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UNIVERSITY OF TECHNOLOGY

Evaluating the Effects of the Purchasing Academy at Volvo Cars

Master's thesis in Supply Chain Management

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Report no E2014:033

Division of Industrial Marketing

Department of Technology Management and Economics

CHALMERS UNIVERSITY OF TECHNOLOGY

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Abstract

Purchasing is a business function whose strategic role has increased, since purchasing constitutes a major part of a firm's turnover. Purchasing also handles external as well as internal interactions. Volvo Cars, an automotive manufacturer, has realized the importance of purchasing, and thus established the Purchasing Academy to support the goal of having the best purchasing unit in the industry.

The purpose of this master thesis is to evaluate the effects of the Purchasing Academy's activities on the purchasing unit at Volvo Cars, in order to assess what activities that resources should be allocated to.

To find out how Purchasing Academy affects the performance of the purchasing unit, a qualitative case study has been performed in order to capture opinions expressed by managers at the purchasing unit. The theoretical framework, focusing on purchasing in a supply network perspective, was compiled in parallel with the empirical data collection, and the information has been continuously updated when necessary, as a result of systematic combining.

The empirical data builds mainly on 54 interviews with managers of the purchasing unit at Volvo Cars both in Sweden and China. The data contains information about the purchasing organization and Purchasing Academy's past activities, in the form of trainings, as well as what activities or skills that are needed to improve purchasing performance. 20 skills and training activities that could bridge existing competence gaps and 12 training-related issues that could improve the effects of Purchasing Academy's work were identified.

Purchasing Academy should primarily invest in following skills and activities: Communication Skills, Continuation of Existing Courses, Internal Understanding, IT and MS Office, Negotiation Skills, Strategic Competence and Supplier Understanding. Furthermore, Purchasing Academy should consider the internal or external training content, types of training activities and adopt training reflection to a greater extent. More coaching and support from Purchasing Academy as well as offering training packages for purchasing employees are also needed.

Purchasing Academy's activities could enhance the purchasing performance, however it should be remembered that purchasing cannot be done in isolation and is affected by many factors. It is thus important for the purchasing unit to manage internal interfaces, e.g. towards R&D, and external interfaces, e.g. towards suppliers, in order to improve the purchasing performance. Training should therefore be given to provide an understanding of interfaces and ways to handle the interfaces.

Keywords: *purchasing, purchasing academy, automotive industry, network, interfaces, competence, purchasing performance*

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Finally, we would like to thank the managers at the purchasing unit at Volvo Cars, who have taken their time to participate in our interviews. The interviews have not only provided us essential information for the thesis, but also given us an understanding of purchasing in the complex automotive industry from different aspects.

Gothenburg, June 2014

Frida Henrysson

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1 Introduction

Purchasing is commonly and increasingly considered a strategic function within companies (van Weele 2010). One of the reasons is that the function often is responsible for a major part of the costs of the customer value offering. Hence, purchasing has a great impact on the profitability of the firm and consequently purchasing's performance is critical for the overall firm's success. Purchasing has many interfaces both internally within the company and externally towards the suppliers (Gadde et al. 2010). Thus, purchasing is dependent on many other parties, and consequently the interactions affect the purchasing work. The thesis will present and discuss Purchasing Academy's work to improve the competency within the purchasing unit at Volvo Cars and how Purchasing Academy's activities affect the purchasing performance. This chapter will give an introduction to the thesis through presenting Background, Purpose, Problem Analysis and Delimitation.

1.1 Background

"Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying service level requirements" (Simchi-Levi et al. 2003, p.1). Thus, it includes business activities such as manufacturing, marketing, logistics and purchasing (Quayle 2006). In order to achieve strategic fit and thereby gain competitive advantage, the strategies of the business functions need to be aligned with the overall supply chain strategy (Chopra & Meindl 2013).

How a firm performs is related to its competitive advantage and goal achievement (Grönhaug & Nordhaug 1992). The firm attains goals and results by the value-creating activities, which are all of the company's internal activities (Porter 1985) that are carried out and these are not only costly, but also require competence if the objectives are to be achieved (Grönhaug & Nordhaug 1992). The competitive advantage is connected to the resources, since activities need to be performed for goals to be achieved. By using these resources sensibly and continuously develop them, the company can retain its competitive advantage and ultimately accomplish its goals.

The way firms operate has been affected by developments of industrial activities, including techniques and concepts such as just-in-time, build-to-order manufacturing and total quality management (Gadde et al. 2010). These trends, as well as increased outsourcing, has increased the importance of the supply side, resulting in purchasing having a more strategic role, as opposed to the traditional one which embraces the process of buying. With firms focusing more on their core competences and increasing the outsourcing, they rely more on purchasing and suppliers. As a result, purchasing has come to account for a larger part of the total costs, often 70-80%. However, the strategic significance of purchasing does not only depend on its financial impact, but also on its extended role. In addition to products, suppliers can also provide other resources, such as technical capabilities and it is thus crucial to manage the interfaces with suppliers (Araujo et al. 1999). Purchasing and the supply side have to take this responsibility as they represent the interfaces of the company upstream the supply chain (Gadde et al. 2010).

According to van Weele (2010), purchasing's responsibility in a firm is to handle external resources in a way that supplies all need for goods, services, knowledge and capabilities to facilitate the company's primary and secondary activities. Furthermore, purchasing management also involves handling of all supplier relationships in a way that supports the overall goal of the firm but also continuously improves the internal purchasing process. This means that purchasing management spans between internal and external aspects, adding to the importance of purchasing in firms (Bocconcelli & Håkansson 2008; van Weele 2010).

Volvo Car Group, hereafter referred to as Volvo Cars, is a company within the automotive industry with headquarters in Gothenburg, Sweden. The company is a subsidiary to Zhejiang Geely Holding Group Co., Ltd, China (Volvo Car Group 2013). The manufacturing of the cars is performed in the plants in Torslanda (Gothenburg), Ghent in Belgium, Chengdu in China, Chongqing in China, and Kuala Lumpur in Malaysia. In 2013 Volvo Cars employed around 23,200 people and sold almost 430,000 cars. The company's 2020 vision is to provide cars people want, be a lean nimble company, have a top tier premium auto brand perception, and be the employer of choice. Fulfillment of those goals will result in sales of over 800,000 vehicles globally and gain top car industry profitability. To reach the goal of top car industry profitability, costs have to be reduced. One large portion of the cost is made up from purchases. An investigation made by an external consultancy firm concluded that the purchasing activities at Volvo Cars could be improved and be performed with more properly allocated resources. Furthermore, due to the relatively small size of Volvo Cars compared to its competitors, the importance of a high-performing purchasing unit is even more salient. As a result of the investigation, Purchasing Academy was established as a group within the purchasing unit in April 2013 with the goal to make the purchasing unit at Volvo Cars the best one in the industry. Volvo Cars' purchasing function contains several departments located in two places, Gothenburg and Shanghai, China. Purchasing Academy is responsible for the competence improvement in both Gothenburg and Shanghai.

Currently, Purchasing Academy performs activities such as role development, benchmarking and internal courses to reach the goal of increasing the competence and knowledge of the purchasing employees. Improving the competence of the purchasing employees supports an improvement of the overall purchasing performance and enables Volvo Cars purchasing unit to achieve its long-term goal – to become the best purchasing unit in the industry. Although Purchasing Academy is relatively new, it is important to track and evaluate the effects Purchasing Academy has on the purchasing unit in order to determine where future investments should be made, which has led to the need of this master thesis.

1.2 Purpose

The purpose of this master thesis is to evaluate the effects of Purchasing Academy's activities on the performance of the purchasing unit. An additional goal is to understand where resources should be allocated in order to achieve optimal output and realize Purchasing Academy's objectives. The study aims to contribute to the process of Volvo Cars becoming the best purchasing unit in the industry.

1.3 Problem Analysis

Companies view the supply operations and their role in the supply network differently. Anderson et al. (2009) discuss different purchasing orientations, which are philosophies guiding

purchasing-related decisions and indicating the scope of purchasing and the span of influence in the supply network. A company can deploy several orientations at once depending on for example category of acquired products or services. The authors define three such orientations; buying, procurement, or supply management. The buying orientation is the narrowest orientation, which implies a focus of efforts on cost minimization in a single transaction of a product or service. The procurement orientation widens the scope of the purchasing function and aims to reduce the total costs of ownership of an offering, which commonly is a bundle of products or services. The supply management orientation is the broadest orientation, which strives to gain the greatest value relative to price in a close relationship with the supplier. Thus, the orientations include the company's external environment in the supply network, which make the purchasing operations more or less affected by the suppliers. Since the company performance is dependent on the operations on the supply side and as purchasing can be seen from different orientations, the company performance is affected by the orientation purchasing adheres to. Thus, the company performance can be derived from internal as well as external purchasing operations.

In addition to the different orientations of purchasing, there are also different roles. The emerged importance of purchasing implies a change of view and behavior of the function. The traditional view can be entitled as isolated buying decisions, while the strategic view can be termed as management of supply networks. When it comes to isolated buying decisions, purchasing is made on a transactional and isolated basis and the goal is to find the best supplier for what is desired in a particular moment. In this case, the role of purchasing is more of an administrative and clerical nature. Management of supply networks implies three strategic roles of purchasing. The first one is related to cost reduction and the goal is to reduce the total costs of the firm rather than the price in a single transaction. The second role is related to development and innovation, where purchasing should get involved in internal development projects early and the ultimate goal is to optimize the opportunities to utilize external resources. The third strategic role of purchasing relates to time and space, which implies a holistic view of what the supply side is involved in. When making purchases, the buyer will benefit from consolidation to gain economies of scale. In order to make purchasing efficient as well as effective, a supply network perspective is required. This is due to the benefits that could be gained when crossing boundaries of the buying firm and the interdependence between the actors in a network. (Gadde et al. 2010)

The orientation of purchasing and its role in a firm has an impact on what effect the function has on the performance of the firm. Thus, the first research question is related to the purchasing organization of Volvo Cars, its structure, roles and goals.

1. How is the purchasing organization at Volvo Cars structured and what are its key roles and goals?

According to Gadde et al. (2010) purchasing's main mission is to exploit available resources in the supplier base in the most optimal way. This requires the firm to organize and combine resources both internally and externally. Consequently purchasing identifies, combines and connects different resources at different locations. Educating employees can be seen as an investment in human resources, which affects the internal resources. Changes in the internal resources generate changes in the external resources as well (Bocconcelli & Håkansson 2008).

Therefore, in the context of this thesis, the effects of Purchasing Academy activities will have different impacts depending on what kinds of orientations the purchasing unit takes.

According to van Weele (2010), the performance of the purchasing operations is made up by the purchasing effectiveness and efficiency as illustrated in *Figure 1*. Purchasing effectiveness refers to the extent to which previously set goals are met, whereas purchasing efficiency refers to the difference between planned and actual costs for achieving the previously set goals. Further, van Weele (2010) categorizes the effectiveness into cost, quality and logistics dimensions and efficiency into organization dimension. Within these four dimensions different performance measures can be deployed to continuously or incidentally evaluate the performance of the purchasing unit. To evaluate the effects that Purchasing Academy creates, it is necessary to examine how the given performance dimensions, i.e. cost, quality, logistics and organization, are affected.

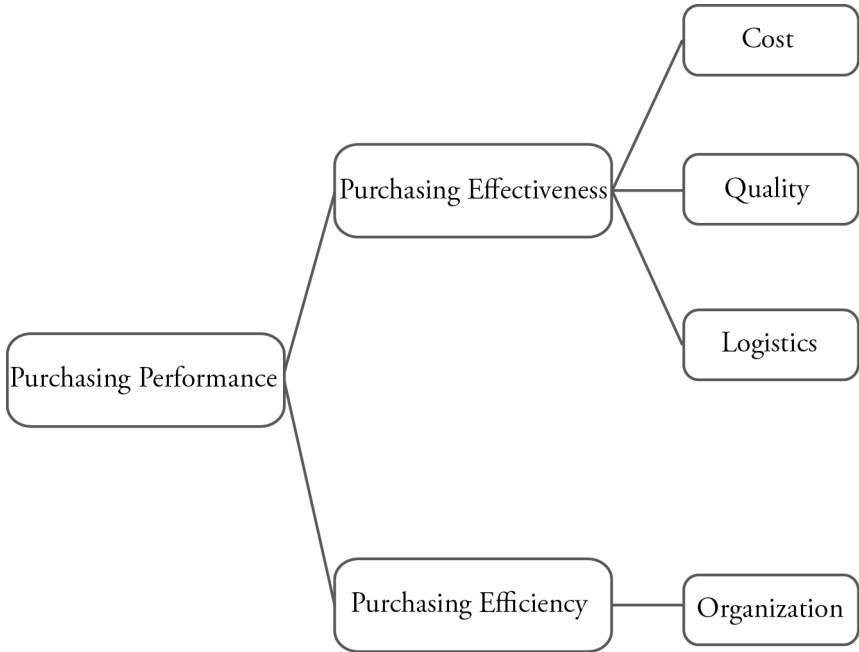


Figure 1. Purchasing Performance and its constituents. Freely Adapted from van Weele (2010, p.306).

