction with Kraljic's suggestions of different types of micro-economic analyses, the Kraljic matrix itself, with the dimensions *profit impact* and *supply risk*, would be more useful for purchasing practitioners. This would also make it easier to use the matrix in the overall purchasing- and supply system, and movements in the matrix could be seen as more interesting, if it was connected to both internal- and external factors of a company.

A conclusion we make, based on this study, is that the disregarded supplier side is the foremost biggest barrier to overcome, when using the matrix and also when it comes to understanding strategic change. Sourcing management can therefore be seen as a very important knowledge area in order to cope with this problem, but also for connecting a company's internal activities with the external conditions on the supply market. Another interesting finding is the proactive and continuous strategic discussions that are made as a foundation to understand strategic change. Different types of micro-economic analyses back up this logical reasoning. Skanska has three to four people that continuously evaluate the purchasing actions. Astra Zeneca has brainstorming-sessions for finding hidden problems and opportunities. These strategic

discussions were used as a foundation in the evaluation of the multi-step supplier management method Astra Zeneca used.

6.1 Implications for theory and practice

The somewhat remarkable findings from the study, that the overall working method is generally disregarded leads us to suggest some normative steps that can both improve Kraljic's working method, but also enhance the understanding for purchasing professionals regarding how to better use the Kraljic matrix. The normative working method is presented bellow:

1. Strategic discussions

Use phase four (or the general ideas from this phase) in the Kraljic working method as a starting point. This phase deals with setting up handling plans, especially for strategically important commodities. During this phase it will be evident how a commodity shall be classified in the matrix, and it is in line with previous research, that the strategic discussions leading to classification of commodities is even more important than the plotting itself. Different micro-economic analyses (for example Porter's industrial analyses, risk-analyses and DuPont analysis) should be made proactively and continuously in order to update the matrix (all models used in this working method). These strategic discussions should be made on a weekly basis but adapted to the specific conditions of the industry. The process should be cross-functional in order to integrate with other functions of the company and relating the procurement work to the overall mission of the firm. Hypotheses regarding future conditions can be a dynamic element in the strategic discussions.

2. Plotting commodities

Use Kraljic's dimensions profit impact and supply risk for plotting the commodities, but not the suppliers. This will deal with the problem that the supplier side is disregarded. The plotting will be based on calculations with a clear connection to both dimensions. This considers the measurement problem but probably also increase the understanding of the effect of marginal strategic changes in the matrix. Furthermore, all other models used in the working method shall be connected to this matrix. If it is difficult to spot the revenue side of a commodity – use the dimension *cost per year* instead.

3. Evaluating the suppliers

Instead of only using plotting of buyer and supplier strength (as is done in phase two), this phase of the working method should be built on concrete supplier evaluation models with a direct connection to phase two in this working method. Ellram and Olsen's (1997) multi-step approach is a good inspiration source for this phase. They use the dimensions *relative supplier attractiveness* and *strength of the relationship*, as dimensions for supplier analysis. The power dependence perspective is only one

element among many in their analysis. This approach terminates phase two and three in Kraljic's working method. Furthermore, this phase will also deal with variables related (for example quality and product development) to the suppliers that are not that easy to measure.

All this should be handled with an IT-system adjusted for the specific conditions in the industry. This was something that Kraljic also mentioned 1983, that the working method must be supported by an effective IT-system in order to cope with complex business structures.

6.2 Critique of the study

What could we have done differently in the formation of this thesis? Well, our initial thought of comparing four case companies, was actually quite demanding regarding finding the right balance between the companies and by that tracking the deep structures we were looking for. The generalization part will improve, but only if these deep structures can be found. Two or three companies could maybe been a better alternative. One should also keep in mind the complexity of purchasing- and supply management and the different business elements affecting the course of actions. This makes it even more complex.

6.3 Suggestions for future research

We think that the following topics are interesting for future research:

- The purchasing relationship from the supplier side. How do suppliers evaluate the buyer – is sales everything?
- Combinations of different multi-step approaches (Kraljic as a part of this multi-step approach)
- IT-systems and how it affects measurement in purchasing portfolio models
- Triadic sourcing as a hybrid sourcing strategy and how it affects profit

6.4 Concluding discussion

The Kraljic matrix has been valid for 25 years and it seems to be some unanswered questions foremost among business consultants and academics regarding how it is used. This was also the main reason why this thesis was written. Researchers have tried to falsify the matrix and addressed certain flaws concerning direct- and indirect elements of the matrix. However, the ideas by Kraljic are still valid but, according to this study, the overall concept of the working method seems to be vanished in all the effort of falsification. In our opinion we think that the Kraljic matrix will be more justified if the matrix itself was seen in totality in relation to the overall working method. Furthermore, if the general critique is noted about the fact that the supplier is disregarded, the ideas by Kraljic can be reborn. This is much due to the fact the overall discussion in Kraljic's article, which is connected to the four phases, is very wide and adjustable through time.