Another important issue is to identify possible gaps between what the Purchasing Academy offers and what the purchasing managers seek. The purchasing managers are believed to know what competencies the purchasing unit lacks and it is vital to identify these needs in order to match Purchasing Academy’s supply with managers’ demand. Matching the training supply with managers’ demand could ultimately lead to worthwhile resource allocations, thus affecting the performance of the purchasing unit. Hence, the second research question is:

2. How could Purchasing Academy’s activities influence the purchasing unit and its performance?

Gadde et al. (2010) argue that purchasing should be seen from a network perspective. The perspective implies that firms form networks by operating in interlinked business relationships. Hence, the firms are related and interact with each other. Bocconcelli and Håkansson (2008) discuss that an internal change implies changes to the external environment as well. Therefore,

firms are dependent on other firms' actions. Similarly, the purchasing unit is affected by the decisions from the external environment, which implies that external actors likely impact the purchasing performance. It is important to examine purchasing performance in a wider context in order to assess Purchasing Academy's effect on purchasing performance. Hence, the third research question is:

3. In a wider context, how could the purchasing performance be affected by Purchasing Academy and the external network?

1.4 Delimitations

For the study to be feasible, the scope needed to be narrowed and some delimitations were made. The study only analyzed the performance of Volvo Cars and thus excluded activities derived from the external environment, such as the suppliers, since such an analysis would not be feasible for the project duration. More specifically, the study only gathered data from the purchasing unit at Volvo Cars, i.e. others units within Volvo Cars were excluded. Within the purchasing unit, data was only gathered from managers and not from the actual people taking the trainings, i.e. buyers and cost estimators. The reason was to cover as much of the purchasing organization as possible while conducting a feasible number of interviews. As managers were believed to possess a holistic view of the effects from trainings within their organization unit, they were selected as interviewees. Even though Purchasing Academy manage various activities to improve purchasing competence the focus of this thesis have been on the trainings related activities.

2 Theoretical Framework

This chapter aims to provide an understanding of theories on purchasing and supply management. The knowledge is essential for the analysis of the case study, and how the theory will be used will be further described in Chapter 3, Methodology. The chapter starts with a description of Purchasing, concerning its goals and roles, organization of the unit, purchasing competence and purchasing performance. Thereafter, purchasing is discussed from a network perspective in Supply Network Approach, as the emerging strategic role of purchasing requires a new way to frame the supply side of a firm. The chapter ends with a description of the Internal and External Interfaces of purchasing.

2.1 Purchasing

There are several similar terms defining a company's acquisition of products. Purchasing and procurement are two examples of such, which are commonly used interchangeably in the literature (van Weele 2010). Purchasing is defined as *"the management of the company's external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities is secured at the most favorable conditions"* (van Weele 2010, p.8). The procurement concept takes a more strategic point of view as it expands the scope of purchasing (Miemczyk et al. 2012), which also van Weele (2010) argues in favor of. According to van Weele (2010, p.6) procurement relates to *"all activities required in order to get the product from the supplier to its final destination [...] allowing companies to make supplier selection decisions based on total cost of ownership (TCO), rather than price"*. Similarly, Murray (2009) argues that the procurement concept includes the purchasing cycle and the decision of make-or-buy. Key focus will further on be on purchasing, however some procurement dimensions will be discussed.

2.1.1 Purchasing Goals and Roles

The general goal of the purchasing organization is to *"obtain the right material, in the right quantity, from the right source at the right time, at the right place and at the right price"* (van Weele 2010, p.307). Thus, purchasing's responsibility, i.e. role, is to handle the external resources in a way that supplies all need for goods, services, knowledge and capabilities to facilitate the company's primary and secondary activities (Monczka et al. 2004; van Weele 2010). Furthermore, the responsibility also involves handling of all supplier relationships in a way that supports the overall goal of the firm but also continuously improves the internal purchasing process.

Purchasing is becoming more important, which implies a change of view and behavior of the function (Gadde et al. 2010). Ellram and Carr (1994) argue that the purchasing function is developing towards an important role as contributor to a firm's strategic success. This is supported by Cavinato (1999) who states that purchasing is in a transition phase from a passive buyer of goods and services to an active contributor to the company competitiveness. Similarly, Paulraj, Chen and Flynn (2006) and Gadde, Håkansson and Persson (2010) emphasize that purchasing constitutes an increasingly strategic role within firms, through the shift towards supply chain management. Hence, purchasing has changed from buying to procurement and supply management. This shift can be illustrated through three purchasing orientations (Anderson et al. 2009) and three purchasing roles (Gadde et al. 2010). The orientations as well

as the roles impact the effect purchasing has on the overall firm performance. The orientations will be discussed first and thereafter the roles.

The purchasing orientations, *buying, procurement and supply management*, are the philosophies guiding purchasing-related decisions and defining purchasing’s scope of influence in the supply network. A company does not necessary deploy one and the same orientation for all purchases made, but can utilize different orientations depending on the product or service bought and hence the goals diverge. The *buying orientation* represents the smallest scope of influence as it solely covers the company internally, see *Figure 2*. The focus is to minimize the price paid in each transaction of commonly only one product or service. The primary over-all objective is to reduce total annual spending. The *procurement orientation* broadens the scope of the role in the value network. The emphasis is instead to reduce the total cost of ownership for an order, which often consists of a set of products and/or services. A reduction of total cost of ownership comprises purchasing price as well as expenses during the product life time. The *supply management orientation* aims to generate the greatest value in relation to price through close collaboration with the suppliers. The orientation demands integration with other functions internally as well as other actors in the wider network. (Anderson et al. 2009)

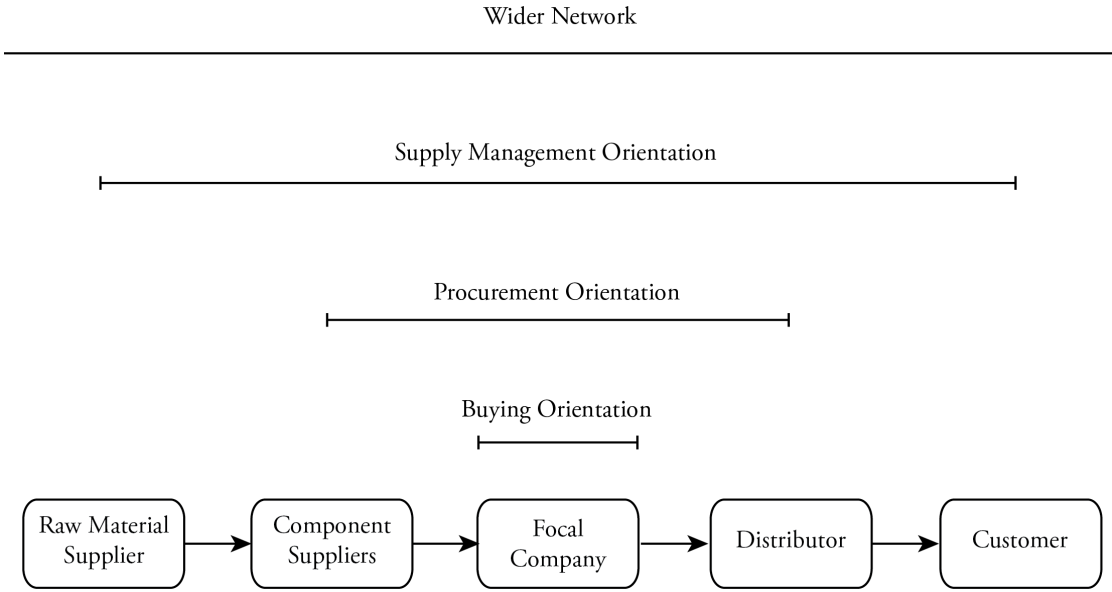


Figure 2. The different orientations in a firm. Freely adapted from (Anderson et al. 2009, p.97)

The purchasing roles are derived from the switch from the traditional view of isolated buying decisions towards the strategic view of supply network management. The roles that purchasing should undertake are *rationalization, development and time and space*. The *cost rationalization role* concerns understanding that the performance is not maximized when the purchasing cost is minimized in a single transaction. Instead, a wider scope of the purchasing should be taken, as it normally includes a series of transactions over time and relates to other simultaneous transactions. There are many costs associated with purchasing that are affected by the purchasing behavior. These costs can be included in a total cost approach, which is a better measure on performance. Further, the supplier situation should also be taken into account as the buyer approach affects the costs of the supplier, which will impact the price. Giving the supplier some freedom concerning the formation of the solution enables potential for cost reductions.

Lastly, analyzing the total costs in co-operation with the supplier gives an indication of supplier competences that purchasing could enhance and a possibility for adjustments of the purchased goods or service to better fit the buying company. The *development role* results from companies becoming more specialized and hence companies rely to a greater extent on supplier to obtain development and innovation in areas outside their specialization. Purchasing has to be involved early in the R&D process in order to introduce suppliers and get access to their capabilities. The *time and space role* concerns the need to extend each purchasing decision in time as well as space since it relates to past and future purchases as well as other purchases in parallel. The time perspective should be long-term in order to benefit from the supplier capabilities as such investments pay off over time. The space perspective should concern consolidation of items to one supplier in order to reduce the number of suppliers and benefit from economies of scale. Additionally, in order to ensure effectiveness of rationalization and development a connection of different suppliers should be encouraged. Altogether this enables a supply network perspective, which should improve performance. (Gadde et al. 2010)

2.1.2 Purchasing Organization Design

The concept organizational design refers to the process of assessing and selecting a structure of an organization (Trent 2004), which includes formal system of communication, division of labor, coordination, control authority and responsibility required in order to achieve the organization's goals (Trent 2004; Robbins 1990; Jones 1998). Design is commonly considered as solely the organization's structure, but it is a broader concept covering more than just the lines and boxes on the organizational chart. Glock and Hochrein (2011), referring to Picot, Dietl and Franck (2002), say the structure of an organization is one main driver of efficiency since it includes assignment of tasks to members of an organization and allocation of resources to organizational entities. The structure also plays an essential role for the competitiveness of the organization, as it has to match the competition. This is especially the case in a company environment with global competition and increasingly demanding customers.

Glock and Hochrein (2011) argue that the most commonly used determinants of the purchasing organization design are company-internal as well as company-external. The company-internal factors are organization characteristics, product characteristics and purchase situation, whereas the company-external factors relate to the organization's environment. In order to achieve a high performance, there has to be a fit between the internal and external factors. Similarly, van Weele (2010) discusses that the structure of purchasing to a large extent depends on company characteristics, industry type and characteristics of purchased products.

2.1.3 Purchasing Organization Structure

The structure of a purchasing organization have in prior research been described by different structural variables, namely standardization, specialization, configuration, involvement, formalization and (de-)centralization. The most commonly discussed variables in prior literature are *formalization* and *(de-)centralization*, which together with *configuration* will be further discussed as they are most relevant for this study. (Glock & Hochrein 2011)

The *formalization* variable concern the extent to which rules and procedures steers the behavior of the organization members (Hickson 1966; Robbins 1990). High formalization indicates that the tasks have little variability (Robbins 1990) and the employee has little say and impact on how the task should be conducted (Glock & Hochrein 2011). A higher degree of formalization is

reached by defining roles and authorities or defining rules that regulate decision processes, communication ways, or information processing (Hall et al. 1967). High formalization increases the standardization of work, but can also imply a reduced motivation of the employees (Glock & Hochrein 2011).

The *(de-)centralization* variable is defined differently between single-unit companies and multi-unit companies (van Weele 2010; Glock & Hochrein 2011). Since the study describes a multi-unit company, solely theory on the multi-unit case will be described. The two extremes of purchasing structures are the centralized and decentralized structures, but mixes of the two also exist, such as hybrid structure and cross-functional sourcing teams (van Weele 2010). The description of structures will only cover the centralized structure, as it is the most relevant for this study. Arnold (1999) argues that the degree of centralization is determined by the accumulation of departments, procurement processes, and responsibilities. Further, van Weele (2010) describes the centralized structure as the situation where there is a central purchasing department on corporate level. Product specification determinations and supplier selection decisions are made centrally, commonly in close corporation with R&D. A centralized structure is advantageous from the aspect of achieving economies of scale, whereas it is disadvantageous in terms of bureaucracy and customer orientation towards internal users (van Weele 2010).

The *configuration* variable refers to where in the company hierarchy the purchasing unit is positioned (Glock & Hochrein 2011). The position of the purchasing unit is said to reveal the status of the unit within the company (Monczka et al. 2004) and is determined by the management view of the purchasing function. The management view of the purchasing function is connected to purchasing's share in the end-product's price, financial position of the company and dependency on the suppliers' market (van Weele 2010). Additionally, the position indicates the extent to which the unit has power to influence tactic and strategic level decisions (Monczka et al. 2004; van Weele 2010).

2.1.4 Purchasing Process

The purchasing process can in general be said to start with an internal customer demand, pass through the steps supplier selection as well as ordering and delivery (van Weele 2010; Monczka et al. 2004; Parikh & Joshi 2005). Further, the purchasing process according to van Weele (2010) will be discussed in more detail. The purchasing process is said to cover activities to determine specification, select supplier, contract, order, expedite and evaluate, follow-up and evaluate, as illustrated in *Figure 3*. The first step, determining specification, involves specifying what goods or services should be purchased in terms of quality and quantity and is generated by the internal customer. The second step, selecting supplier, aims to select the best possible supplier and also advance the procedures needed to support this selection. The third step, contracting, contains the negotiation part, including as well preparation as conduction, with the optimal output being the established agreement and the legal contract. The fourth step, ordering, relates to the placement of the order with the previously selected supplier as well as to develop efficient routines for purchase order and handling. The fifth step, expediting and evaluation, aims to observe and control the order to ensure supply. The last step, follow-up and evaluation, concerns the work after delivery, such as settling claims, maintaining product and supplier files up-to-date as well as rating and ranking of suppliers. In order to have an effective purchasing function, it has to be closely interconnected with other material functions, such as materials requirements planning, inventory management and quality control.

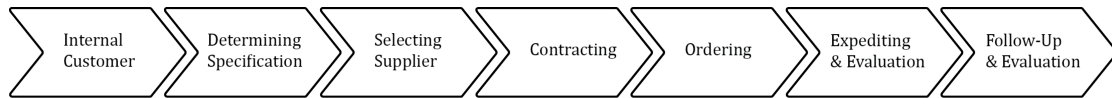


Figure 3. The purchasing process. Freely adapted from van Weele (2010, p.29)

Purchasing tasks, responsibilities, and authorities can be related to three different levels, namely *strategic, tactical and operational level*. The levels impact the company on different time horizons and require involvement of different managerial levels within the company. The content of each level varies among different companies, but generally the first three steps in the purchasing process are related to tactical purchasing, whereas the latter three are operational purchasing. (van Weele 2010)

The tasks performed on a *strategic level* affect the company's market position in the long run. This level is often managed by the company's top management. Examples of decisions made a strategic level are to outsource or keep activities in-house, to contract with certified or preferred suppliers, and to deploy single or multi sourcing. The *tactical level* involves tasks related to product, process and supplier selection. The tasks on this level requires co-operation between different internal functions, such as engineering, manufacturing and quality assurance. The decisions of a tactical character affect the company on a time horizon of one to three years. Decisions are for example to agree on supplier framework agreements which are corporate or annual, to select suppliers in general and to reduce the supplier base, as well as performing certification programs of suppliers. The *operational level* includes activities within ordering and expediting. The decisions are of a short-term character and involve the lowest level of purchasing. Examples of such decisions are release of orders, expediting of released orders, and evaluation of supplier performance. (van Weele 2010)

Purchasing can be divided into different categories depending on what is being purchased, which can be used to differentiate the purchasing process in order to reach a higher suitability of the process for the specific products or services (Parikh & Joshi 2005). An example of categories is purchased product characteristics, which result in the categories large and small purchases (Parikh & Joshi 2005). Another example is a distinction made on material type, which gives the categories direct and indirect materials (van Weele 2010). The latter distinction will be further elaborated since that is relevant for this thesis. Direct material refers to the purchased materials and services that are included in the value proposition to the company's customers (van Weele 2010). Examples of such are raw materials, semi-manufactured goods, components and modules. Indirect material, on the other hand, refers to purchased materials and services that will not be included in the value proposition to the customers. Examples are MRO-supplies, capital expenditures (CAPEX), and services.

Kraljic (1983) was the first to introduce portfolio models into the field of purchasing. The rationale behind the introduction is the fact that firms cannot treat all suppliers with the same amount of resources. Therefore firms should develop a portfolio model strategy by differentiating suppliers depending on the strategic importance of purchase and the complexity of the supply market. By doing this firms are able to structure their supplier base, get a better understanding of how to deploy the dyadic supplier relationships, which are considered in isolation and based on power-dependencies. Consequently firms can allocate resources better. Furthermore in an industrial network approach relationships are not considered as isolated and

dyadic (Dubois & Pedersen 2002). Instead, each relationship affects each other in several dimensions. Portfolio models are based on specific products creating “given” points of departure. These in combination with a dyadic, isolated and power-dependent view on relationships inhibit the mutual understanding and continuous combining of resources in the network perspective. Additionally, the dyadic perspective between buyers and suppliers may inhibit the innovativeness and productivity since both sides have also have other relationships that affects this current collaboration. Moreover, portfolio models in purchasing are very appreciated due to the simplicity to use and many firms see power dependencies as problematic (Dubois & Pedersen 2002). However, a network approach focusing on firms and relationships enables opportunities to capture vital inter-firm interactions and interdependencies that can otherwise be overseen. Additionally, the network approach considers a total cost approach and mutual value creation.

2.1.5 Purchasing Competence

According to Grønhaug & Nordhaug (1992), depending on which market the firm operates in, it needs to possess work-related knowledge and skills i.e. competence, in order to successfully maintain market shares. The ability of a firm to develop and utilize its competences that create added value, both currently and in the future, is important to consider in order to maintain a competitive position.

Purchasing competence can be described as the firms ability to manage, develop and structure the supplier base in accordance with the overall business objectives (Das & Narasimhan 2000). Purchasing competence can also be described as a portfolio containing a bundle of purchasing practices such as reducing or optimizing the supplier base, buyer-supplier relationship development, supplier capability audit and purchasing integration. Managing these practices can be grouped as supplier development activities and the urgency for managing these activities derives from the increasing reliance on fewer suppliers and more focus on collaborative, long-term relationships (Nagati & Rebolledo 2013). Long-term relationships yield collaborative communication, deeper understanding and build trust between buyer and supplier to realize mutual goals (Paulraj et al. 2008). For this to work, firms should be engaged in mechanism that combine, exchange and invest in relational-specific assets (Sánchez-Rodríguez 2009). Furthermore, firms utilizing strategic supplier development rather than non-strategic, gain better long-term benefits (Krause et al. 2000). However having a combination of strategic and non-strategic supplier relationships is necessary to optimize resource allocation.

Reducing the supplier base is usually the essential first step towards having more strategic relationships (Das & Narasimhan 2000). Thus it involves reducing the number of suppliers, restructuring, leveraging volumes that supports early supplier involvement and supplier-buyer relationship development. The buyer-supplier relationship development practices could be facilitated by a total cost of ownership approach (Dyer & Ouchi 1993) as well as focusing on reducing transaction costs associated with managing relationships (Frazier et al. 1988).

Due to the increasing importance of purchasing, changing from an operational issue to a more strategic matter (van Weele 2010), maintaining a well functioning portfolio of purchasing practices enables the purchasing unit to become highly strategic, both at a functional and corporate level (Das & Narasimhan 2000). Having a strategic purchasing approach in combination with a supplier capability audits system enables firms to get a better understanding of how well their suppliers are performing (Carr & Pearson 1999; Das & Narasimhan 2000). This

is crucial knowledge in order to establish long-term relationships that have a positive effect on the firm. Moreover purchasing competence from an integration perspective is vital (Narasimhan et al. 2001; Gadde et al. 2010). Purchasing needs to handle interfaces both internally, to other units within the firm, and externally, with other suppliers and actors in the network. Managing external interfaces through collaborative communication can increase the cooperation and trust, generating a dyadic buyer-supplier relationships, increasing the performance for both parts (Paulraj et al. 2008).

2.1.6 Purchasing Performance

Purchasing performance is hard to measure, due to several reasons (van Weele 2010). Unstructured, unclear and uncertain purchasing goals make it difficult to evaluate purchasing performance in objective terms. Additionally, a purchasing function does not work in isolation, but is rather a result of many intangible activities working together. Consequently, it is also difficult to define what performance parameters or measurement that should be used in a firm, (Stanley 1993; van Weele 2010). Hence, a uniform methodology or system with appropriate key performance indicators (KPI) for measuring purchasing performance does not really exist.

Within the field of purchasing, previous researchers have concluded that the design and contribution from the purchasing organization of course impacts the purchasing performance, but it can also affect the overall performance of the company (Glock & Hochrein 2011). Even though generally cost reductions are the primary goal for any purchasing unit, due to the increasing strategic importance of purchasing and the fact that the purchasing unit's KPIs usually are decided by the CEO or similar, there is a trend towards finding and developing better purchasing performance measurement systems (Caniato et al. 2012). There are several reasons for implementing supportive purchasing performance measurements systems (Monczka et al. 2004; van Weele 2010). Firstly it aids the decision-making processes consisting of strategies and generated results. Secondly it assists the communication of responsibilities and goals along the purchasing organization. Thirdly it may contribute to improving people's performance through feedback on their individual results. Fourthly it enables benchmarking with other firms. Besides purchasing performance should be evaluated on a regular basis so the purchasing function as well as the individual buyer understands their contributions and ways to improve these (van Weele 2010).

Purchasing performance measurements however is not only about deciding the measurement, but also deciding what purpose and how the measurement should be managed. A framework for developing the performance measurements can be categorized by structure, process and architecture. The first perspective, structure, relates to what should be measured. The second perspective, process, relates to how the measurement system should be designed and implemented. The third perspective, architecture, relates to what needs to be adjusted to reflect the different levels in the firm. Purchasing performance can be affected by a combination of the firm's ability to manage internal processes and the supplier's ability to manage external processes. Nevertheless, the focus of this study is set on an internal perspective and the performance measurement will be investigated from the buying firm's perspective. (Caniato et al. 2012)

Purchasing performance, according to van Weele (2010), is the extent to which the purchasing function can realize its previously decided objectives at the least usage of resources. The performance of the purchasing operations consists of the purchasing effectiveness and efficiency.

Stanley (1993) supports this view, but also adds a third dimension, adaptiveness. *Figure 4* illustrates all three dimensions as part of the purchasing performance in order to cover the different aspects. Purchasing effectiveness refer to the extent to which previously set goals are met (van Weele 2010). It relates to the goals connected to the overall objectives of the purchasing function. Additionally the purchasing unit should aid the process and product innovation and strive to reduce the general risks with supply management. Purchasing efficiency refer to the difference between planned and actual costs for achieving the previously set goals. It relates to the resources, and what means are needed to achieve the previously set purchasing unit goals. Consequently purchasing efficiency depends on the purchasing organization, structure, systems, processes, methods and people employed. Adaptiveness relates to the ability the organization has to react to environmental changes within its own context (Stanley 1993).

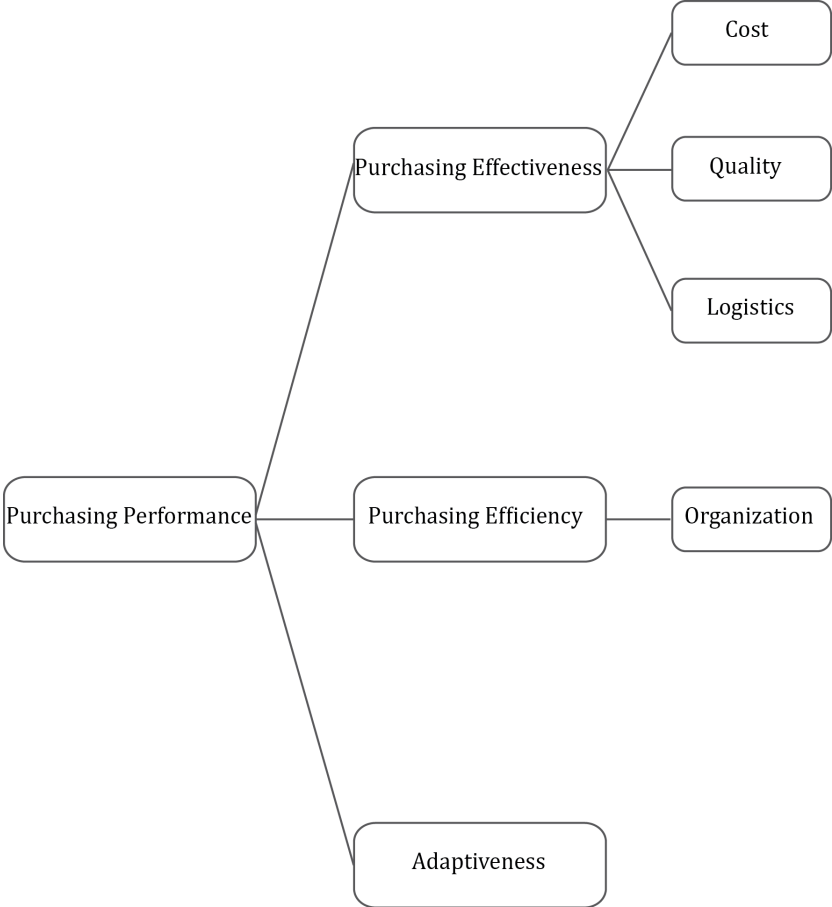


Figure 4. Purchasing performance and its constitutes freely adapted from van Weele (2010) and Stanley (1993).