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<http://www.industrivarden.se>

<http://www.volvo.com>

The interviewees:

Jan Sjö Dahl, Astra Zeneca
- *Sourcing Director Sweden (Interviewed 2007/2008)*

Stefan Hillsten, Volvo Penta
- *Purchasing manager (Interviewed 2007/2008)*

Roger Rytterström, Scania
- *Director Global Purchasing Parts, Chet metal, Chassis and Bus Components (Interviewed 2007/2008)*

Bert-Ove Johansson, Skanska
- *Senior Vice President Purchasing (Interviewed 2007/2008)*

Appendix I

Development of the purchasing function has gone from buying, via procurement to supply management.⁸⁵

Purchasing as in buying: purchasing activities and responsibilities that deal with buying the goods and services needed and making sure that the basic function of the items bought is acquired at favourable conditions.⁸⁶

Definition of purchasing: management of the company's external resources in such a way that the supply of goods and services, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities is secured at the most favourable conditions.

Purchasing as in procurement: deals with acquisitioning and optimizing the flow of materials (materials management, logistics), implying a widened role. Not only price but also volumes and time aspects are considered. There is a balance of buying large quantities to get a low price, but not too large to avoid costly stocks and not too small to avoid shortage and production downtime.

Purchasing as in supply management: includes previous tasks but also the information of supplier structures, the development of suppliers' capabilities (resources, knowledge), improving administrative routines and so forth. All is done in to reduce total cost – not only the price of the specific products bought, but also the cost of related activities like quality assurance and administration. It also includes the stimulation of creation of new opportunities in terms of new products and process innovation.

Sourcing: emphasis on strategic and tactical purchasing activities. This is a cross-functional process aimed at managing, developing and integrating with supplier capabilities to achieve a competitive advantage. This include both externally and internally oriented activities. A synonym to sourcing is purchasing and supply management, which also reflect the combination of externally and internally oriented activities.⁸⁷

Strategy: a pattern of organizational actions.

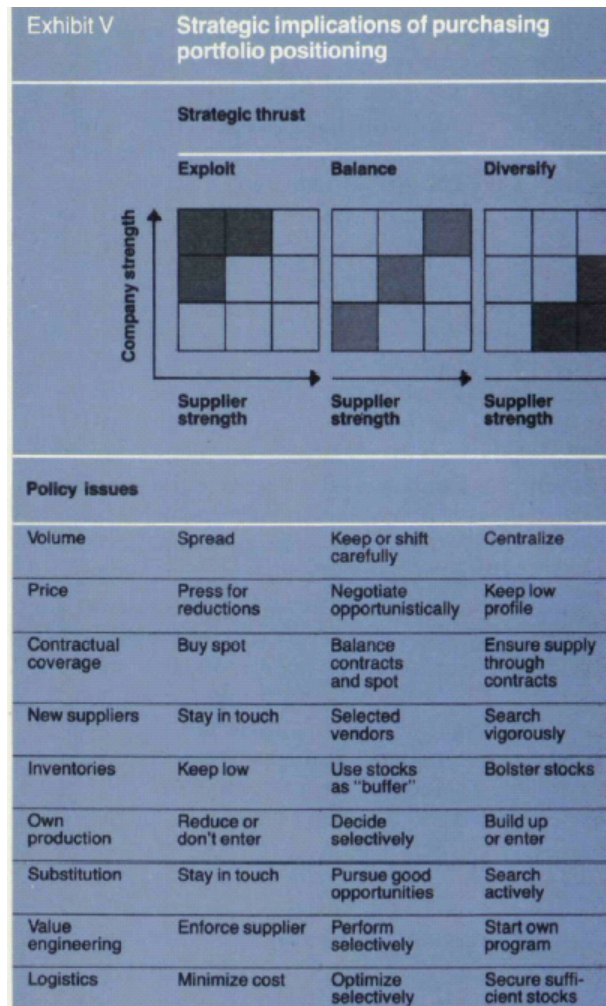
Strategic change: a change in the pattern of organizational actions.