Further, van Weele (2010) categorizes purchasing effectiveness into *cost, quality and logistics* and purchasing efficiency into *organization*. Within the four dimensions, different performance measures can be deployed to continuously or incidentally evaluate the performance of the purchasing unit. The *cost dimension* refers to the connection between standard and actual cost paid for materials or services. However there is a difference between cost control meaning continuously monitoring cost developments due to changes from the supplier’s side, and cost reductions which aims at continuously monitoring activities generating structured reductions in

purchased material and services. The *quality dimension* relates firstly to the extent to which purchasing is involved in new product development, consequently measuring cost of project and time to market. Secondly it relates to purchasing's contribution to total quality control, meaning the extent to which the unit is able to make sure that the incoming material from suppliers have no quality defects. The *logistics dimension* involves purchasing's role to efficiently secure the incoming flow of material and services by controlling quantities delivered, timely delivers by suppliers and all administrative work related to purchasing orders. The *organizational dimension* incorporates all resources such as employees, management, procedures, guidelines and IT-systems that are used to reach the goals of the purchasing unit.

Sánchez-Rodríguez (2009) argues that there is a rather distinct connection between strategic purchasing, supplier development and purchasing performance, see *Figure 5*. From the buying firm's perspective, having a strategic purchasing approach and aligning the purchasing strategy with the overall business objectives enables the firm to establish supplier development activities. When strategically oriented supplier development activities allow buyer and supplier to combine and exchange resources the supplier will improve its performance. Consequently, the buying firm will also experience increased purchasing performance. By having a clear and well-planned strategic purchasing strategy it can directly affect purchasing performance, or indirectly by the configuration of goals, resources and capabilities between buyer and supplier, i.e. supplier development activities. Therefore strategic purchasing has a direct impact on the purchasing performance while the supplier development facilitates this relationship.

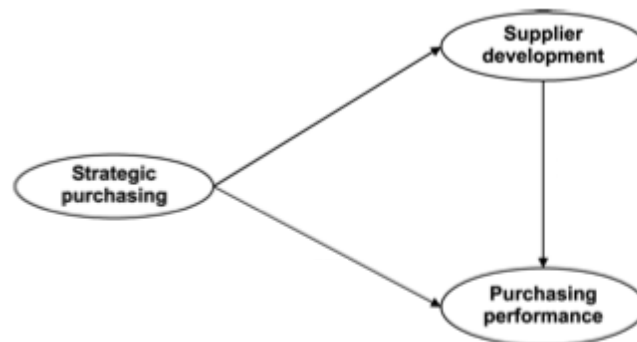


Figure 5. The connection between strategic purchasing, supplier development and purchasing performance (Sánchez-Rodríguez 2009, p.162).

2.1.7 Conceptual Model of Purchasing Performance

The focus of this study is set on the buying firm's perspective, Volvo Cars. This first section has discussed the internal perspective of the buying firm, but as indicated by Stanley (1993) the purchasing performance is also affected by adaptiveness, i.e. the external environment of the buying firm. Therefore, it is important to broaden the scope and also take into account the surrounding network, meaning that firms need to manage different interfaces both internally and externally. This reasoning resulted in a conceptual model, see *Figure 6*, that will be used for the analysis. The four dimensions of effectiveness and efficiency are excluded since difficult to specify effects on such detailed level. To manage the interfaces, the focal firm needs to be involved in for example supplier development activities that improve the suppliers that will benefit the buying firm. Hence, the forthcoming section will discuss the external network of the buying firm.

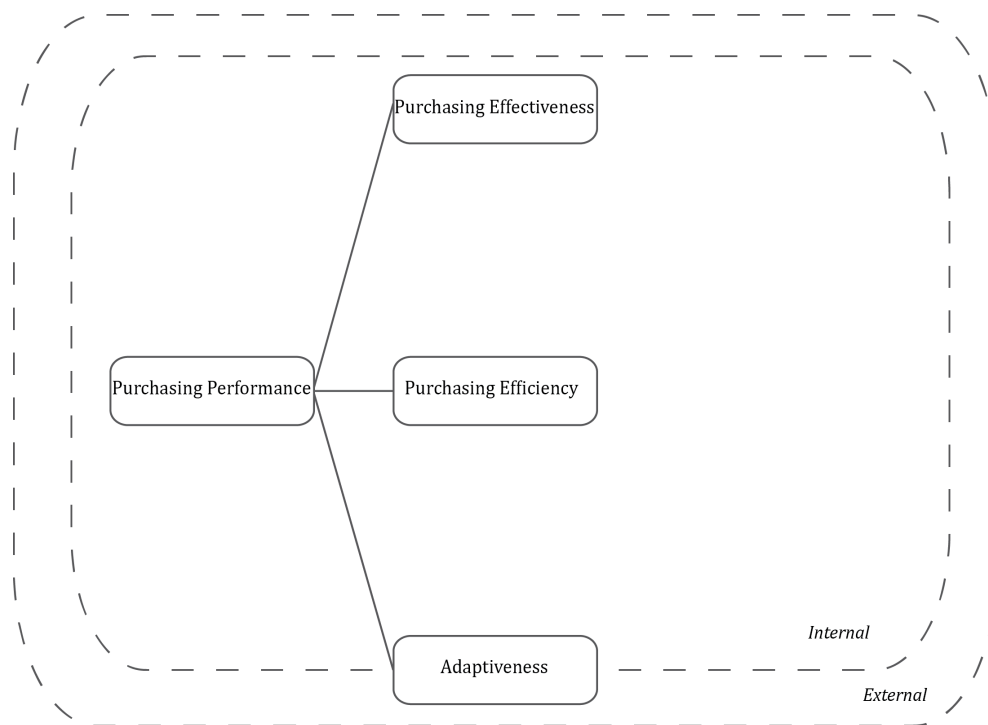


Figure 6. The Conceptual Model, which connects the purchasing performance and adaptiveness with the internal and external perspective.

2.2 Supply Network Approach

The changing role and functioning of purchasing requires a new framing of the supply side of a firm, i.e. purchasing and supply management should be seen from a network perspective, which is built on an industrial network approach (Gadde et al. 2010). The industrial network approach means that firms form networks by operating in interlinked business relationships. According to Gadde (2003), strategic management literature emphasizes the importance of being superior to others when trying to improve performance. However, in the industrial network approach, competitiveness is not as important and focus is instead on coevolution and interdependence among firms.

Håkansson and Ford (2002) discuss three paradoxes in the management of the network approach. The first paradox concerns the fact that a network structure allows a firm to access external resources and diversified opportunities to develop. However, the extent to which a firm is able to act and develop is restricted by the structure of the network that the firm is located in. Changes in the external environment of a firm affect the internal activities and adjusting an internal activity requires changes in the external network as well. As the network structure is important for the firm, one crucial issue for managers is to identify the suitable level of involvement with suppliers and invest more in those relationships that can contribute to the firm's development and where mutual benefits can be gained. The second paradox is that firms use the relationships as a way to influence each other, while simultaneously, the company is an outcome of those relationships and their evolvement. A strategic issue is thus about balancing the interaction between being influenced and influencing others (Gadde et al. 2003). In order to achieve their goals, firms often try to control the network around them, manage the

relationships and direct these towards their own aims. However, the more a network is controlled by one single firm, the less innovative it will become, as there will only be one source of development and innovation. This is the third paradox and a managerial issue is hence to identify an appropriate level of control.

In order to handle the paradoxes, firms need a strategic approach (Gadde et al. 2003). This approach concerns three dimensions of the industrial network approach, which are resources, activities and actors (Håkansson 1987). The first paradox is related to the resource dimension as it is about the level of involvement with partners. The second paradox concerns the issue of influencing others and being influenced, which, relates to the activity dimension. The third paradox, concerning the level of control, relates to the actor dimension. These three dimensions, constitute the ARA model (activities-resources-actors), which provides a good basis for the analysis of purchasing from a network view (Gadde et al. 2010). The three dimensions are connected through interactions among firms, which create business relationships.

2.2.1 Development of Business Relationships

Håkansson and Snehota (1995) conceptualized how a relationship is developed through the establishment of activity links, resource ties and actor bonds between two companies. As activity links, resource ties and actor bonds are established between two companies, a relationship is developed. The connections between the companies in the form of links, ties and bonds are a source of value, and how valuable these are depend on how each layer is handled and their interaction. The interaction between two firms is crucial as they interact in order to utilize their own resources, the counterpart's resources and other connected resources to the greatest extent (Araujo et al. 1999). Both parties need to be aligned for the development of a relationship and the outcome of it depends on how well the firms utilize each other's resources.

Two interacting firms have requirements and capabilities that are derived from existing relationships, which affect the developing business relationship (Håkansson & Snehota 1995). The activity links, resource ties and actor bonds in a relationship between two firms influence the activity structures, collections of resources as well as organizational structures of the companies involved, and this influence is reciprocal. How much a relationship affects a firm depends on the internal features as well as other relationships in the organization. As the economic effects of a relationship depends on the competence, innovativeness and productivity of a firm, the activity links, resource ties and actor bonds in a relationship affect the firm's overall capabilities. The effects of a relationship between two firms do not only concern the two parties involved and their relationships, but also other actors and their relationships. This is because an activity link, a resource tie and an actor bond are part of larger constellations, i.e. an activity link is a link in a wider activity pattern that spans over several companies, a resource tie is a constituent of a broad resource constellation and an actor bond is part of a web of actors. Thus, the overall network structure is affected by the development of a relationship between two firms, and simultaneously, all other relationships have a role in it. The following sections will elaborate on the main constituents of business relationships, i.e. activities, resources and actors.

2.2.2 Activities

The activities of a firm, for instance the production and delivery of goods, affect and are affected by the resources and actors that they are related to. The activities are part of the process of

interaction in a network, as well as the result of the network. Activities are interdependent, which means that the internal activities of a firm are dependent on and interact with activities of external firms in the network, and simultaneously affect those external activities. (Håkansson et al. 2009)

According to Gadde et al. (2003), the most crucial activity in a firm is interaction. This stems from the products and services exchanged between two firms, and how the flow of information and goods is organized. The actions taken to execute this pass through several firms and create chains of activities, e.g. supply chains. The activities of a chain are interdependent and connected through links, forming an entity that has network characteristics. By coupling the internal activities of a firm with those of external actors, the firm can make use of the interdependencies between the activities and this is valuable as it allows for rationalization of important operations that go beyond the firm boundaries. Thus, the activities of a firm are not undertaken in isolation, as they are part of a larger constellation and interdependent with activities outside the firm boundary. Consequently, the efficiency and effectiveness of a firm is related to the way these interdependencies are handled. Each firm has its own pattern of interdependencies, depicting its relation to the most important counterparts and how they are linked to others. It is therefore essential for a firm to build its interdependencies systematically (Håkansson & Ford 2002).

The configuring of activities in the network thus affects the efficiency of a firm and to increase the performance of the firm, the internal activities need to be connected to activities of other firms. Furthermore, it is through interaction among actors that companies may identify opportunities to combine resources and configure activities across firm boundaries. An activity undertaken in a company is linked with other activities and together these constitute the activity pattern of the network. The efficiency of the single activities as well as the activity patterns are affected by the interdependence among them and it is therefore essential to manage the configuration of activities well. (Gadde et al. 2010)

As the conditions for activity configuring change constantly, a major issue is to reconfigure activities (Gadde et al. 2010). The reconfiguring aims to increase the efficiency of individual activities as well as enhancing the performance by improving the synchronization between activities. As firms strive to optimize their activities in the activity layer, each firm needs to determine which counterparts it is willing to conform to (Dubois 1998). The choices affect the interdependence of the firm's resources and activities. Thus, the efficiency of the activity layer of a network as well as the individual efficiency of firms depend on the resource utilization and adaptation of activities and resources to counterparts in the network. Gadde et al. (2010) mean that purchasing has a key role in the efforts of a firm to handle its activity configuration as efficiently as possible. In order to secure long-term efficiency and effectiveness, purchasing has to coordinate and adapt the internal activities with the external ones. By exploiting the activities and resources of suppliers, the activities of the two firms can better be adapted and result in higher efficiency. Therefore, in addition to monitoring the activities of suppliers, purchasing also has to continuously review the internal activities, to detect situations where activity changes might be needed to better fit the activities of suppliers.

To conclude, when it comes to the activity dimension, configuration of activities in the network affects the efficiency as well as effectiveness of a firm significantly (Gadde et al. 2003). Thus, it is crucial for a firm to connect and possibly adapt its activities with that of suppliers, to exploit the external resources and enhance the firm's performance. Purchasing has an important role in the

improvement of a firm's performance as a key task for purchasing is to link the internal activities with suppliers' activities (Gadde et al. 2010).

2.2.3 Resources

According to Gadde et al. (2010), there are different types of resources, including wide categories of assets. The resources can be tangible, such as machinery product and machinery, as well as intangible, e.g. capabilities, know-how and skills. The tangible resources can also be named as physical ones, consisting of the two categories facilities and products, while the intangible resources, also called organizational resources, are further distinguished as organizational units or business relationships (Håkansson & Waluszewski, 2002). How a resource is created and shaped depends on its interaction with other resources, those of the same category as well as those of the same type. This is illustrated in Figure 7, the 4R model, which shows how resources can interact.

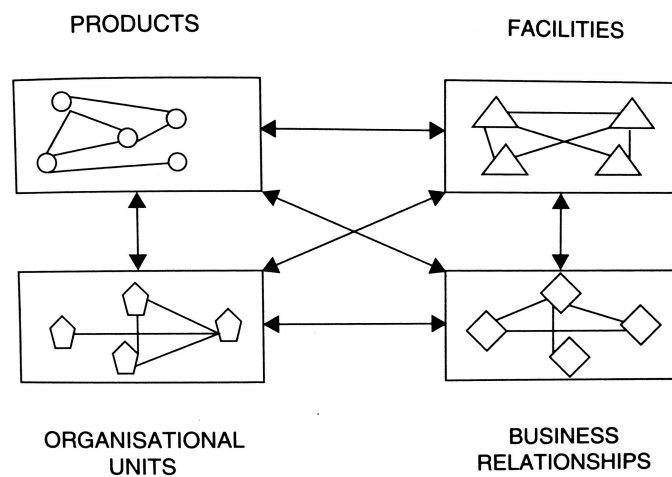


Figure 7. The 4R model, showing interaction among resources (Håkansson & Snehota 1995, p.67).

Gadde et al. (2010) also argue that the internal resources of a firm should be viewed as part of a large resource constellation, where firms have access to external resources through their business relationships. A key issue for the supply side of companies is thus how to handle the interface between the internal and external resources, which implies a continuous combining and recombining of resources. Purchasing has a crucial role when it comes to the access and exploitation of these resources in the most proper way. The tasks of purchasing include activities such as assessing the internal resources and their developments as well as exploring the external resources to see what fits the goals of the organization. Several dimensions need to be considered and since the relevance of these dimensions change over time, they must be continuously monitored, evaluated and changed if necessary.

The industrial network approach assumes that business relationships exist and have a significant role. The relationships can be with suppliers, customers or other organizations and can be seen as strategic resources in three different ways. Firstly, the relationships themselves are important for a company since they often comprise an enormous part of a company's income and expenses. Furthermore, firms increasingly rely on relationships with others when it comes to technical development. Secondly, the direct relationships of a firm link it to the network that it is part of, with each relationship being a bridge as well as projection of the linked relationships and their constitutional resources. Thirdly, a crucial part of a firm's resource base can be found

externally, out of the firm's ownership, as relationships couple the physical and organizational resources of a firm with those of the external actors. In this aspect, the resources of a firm are tied to resources in other companies. An internal resource can be utilized and combined with many other resources, and how it is combined affects its evolution. (Gadde et al. 2003)

In order to utilize the resources of a counterpart utmost, it is essential to get involved and develop a deep relationship as this increases the potential value of the relationship (Gadde et al. 2003). However, deep relationships do not only add value, but also require investments and are costly to manage. Thus, high-involvement relationships are only incentivized when the benefits of the relationship outweigh the costs (Gadde & Snehota 2000). In addition, there is a risk for lock-in effects as firms that are highly involved in their relationships are extremely interdependent (Gadde et al. 2003). This is a result of assets and activities being adapted to a certain relationship, limiting the vision of a firm and its possibilities to develop other relationships (Anderson et al. 1994). Hence, it is important to continuously monitor relationships and their development and reconsider the prioritization of these (Gadde et al. 2003).

The main issues when it comes to the resource dimension is that the key issue for a firm is how to utilize the resource constellation of the network to the greatest extent. In this context, it is necessary to realize that resources are not always given, as they may have unexploited dimensions that can be elaborated in cooperation with another actor. By constantly combining and recombining in business relationships, new resource dimensions can be explored and developed further. A business relationship is thus a vital resource in itself, while it simultaneously can be used to alter the utilization, and consequently the value, of other resources. (Gadde et al. 2003)

2.2.4 Actors

The actors present in the firm's external environment that affect the firm are for instance competitors, customers and suppliers (Grönhag & Nordhaug 1992). An actor can be an individual, a company, parts of a company, e.g. functions, or constellations of companies (Gadde et al. 2010). The perception of an actor differs depending on the specific interaction situation. According to Gadde et al. (2010), an actor is shaped by the interaction processes that take place in the business landscape, creating a wide variety of actors that are different. Actors are crucial for the performance of the supply side since they control the resources and carry out activities. The activities and resources connect the actors, forming larger constellations known as actor webs. The connections between actors have been identified as bonds, which are established through social exchange among the individuals participating in the interaction process. The bonds consist of mutual commitments, obligations, orientations and selective preferences. While bonds to a certain degree reflect the resource ties and activity links in a network, they are simultaneously essential constituents as well as conditions for modifications of the ties and links. Furthermore, the bonds also show how active an actor is in relation to others.

The configuring of activities is done consciously by the actors individually, whom try to affect each other (Gadde et al. 2003). The interaction among firms in the network is a result of the development of relationships as well as an impact on it, with a greater possibility for evolution the more the actors try to affect each other. Thus, the driving forces for network dynamics is the desire to control and influence others. However, the more power possessed by one single firm, the less effective the network will be as the responses from counterparts will be limited.

Consequently, this impedes dynamics and innovation in networks (Wilkinson & Young 2002). It is therefore important to identify an adequate balance of control (Gadde et al. 2003). Rather than using power to force a counterpart to act in a certain way, mutual dependency should be created and the power should be used in a constructive manner, at least when the connections are close (Gadde et al. 2010). The reason for this is that the future well-being of a firm is largely determined by the prosperity of counterparts. In fact, it has been claimed that the stem of solidarity and trust is successful relational exchange, which is represented by dependence and power. With high dependence, two firms will likely promote commitment, trust and relational behavior. What is also required for an effective relationship is cooperation and conflict. Cooperation is a result of two firms working together for their shared interest, whereas conflict is a result of contradictory intentions. Conflicts can arise in well-functioning collaborative relationships, and is even a prerequisite for creative interaction among firms. However, for creativity to evolve in the long-term it is essential that the conflicts are managed properly.

How much a firm can influence counterparts in the network depends on its network position, defined by the features of its relationships with other actors (Gadde et al. 2003). This means that the relationships, activity links, resource ties and actor bonds determine the level of influence a firm has (Ford et al. 1998). Whereas the web of actors has an impact on how the activity and resource layer change, these also affect changes in the actor layer as the layers are interdependent (Gadde et al. 2010). For the actor layer, there are mainly three kinds of changes that are relevant. Firstly, actors will change depending on what activities that are carried out, and what resources that are controlled. Secondly, changes in activity links and resource ties will result in modifications in the bonds between actors. Thirdly, often creation of new relationships and interruption of existing ones is necessary. All modifications depend on the bond between actors, and each change will have an impact on the position of one actor in relation to all its counterparts in the network. Thus, when it comes to the supply side, the positioning of a firm is affected by the purchasing strategy and buying behavior. For example, depending on the size of the supplier base, different positions will be held. With some counterparts the supply side of a firm will develop closer relations than others. In these high-involvement relationships with continuous interaction, actors will become mutually interdependent and the role of an actor may be difficult to separate from the interacting counterparts. These relationships are crucial for a firm since the counterparts can contribute with specific competences as well as connections to other important actors that the focal firm is not directly related to. The effects that can be achieved are for instance improvement of physical flows or joint technological development. As can be realized, this kind of interaction is resource demanding with the establishment and maintenance of actor bonds, as well as resource ties and activity links.

When it comes to the actor dimension, the main conclusion is that actors are important for the supply side since they control resources and execute activities (Gadde et al. 2010). In the interaction between actors, bonds are formed, consisting of mutual commitments, obligations and orientations. How much influence an actor has on its counterparts depend on its position in the network, which is determined by the relationships, resource ties, activity links and actor bonds (Ford et al. 1998). It is important to find an appropriate level of control, as too much or too little power may hamper the development of firms (Gadde et al. 2003). On the supply side, purchasing has a crucial role in the positioning of the firm, as this is affected by the buying behavior and purchasing strategy (Gadde et al. 2010).

2.3 Internal and External Interfaces

According to Hessel (2014) the purchasing department means the employees working in a particular department executing purchasing activities. However, not all purchasing activities reside within the purchasing department. Nonetheless, a better description is then the purchasing function that includes all activities to support purchasing and supply management, irrespective of the department. Further the words department and function are often used synonymously. When purchasing and its activities are centralized to a specific purchasing department these terms tend to overlap as the purchasing function's activities spans across the entire firm. As a result, direct or indirect influences on the purchasing behavior occur, see the internal arrows in *Figure 8*. Further different functions such as purchasing and R&D support, interact and coexist with different business functions and as a result employees work in different departments, but can facilitate several business functions at the same time. Another reason for the purchasing function being distributed over several departments is that firms need to cope with increased variety of demands that require linking of internal activities with external ones, which is a consequence of increased specialization and advanced market structures (Dubois & Wynstra 2005). Further, there are three different principles that the purchasing function may have in relation to other internal departments. Firstly, the purchasing function may be an order-taking unit that performs operational purchasing tasks according to specifications of internal stakeholders. Secondly, the position of the purchasing unit can be stronger than other departments' and consequently, other departments have to comply, more or less, with the purchasing unit's conditions. Thirdly, the purchasing unit may depend on the interaction with other departments in the firm, thus it is possible for departments to influence each other in decision making that concerns for example logistics and purchasing.

According to Dubois and Wynstra (2005), another dimension that affects the purchasing function is the external dimension, which is how the firm deals with suppliers. First, in a market where many suppliers are available, the firm can outplay the suppliers against each other in order to find the most beneficial one in each purchasing situation. Second, there might be a market where some suppliers are dominant and the external structure is given already. Third, there is also the case where firms interact with suppliers that allow for adjustments within that buyer-supplier relationship according to what is done in other supplier relationships. The third case may be describes as a way to work with a supplier network.

The internal and external dimensions affect the purchasing function and results in different strategies and roles of purchasing (Dubois & Wynstra 2005). Different roles of the purchasing function may coexist in a firm as a result of different product and component characteristics required. The purchasing function needs to be organized as an interface between internal and external actors and has to evaluate as well as coordinate adjustments that are needed in the internal and external environment. In this way, the interface refers to the connections within the firm internally and with the external network of actors. Some authors give an interface a more precise meaning, as described by (Håkansson & Waluszewski 2001, p.4): *"The features activated in an interface are the result of interaction process over time, where resources have been systematically related and where a solution of how to combine them has gradually chiseled out. Thus, it is the interaction process that develops and establishes the interfaces where resources are activated. And, the interfaces determine the features of the involved resources. In other words, the interfaces determine the use and the value of resources"*.

In this thesis, an interface can be between resources in interaction processes but it can also be an interface between actors and activities of the network model (Håkansson and Snehota, 1995). Hence, an inter-organizational perspective of purchasing is taken emphasizing the importance of connecting the internal activities and resources with those of the external counterparts in the network. Purchasing has a crucial role when it comes to resource combining and activity configuring with suppliers, which enhances the purchasing performance and ultimately, the overall performance of the focal firm. In *Figure 8* the internal and external perspective is elaborated, linked to the ARA-concept. The internal perspective includes all departments within the firm, for example R&D and Purchasing. The external perspective considers actors or firms that reside outside of the firm. All together they constitute the network and their connections are referred to as interfaces.