⁸⁵ Axelsson, B, Rozemeijer, F., Wynstra, F., (2005), Developing Sourcing Capabilities, p 4, John Wiley & Sons Ltd

⁸⁶ Van Weele, A, (2005), Purchasing and Supply Chain Management, 4th edition, p 14-16, Thomson learning 2005

⁸⁷ Axelsson, B, Rozemeijer, F., Wynstra, F., (2005), Developing Sourcing Capabilities, p 7, John Wiley & Sons Ltd

Appendix II



Source: Kraljic, P. (1983), Purchasing must become supply management, p 111, Harvard Business review

Appendix III

Portfolio models	Classification dimension	Categories	Action plans	Phases in developing a supply strategy
Kraljic (1983)	Importance of purchasing complexity of supply market	<i>Materials/ components.</i> Non-critical items, Leverage items, Bottleneck items, Strategic items	Exploit Balance Diversify	1. Classification 2. Market analysis 3. Strategic positioning 4. Action plans
Van Stekelenborg and Kornelius (1994)	Control need of the internal market demand. Control need of the external supply market	<i>Supply situations</i> Plain supply situation, Internally problematic supply situation, Externally problematic supply situation, Complicated supply situation	Purchasing as effort manager, Purchasing as demand manager, Purchasing as supply manager, Purchasing as integrative manager	1. Classify supply situation 2. Determine purchasing activities
Olsen and Ellram (1997)	Difficulty of managing the purchasing situation. Strategic importance of the purchase	<i>Purchases</i> Non-critical, Bottleneck Leverage, Strategic	Strengthen the relationship Improve the supplier attractiveness/the performance of the relationship. Reduce the resources allocated to the relationship	1. Analysis of the company's purchases 2. Analyse the supplier relationships 3. Develop action plans
Bensaou (1999)	Buyer's specific investments. Supplier's specific investments	<i>Relationships</i> Market exchange, Captive buyer, Captive supplier, Strategic partnership		1. Classify relationships 2. Identify contextual profiles 3. Design management profiles
Gelderman and Van Weele (2000)	Supplier's dependence. Buyer's dependence	<i>Supply strategies</i> Efficient processing, Exploit power, volume insurance, balanced relationships		

Source: Dubois, A., Pedersen, A-C., (2002) Why relationships do not fit into purchasing portfolio models – a comparison between the portfolio and industrial network approaches, European Journal of Purchasing and supply management

Appendix IV, Volvo Penta, Variables

Evaluation before a decision is taken in order to start a new supplier relation for VP.

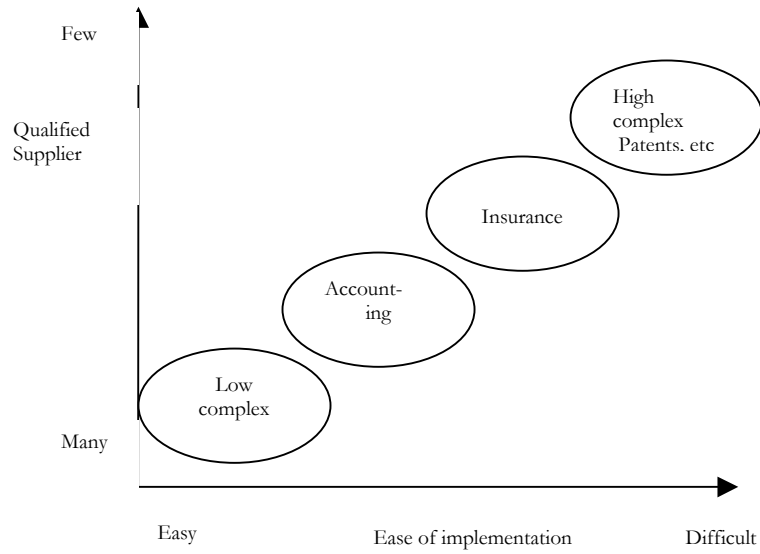
- Company profile
- Management
- Environment
- Quality
- Logistics
- After-market
- Competence
- Product development
- Finance
- Productivity
- Sourcing

The variables that are included in the goal matrix and also regulate the relation are:

- Contractual status
- Evaluation status
- Quality system
- Environmental certificate
- Quality performance
- Delivery performance
- Cost development (negotiation results)
- Cost development with reference to design changes etc.
- Cost development with reference to raw material
- Payment conditions
- Warranty cost
- Suppliers general contribution to Volvo Penta (technical know how etc)
- Supplier status (Preferred, Uncertain, New or Phase out..)