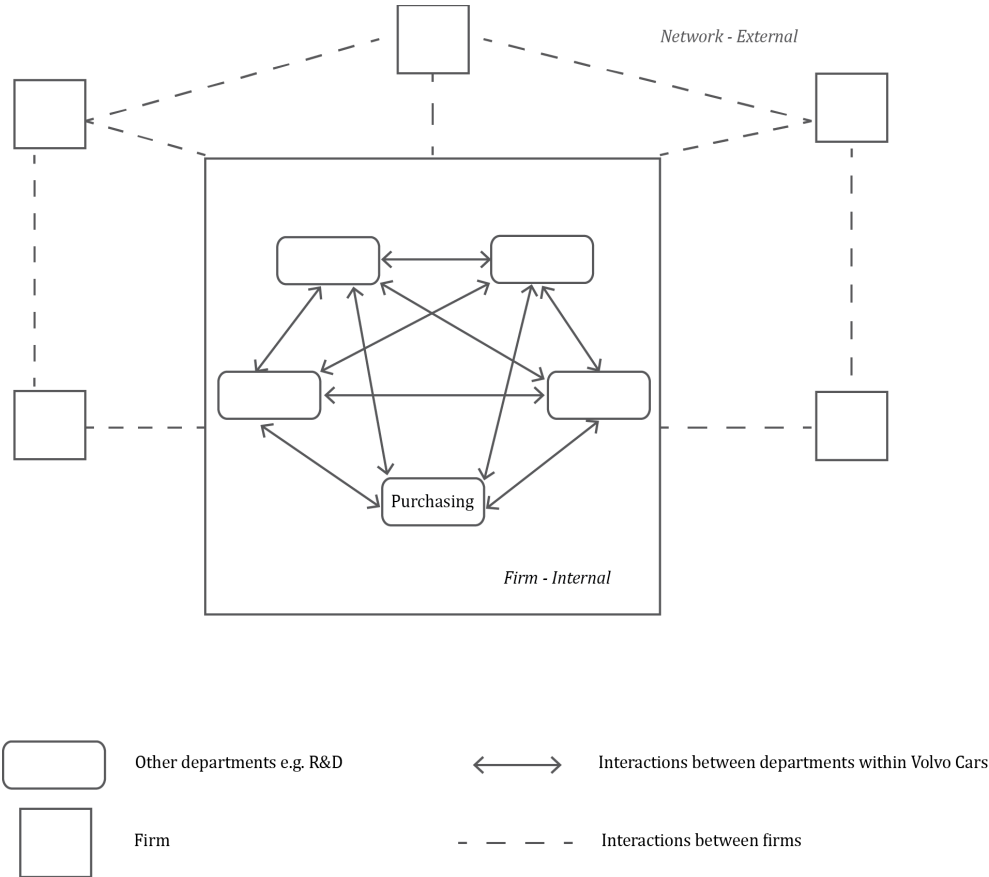


Figure 8. Internal and external interfaces in a network context. Freely adapted from (Hessel 2014, p.47).

3 Methodology

This chapter aims to describe the research method of this study, i.e. how the work of the study has proceeded. The chapter starts with the Research Strategy and Work Process. Thereafter, Phase One, Phase Two and Phase Three of the work process will be described. Finally, the chapter ends with Discussion of Quality and Validity, i.e. a discussion to give a critical assessment of the study.

3.1 Research Strategy

The aim of the thesis is to evaluate the effects of Purchasing Academy's previous as well as future activities on the performance of the purchasing unit at Volvo Cars. Hence, focus has been put on the purchasing unit at Volvo Cars in order to understand and evaluate effects on its performance derived from activities, both in the past and future, by a single group, the Purchasing Academy. Based on the focus of the thesis, a case study research strategy was applied.

A case study approach is a suitable strategy when concepts and variables are hard to quantify due to the fact that there are too many variables to consider (Ghauri & Grönhag 2005). Further, it is appropriate when how and why questions are to be answered relating to the qualitative research approach. Case study is a widely used approach in business research and focuses on a bounded situation and understanding of the specific context (Bryman & Bell 2011). A case study also enables the use of several different sources of data collection, e.g. semi-structured interviews and intranet data, to avoid relying on a single data source.

According to Yin (2009) generalization from case studies can be difficult, especially to decide at which level the case can be generalized. Generalization can be categorized into statistical generalization and analytical generalization. Statistical generalization is more commonly used when hypothesis are tested on a population based on collected empirical data and quantitative formulas. On the contrary, analytical generalization utilizes previous theories as template to compare empirical data in case studies to produce theories. Further, multiple theories are combined to support and create plausible theory. Consequently, analytical generalization is more suitable for case studies. The goal of case studies is to expand and generalize theories (analytical generalization) rather than count the frequency (statistical generalization). Furthermore, the case study analysis should focus on what is exceptional for this case and aims to give a deeper understanding (Bryman & Bell 2011). However, it is hard to generalize from the case study conclusions outside the boundaries of the research, but still models and methods used for the analysis can be applied in other similar researches. Further, the case study approach suits the logic behind the qualitative approach where the key purpose is to understand and get insights to build explanations of theory (Ghauri & Grönhag 2005).

Firstly, the purchasing unit and its structure at Volvo Cars needed to be understood to get a holistic understanding of the effects that Purchasing Academy could generate at the purchasing unit. Secondly, opinions from the purchasing employees' had to be collected and comprehended. As a result a qualitative, in-depth and exploratory approach was applied.

Qualitative research emphasizes the quality of the objects and meanings compared with quantitative research where emphasis is on frequency and amounts (Denzin & Lincoln 2000). Furthermore, qualitative research strives for rich descriptions and enables an in-depth

understanding due to more elaborated interpretation and analysis (Wallén 1993). An exploratory approach is appropriate when the research problem is unstructured, not set from the beginning and there is a need for flexibility (Ghuri & Grönhag 2005). To conclude, since the thesis aimed to evaluate the effects of the Purchasing Academy there was need to capture and understand the opinions from the employees at the purchasing unit. As a result a qualitative and exploratory approach was necessary in order to produce and develop theories of the effects from Purchasing Academy's activities, from the previous and current situation. Furthermore, the qualitative approach was necessary due to the fact that the main focus was on the interviewees and their opinions since it was important to capture ideas and thoughts that could not be captured in a quantitative study.

During the process of this report the research questions was preliminary set in the first phase. Phase two started with pilot interviews whereupon the interview guide was reviewed in order to make adjustment regarding for example the order of questions and the content of the questions. This was mainly done to improve the interview guide and secure the extraction of relevant data during the interviews. Furthermore, during Phase two the theoretical framework evolved and was also complemented with theories, results and insights that emerged from the empirical data collection. As a result, a systematic combining approach in combination with an abductive logic were deployed in the thesis process.

Systematic combining is the approach when theoretical framework, empirical data and case analysis advance simultaneously (Dubois & Gadde 2002). It is a way to continuously change movement between research issue and analytical framework due to new empirical findings and is suitable when developing new theories. Systematic combining can be seen as two processes working in parallel, see *Figure 9* The first process matches theory with reality whilst the second process handles direction and redirection of the evolving framework and case. Directions are when theory drive ideas while redirections are a result of sporadic changes of incoming information. The matching process can be describes as going back and forth between the theoretical framework, data collection and analysis. As a result, direction and redirection enables matching. Besides these, the two processes are both affected by four factors, namely existing theories, choice of analytical framework, what is going on in reality and the emerging case study. Additionally, according to Yin (2009) performing case study research is a process that is linear and iterative.

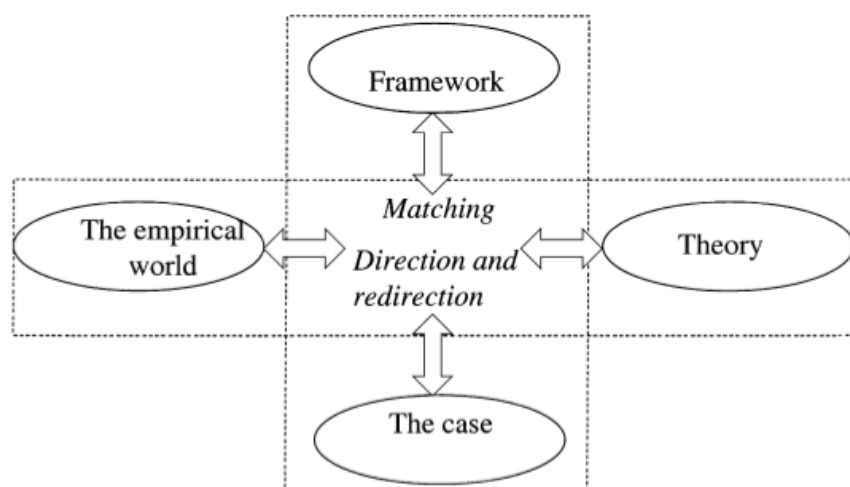


Figure 9. Systematic combining (Dubois & Gadde 2002, p.555)

Following an abductive logic means that the previously established theoretical framework is modified as unforeseen empirical events occur as well as new theoretical acumen evolves (Dubois & Gadde 2002). On the contrary, a deductive approach tests and confirms theory to generate findings. Further inductive approach means that certain observations and findings generate theory. Abductive is similar to inductive but in combination with systematic combining the goal is more theory development (abductive) rather than theory generation (inductive). Consequently, the focus is to have a supporting framework to fit the research issue. Further, the benefits of having an abductive approach is the fact that the results evolve by a mixture of theory and gained insight during the whole process.

To conclude, as the thesis process evolved with the data collection and theoretical framework being produced, a systematic combining with an abductive logic was deployed. Additionally, a conceptual model for analyzing purchasing performance evolved from the theoretical framework. The work process is described in more detail in the following section.

3.2 Work Process

The work processes of the thesis can be divided into three phases, namely Pre-Study, Data Collection and Data Analysis & Evaluation, see *Figure 10*. In the first phase the pre-study was performed in order to identify and understand the situation. The pre-study resulted in a formulation of the purpose of the study including the problem analysis as well as associated research questions were established. Thereafter, a literature review was made in order to set the foundation for the theoretical framework as well as the data collection. The result of this first phase was the planning report, which stood as a basis for the rest of this thesis. In the second phase the data collection was performed in parallel to writing the theoretical framework. The main source of empirical data was personal interviews with employees within the purchasing unit at Volvo Cars. However, data was also collected from the Purchasing Academy employees as well as the intranet at Volvo Cars. In the third phase the empirical data was analyzed with consideration to the previously written theoretical framework. The theoretical framework process was iterated in order to ensure that it matched and covered emerging empirical data subjects. The aim of the data analysis was to analyze incoming data with the research questions, which ultimately lead to conclusions relating back to the purpose.

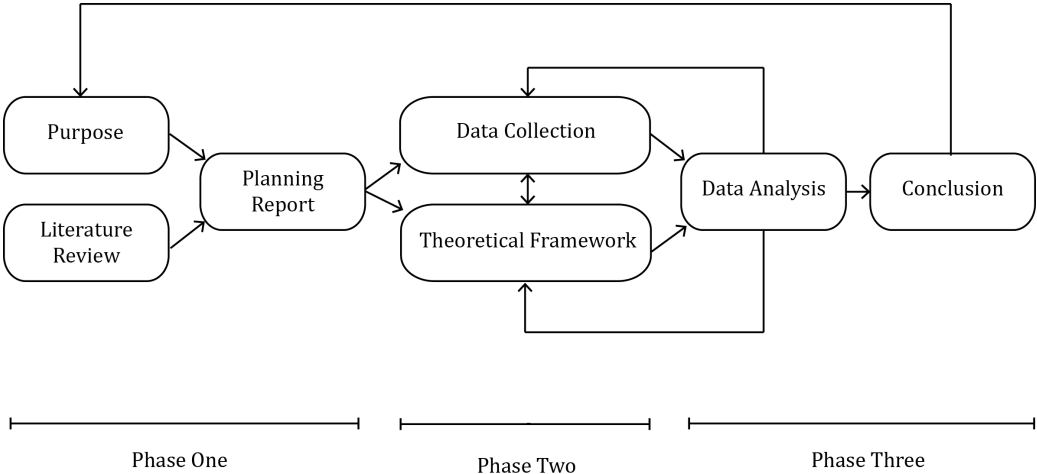


Figure 10. A schematic illustration of the work process of the thesis.

3.3 Phase One: Pre-Study

The aim of the first phase was to gain a deeper understanding of the current situation and setting the boundaries of the case. Therefore, the preliminary research purpose and associated research questions were established. At the same time an initial literature review searching for relevant information for understanding and setting the scene for the purchasing unit was performed. As a result the planning report was compiled including, several identified topics for the theoretical framework and the purpose set.

In order to answer the research questions of this thesis, both primary and secondary sources of information were needed. Primary sources are material presented in its original form, which has not been interpreted, condensed or evaluated by another party, e.g. interviews and sets of data (Hooper 2014). Secondary sources are material that are interpreted or evaluated primary sources, for instance journal articles and biographical works. For the literature review, secondary sources have been used in the form of academic literature, i.e. books and journals. The primary sources are the interviews, which will be further explained in Phase Two.

During Phase One the type of data collection needed was identified, such as interviews with purchasing employees and data gathering from other internal sources. Regarding the interview process, relevant information to conduct qualitative interviews in the best possible ways were identified. This first phase also included the formation of an interview guide based on the thesis research questions and the department's other experience from participating in Purchasing Academy's courses, linking back to the main purpose. The purpose of the interview guide was to formulate questions to be able to extract relevant information. The interview guide was constructed, reviewed and refined in order to achieve the purpose.

3.4 Phase Two: Theoretical Framework and Empirical Data Collection

In the second phase the data collection was performed in parallel to writing the theoretical framework including major literature reviews. The main source of empirical data was qualitative interviews with employees within the purchasing unit, i.e. primary data. Furthermore, secondary data was received from Volvo Cars in the form of reports, presentations, and the intranet as well as from the Purchasing Academy employees. This information was important for comprehension of the organization, organizational structure, processes etc.

3.4.1 Theoretical Framework

Parallel to the interview process, literature was reviewed to find relevant theories and concepts to the theoretical framework. Therefore, Phase two also required major research in online databases for articles and books etc. Examples of keywords that were used during the literature review were: Purchasing Performance, Purchasing Orientations, Buyer-Supplier Relationships, Actors, Resources, Activities and Supplier-Interfaces. Online databases make a large amount of literature easily accessible (Bryman & Bell 2011). Databases such as Emerald and Proquest were accessed through the library at Chalmers University of Technology. Most of the material consisted of peer-reviewed academic articles from well-renowned journals in order to some extent ensure that the sources were reliable. Furthermore, academic books written by authors well known within their field were reviewed, since they were considered trustworthy. Additionally, benefits from the authors' educational background within Supply Chain Management aided the process of finding the necessary literature.

As the theoretical framework evolved, a need to find suitable analysis tools emerged since current literature analysis models were not adequate for the thesis' purpose. Therefore, a conceptual model was compiled, that is *Figure 6*.

3.4.2 Interviews

The second phase of this case study was initiated by performing semi-structured pilot interviews. The selection of pilot interviewees was decided in cooperation with Purchasing Academy based on their knowledge regarding open minded and easy to talk to interviewees. This was important to be able to test the interview guide and receive relevant feedback that could improve the interview process. The interviews were carried out with the interview guide compiled in Phase One, see *Appendix 2* for interview guides. Pilot interviews do not only test the questions, but also ensure that the interview method per se is suitable (Bryman & Bell 2011). Additionally, it provides the interviewers with valuable practice.

Since the main purpose of the interviews was to capture the ideas of the interviewee, the interviews were qualitative and semi-structured. Qualitative interviews are usually more unstructured and the focus lies on generality of research issues and the interviewee's own perspectives (Bryman & Bell 2011). Semi-structured interviews means that an interview guide is set, however questions might not be strictly followed in order and new questions might be posed if the interviewer picks up something during the interview. Regarding the interview guide, it can be seen more as a memo to make sure that all topics were processed. This type of interview structure allows for leeway during the interviews and discovering of new information, which could not be foreseen by the interviewers. Consequently, semi-structured interviews were deployed to ensure that interviewees were asked the same set of basic topics in order to, at least to some extent, be able to generalize from the interview results.

In order to assess the impact of the Purchasing Academy's activities the interviews were conducted with vice presidents, section managers and group managers as interviewees. The selection of interviewees were decided in cooperation with the Purchasing Academy since the managers were believed to have sufficient knowledge of the internal group improvements or deteriorations. Additionally, the interview sample included managers from both the Gothenburg and Shanghai offices as well as managers from different purchasing types and levels, ensuring that the sample of interviewees were arbitrary. The interviewees are listed in *Table 1*. A more detailed interviewee list can be found in *Appendix 1*. Strength of the thesis is that 54 interviews have been conducted with managers from almost all sections within the purchasing unit. Consequently, a holistic overview of the whole purchasing unit was enabled.

	Direct Purchasing (DP)	Indirect Purchasing (IDP)	Cost Estimating (CE)	TOTAL
Sweden	27 ¹	9 ¹	6	42
China	6	5	1	12
TOTAL	33	14	7	54

Table 1. Number of interviews according to purchasing type and country.

The actual interview process is illustrated in *Figure 11*. First the interviewees were selected in cooperation with Purchasing Academy as previously explained. Then a topic guide was sent prior to the interview and this was done in order to give the interviewees time to think and reflect before the actual meeting to be able to collect as good answers as possible. Besides interview invitations were sent out systematically to interviewees in different groups to assure to get a broad data collection in case some meetings would not take place. The arrangement of the actual face-to-face interview, which lasted for 30 to 60 minutes, was two interviewers, where one person's task was to take extensive notes, and one to interview. Additionally, the interviews were recorded if the interviewee allowed it. Having multiple interviewers allow the writer to observe reactions, responses, and assess the overall development of the interview (Bryman & Bell 2011). Furthermore, recording the interviewees allowed for a thorough examination to reduce the bias and to capture citations. The interviews were conducted in Swedish when that was the mother tongue of the interviewee; otherwise they were conducted in English. After each interview a short discussion was held between the interviewers to reflect upon key findings, new observations and other important outcomes in order to preserve all opinions. The interviewer taking notes at the interview compiled the notes together with complements from the recordings. Thereafter, the other interviewer read through the notes in order to secure that all opinions were collected, interpreted and confirmed. This way of working made two people confirm the data from the interview. Furthermore, at the end of each week the key findings from the interviews conducted during the week were discussed and summarized in order to identify new empirical findings. The summary of key findings was iterated during each week of the entire Phase Two.

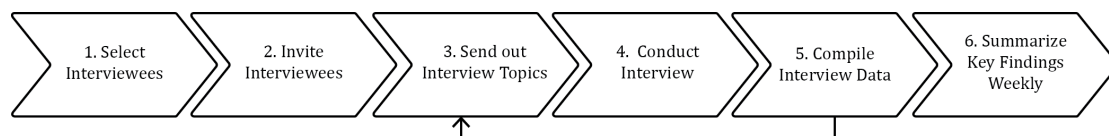


Figure 11. Schematic picture of the interview process.

Exceptions from the face-to-face interviews were the ones conducted with employees from the Chinese office. The Chinese interviews were performed either by phone, the communication system Microsoft Lync or, in a few cases, face-to-face since the interview time coincided with the

¹ Direct material purchasing (DP) is separated into Car Purchasing and Powertrain. One Vice President manages both indirect material purchasing (IDP) and Powertrain. Consequently, the VP had to be put in one of the two purchasing types and is therefore counted in direct material purchasing.

employee being in Sweden. The Chinese interviews were in most cases held in English. However, a few interviews were conducted in Swedish since it was the mother tongue of the interviewee.

3.4.3 Other Data from Volvo Cars

Information was also gathered from the intranet at Volvo Cars in order to complement or to strengthen other empirical data. Extracted information regarded for example processes, procedures, guidelines, responsibility explanations, organization structure, organizational charts and information about trainings.

Further, data was gathered from the Purchasing Academy employees. The data consisted of among others documentation and processes as well as oral information about the purchasing unit and Volvo Cars.

3.5 Phase Three: Data Analysis and Conclusion

The third phase included the analysis of collected empirical data with the evolved theoretical framework and conceptual analysis model as well as the making of conclusions and recommendations. Due to the large number of interviewees a structured way to manage opinions was needed. Consequently, the KJ-Method was utilized to group opinions regarding previous and future needed trainings. It is important to know that grouping opinions according to the KJ-Method was an essential part of the analysis in order to differentiate and cluster opinions.

According to Scupin (1997) the KJ-Method process is as following:

1. Gather all material from the data collection. Write down all opinions on sticky notes, one note for each opinion.
2. Sort and group all sticky notes into teams and assign each group with a descriptive name. Further, identify more generalizable families and iterate until a satisfying number is reached.
3. Connect and highlight interdependencies, relationships etc. between different families.
4. Explain the chart both verbally and in writing. The aim should be to integrate data but at the same time separate descriptions from interpretations.

The actual process for the KJ-Method was as following, see *Appendix 5* for illustrations of the process. First, all interview notes were printed on paper and the opinions were highlighted in different colors to distinguish the opinions. In this first step the groups were roughly grouped. The group topics at this stage were: Courses Desired, Skills Desired, Issues Regarding the Purchasing Unit, Issues Regarding Context and Content Before, Under and After Trainings as well as Issues Regarding Course Supply and Structure. For example negotiation skills and Microsoft Excel skills were desired skills so they were both put in the Skills Desired group. The selection of groups was based on the empirical data and the weekly summaries during the data collection.

Second, all highlighted interview opinions were written on sticky notes, where the sticky note color represented the highlighted color of the group. Similar opinions with the same highlight color were grouped into one opinion and written on one sticky note together with a count on number of instances per purchasing type. The aim was to highlight all opinions regardless the count to surface all opinions and create a holistic overview, even though some opinions were

only uttered by one single interviewee and others were mentioned, with different expressions, by several interviewees.

Third, when all highlighted opinions were written on sticky notes, the notes were placed on a large board to create a first overview. The overview aimed to allow for discovery of patterns, connections and denominators. At this stage a clustering of similar sticky note opinions was made. For example if one sticky note covered the desire for Microsoft Excel skills and another note covered the request for a Microsoft Excel course, these two notes were put into the cluster IT and Microsoft Office. The sticky note clusters were then structured into three major groups, which were used as base for the analysis.

After the collected empirical data was grouped according to the KJ-Method, the results in the group Future Skills and Purchasing Academy Trainings were analyzed with the evolved conceptual analysis model. The aim for the analysis was to understand how different identified groups affect the purchasing performance consequently creating differentiated importance or priority relating back to the main purpose. The other identified groups regarding Training Setup and Content as well as Training Supply and its Structure improvements are also explained and discussed further in Chapter 5, Analysis.

After performing the analysis, the identified areas were discussed in a wider context based on the Theoretical Framework. The discussion can be found in Chapter 6, Discussion. Thereafter, conclusions and recommendations to Volvo Cars were made. The identified areas in the analysis were prioritized to provide Volvo Cars an action plan. The prioritization of Future Skills and Purchasing Academy Trainings were made taking into account the following factors:

- How the gap affect the purchasing performance
- Extent to which the gap is present in the different purchasing types
- Extent to which the gap is present in Sweden and China

The prioritization of Training Setup and Content as well as Training Supply and its Structure were made based on the following parameters:

- The gap's relevance to the Chapter 6, Discussion, i.e. purchasing performance, interfaces and education within the purchasing unit
- Extent to which the gap is present in the different purchasing types
- Extent to which the gap is present in Sweden and China

3.6 Discussion of quality and validity

Validity is one of the most important criteria when doing research and concerns the integrity and conclusion of the research (Bryman & Bell 2011). Basically, validity answers if the research is observing, identifying or measuring what the research aimed to investigate. It can be further categorized into external validity and internal validity. External validity concerns the fact if the results of the study can be generalized in other setting than the own research. Internal validity concerns the match between theory and empirical observations and how believable the findings are. Moreover, validity is closely interlinked with reliability. Reliability concerns the question whether or not the research is repeatable, thus the degree of dependability. Research also needs to achieve objectivity, i.e. confirmability, by acting in good faith and reducing the bias.

According to Anderson, Dubois & Lind (2014) to ensure validity in case studies where the research concerns matching theory and empirical data, three issues resulting in three balancing acts need to be considered. The first issue, i.e. the arbitrariness of the case, relates to how to combine theory and empirical data into a substantial case. The second issue, i.e. the issue of selectivity, relates to communication, transparency of what should be presented and how the case was executed. The third issue, i.e. the issue of analytical generalization, relates to generalizability outside the case.

To ensure good validity and reliability several actions were taken. The systematic combining approach allowed for simultaneous evolvment and iteration of theory, empirical data and framework to secure the right match and direction. A major reason for deploying the iterative way of systematic combining was to secure the validity of the report by always questioning if the thesis was progressing in the right direction as new information was received, i.e. the arbitrariness of the case. Continuous meetings with tutors both at Volvo Cars and Chalmers University of Technology were held in order to stay on course and to get objective opinions. Further, methodology and crucial decisions of the thesis were carefully considered to ensure what and how the case was interpreted and executed, i.e. the selectivity of the case. Moreover, information received and identified were always interpreted and investigated by more than one person in order to match and direct the thesis, but specifically to assure the quality. Weekly summaries of the collected data to reflect on new and old findings were made. Additionally, the interviews were conducted with multiple interviewers and recordings were made. These are only a few examples of the attempts to secure quality and credibility of the thesis.