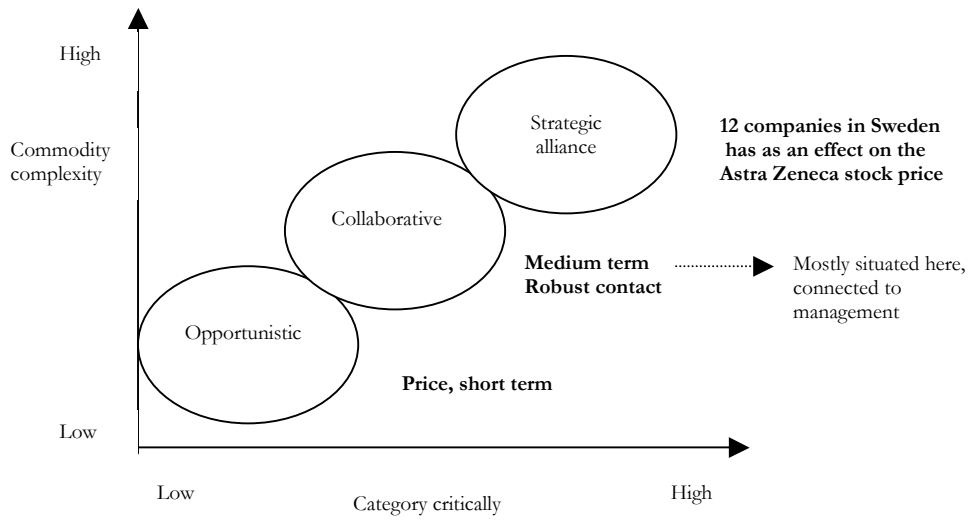
Appendix V

Appendix V, a) Qualification of suppliers and ease of implementation



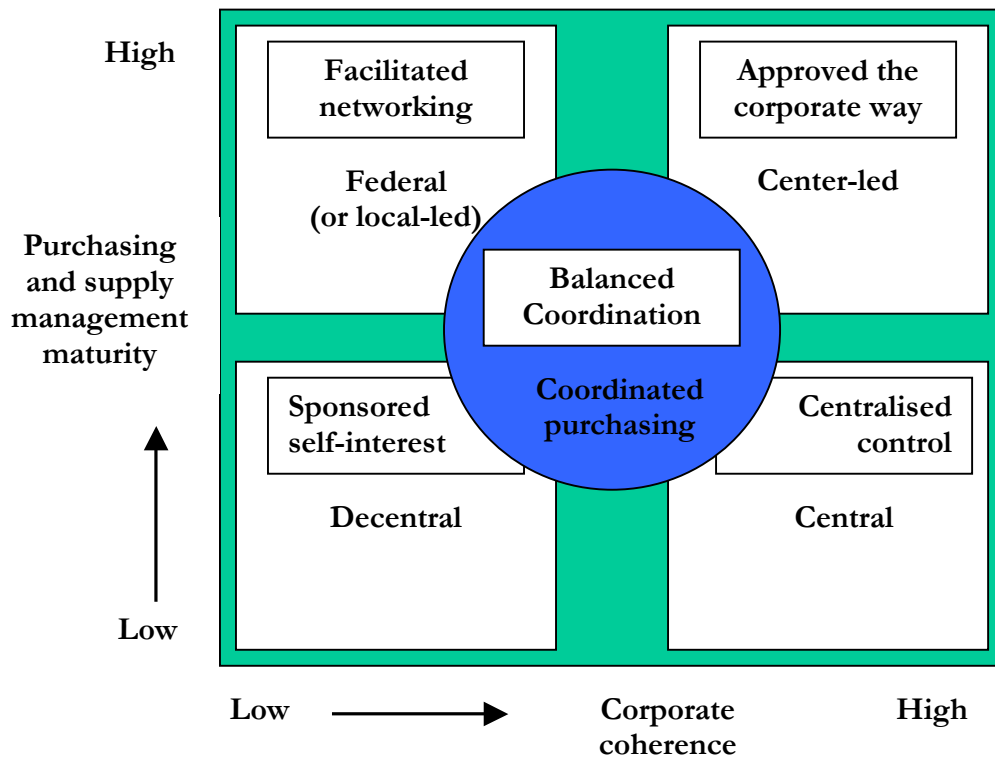
Source: Astra Zeneca 2007

Appendix V, b) Commodity complexity and category criticality



Source: Astra Zeneca 2007

Appendix VI



Source: Björn Axelsson, Stockholm School of Economics, Roozenmeijer (2000)