Triangulation refers to using more than one method, source of data collection or theoretical perspectives (Bryman & Bell 2011). According to Ghauri & Grönhag (2005) triangulation can improve the accuracy of judgment and consequently improve the result of the thesis. To improve validity, triangulation can help or in some cases it is inevitable not to have it. Nonetheless, one of the major benefits of using triangulation is the fact that it generates a complete, holistic overview in a context-based description. In case studies this is exceptionally important due to the fact that several different sources of information need to be validated. However, difficulties with triangulation can for example be to judge whether or not the different methods for data collection is consistent. Another example can be if different sources provide contradictory results. Consequently, using triangulation, even though the same result might not have been achieved, still it creates a nuanced understanding than before and can highlight new issues that can be answered by further research.

In the context of the thesis, different methods such as interview and literature reviews were made, thus method triangulation was used. By interviewing people from different departments, collecting data from different sources, data source triangulation was used. Further, theory triangulation was also deployed as multiple theories were investigated and combined.

Another quality issue that aroused was the interviews with Chinese employees that were executed via phone or Microsoft Lync. Since these interviews were conducted in a non-mother tongue language and to some extent lacked personal interactions, interpretation of the answers was sometimes difficult. Nevertheless, the best possible outcome of the situation was strived for and the interviewees' opinions mattered as well, but the information from the face-to-face interviews were easier to interpret due to greater personal interaction.

The sources used for information gathering were literature and interviews. To ensure that the literature review was performed with trustworthy sources supporting this thesis, literature was extracted from well-known databases and well-renowned authors. The literature was all accessed through the Chalmers University of Technology library. Further, the interviewees were selected in accordance with Purchasing Academy employees since they possess good holistic knowledge of who should be interviewed.

4 Empirical Data

This chapter aims to present data gathered during the empirical data collection and answer Research Question 1. First, general data on Purchasing Organization and Purchasing Academy will be presented. Thereafter, data from each of the purchasing types will be explained, i.e. Direct Material Purchasing (DP), Indirect Material Purchasing (IDP) and Cost Estimating (CE). Each purchasing type follows the same structure through first presenting data related to Research Question 1, namely Sourcing Process, Supplier Relationships, Supplier Selection, Goals and KPIs. Thereafter, data on Previous Training Participation and Future Skills Needed, Future Activities Needed from Purchasing Academy as well as Future Activities Needed from Purchasing Unit.

4.1 Purchasing Organization and Purchasing Academy at Volvo Cars

At Volvo Cars the purchasing function is grouped with manufacturing, and consequently named Purchasing & Manufacturing. The president of Purchasing & Manufacturing, Lars Wrebo, is titled Senior Vice President (SVP) and reports directly to the CEO, Håkan Samuelsson. Apart from Purchasing & Manufacturing there are ten functions, both primary and support functions, that report directly to the CEO. Within Purchasing & Manufacturing there are several departments responsible for different parts of manufacturing and purchasing, see *Figure 12*. The selected interviewees are from four of the departments, namely Car Purchasing, Powertrain & Indirect Purchasing, Programme Management & Purchasing Development and China Operations. The managers of the departments are titled Vice President (VP).

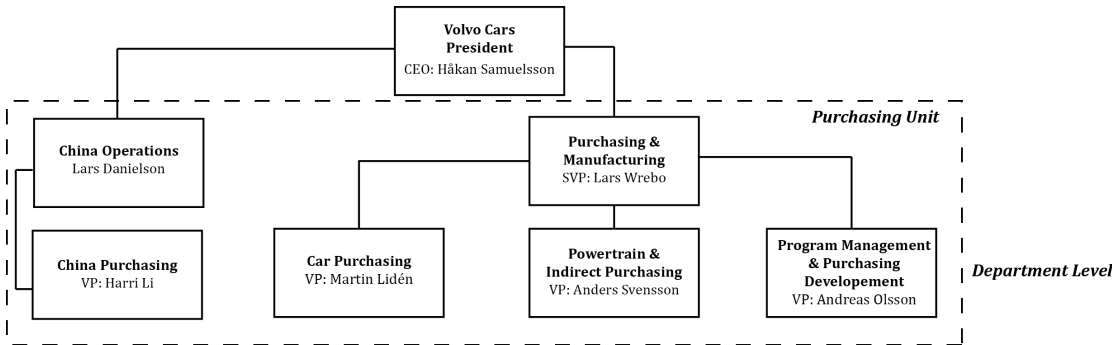


Figure 12. The organization of the purchasing unit at Volvo Cars.

The departments, in turn, contain several sections, i.e. sections are the organizational sub-level to departments, see *Figure 13*. The manager of each section is titled Director Purchasing. However, in order to ease the understanding of the reader the Director Purchasing will hereafter be referred to as Section Manager. The organizational sub-level of sections is group, i.e. each section consists of several groups. A Manager, hereafter referred to as Group Manager, runs each group. The employees within each group are buyers of different kinds, i.e. Product Buyer and Commodity Buyer, distinguished on among others the strategic level of the work.

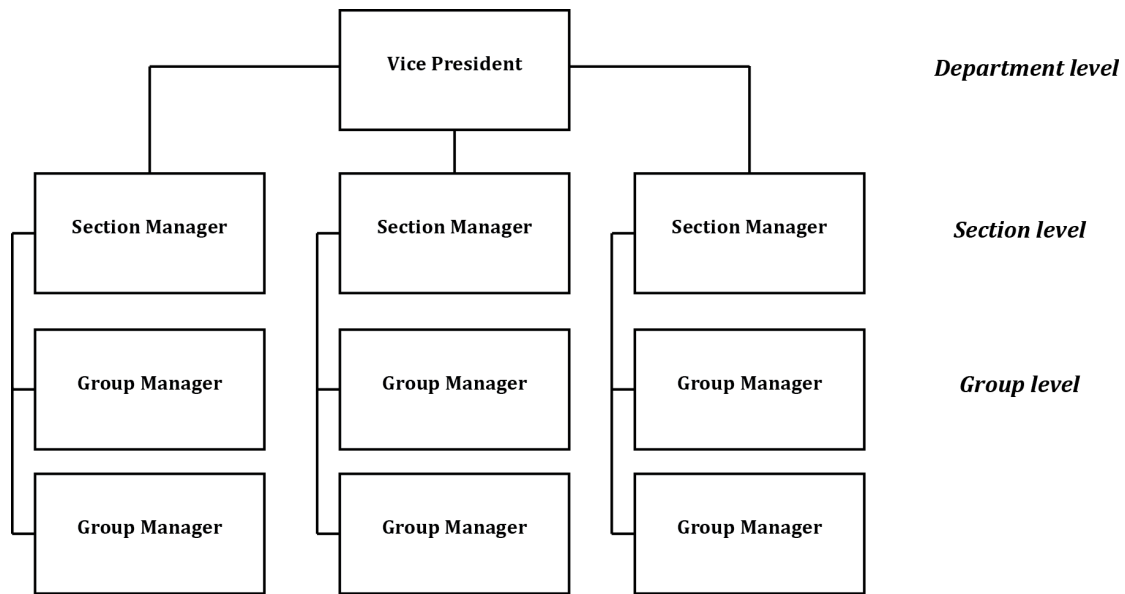


Figure 13. Schematic representation of the organizational levels in the purchasing unit at Volvo Cars.

Car Purchasing and Powertrain are the parts of the organization managing the direct material procurement, whereas Indirect Purchasing, as the name suggests, manages the indirect procurement. The section Cost Estimating, which belongs to the Programme Management & Purchasing Development department, manages the cost estimates.

The purchasing organization in China, named China Purchasing, is structured similarly, but is only one department containing the DP, IDP and CE sections. The VP of Purchasing China, Harry Li, reports to Head of China Operations as well as to SVP of Purchasing & Manufacturing. China Operations, in turn, reports directly to the CEO. Henceforth, the descriptions of the organizations, both in Sweden and China, and the number of employees refer to the parts of the organization with which interviews have been conducted.

4.1.1 Purchasing Organization and its two internal surroundings

Two different kinds of internal perspectives are presented in this chapter. The first internal perspective is internal at the purchasing unit see *Figure 13* above. It explains interactions within the purchasing unit, for example between an indirect buyer and a direct buyer. The other internal perspective is within the firm Volvo Cars. It explains the interaction between different departments within Volvo Cars, for example between the purchasing unit and R&D. However, further on in the thesis the second internal perspective will be considered unless explained otherwise, see *Figure 8* in Chapter 2, Theoretical Framework, for further explanation of the second internal perspective.

4.1.2 Purchasing Academy

The Purchasing Academy group is part of the Programme Management & Purchasing Development department. The group was established in April 2013, when a need to improve the purchasing activities was identified. The mission is to create an efficient and clear competence development as well as career path processes. The unit has the vision to get the best purchasing employees within the automotive business. Purchasing Academy offers trainings that are complementary to the trainings offered to the entire firm by the Human Resources department.

Purchasing Academy has two main employees working in the Swedish office, i.e. Susanne Phillips who is the manager, being responsible for the group and Malin Gullstrand whom has the Process Manager role. Currently Purchasing Academy is working with for instance exchange program and capability modules, i.e. different types of courses that address improvement areas in purchasing capabilities, previously identified by external consultants.

4.1.3 Purchasing Academy Trainings

A previous work done by an external source concluded that there was a need for the purchasing unit to increase the competence in several different areas. As a result, Purchasing Academy implemented several trainings, see *Appendix 3* for explanation of the trainings. Three of the trainings, the so called capability modules, were set up as core trainings for the purchasing organization during last year. The modules cover different areas of the previously identified competence gaps. The three modules contain lectures by internal trainers, mixed with role-play and discussions during two days, per module. A goal was established where employees had to participate in two out of the three trainings. The three trainings are named Clean Sheet Analysis Training, Fact Based Negotiation and LCC (Low Cost Country)/China Sourcing Training. In the Clean Sheet Analysis Training's, employees learning objective is to make clean-sheets, i.e. cost breakdowns for all commodities. Furthermore, RFQs with transparent cost comparison are done and another objective is to generate ideas for efficient cost reduction. The Fact Based Negotiation training that aims to provide employees a thorough cost understanding, targets and arguments for all negotiations as well as best practice approach to source at low cost estimations. The LCC/China Sourcing Training aims to give employees a systematic approach to LCC/China sourcing, sourcing risk mitigation plans and sourcing strategies per commodity for LCC/China.

It is important to keep in mind that the different courses or trainings have a higher or lower usability regarding the workers primary task and everyday work. Some courses such as the three capability trainings, including Clean Sheet Analysis Training, Fact Based Negotiation, and LCC/China Sourcing Training are intended to help the workers in their primary and everyday operational work. Other courses such as Design Show, CSR, Volvo Innovation Area, Drive-E are important to keep the workers up to date with the current trends, markets, product knowledge and their motivation. Additionally, there are mandatory courses such as the New Salary System that explains how the new salary system works so that all employees get the same information.

The purchasing organization in China, is currently under construction. This is due to the fact that they are trying to build a new organization and manufacturing sites from scratch. That means that focus is on building a solid foundation for the organization, factory and acquiring a good supplier base for the future. Trainings here are more of a fundamental kind to secure a good organizational foundation. Therefore, in the following part when there are significant differences due to this, Chinese and Swedish organization opinions will be expressed separately. Otherwise the opinions expresses further in this chapter can be assumed to be derived from both Sweden and China i.e. the need exists at both sites. Additionally there are sometimes differences in needs between buyers, cost estimators and managers, which is explained further in this chapter.

4.2 Direct Material Purchasing

Direct Material Purchasing (DP) handles the sourcing of all parts and all services from the suppliers of direct material to the manufacturing of the cars. The responsibility includes sourcing to new cars as well as to existing vehicle lines. Further, responsibilities are among others to develop and maintain supply base strategies, make price agreements and manage supplier relationship. The DP interviewees in Sweden are from two departments, namely Powertrain and Car Purchasing. Powertrain consists of three sections with a total of five groups. Car Purchasing consists of six sections with a total of 15 groups. There are around 130 employees on different levels within the interviewed part of both departments. Within the DP interviewees' organization in China there are one section and six groups, with a total of 45 employees. The interview sample consists of 31 managers, of which six are employed in China

4.2.1 Sourcing Process

DP has a sourcing process distinct from IDP. The process starts with a Sourcing Need, passes via the steps Sourcing, Ordering and Quality Assurance and ends with an Approved Product, see *Figure 14*. The focus of the study is the first step, Sourcing, thus this one will be described further.

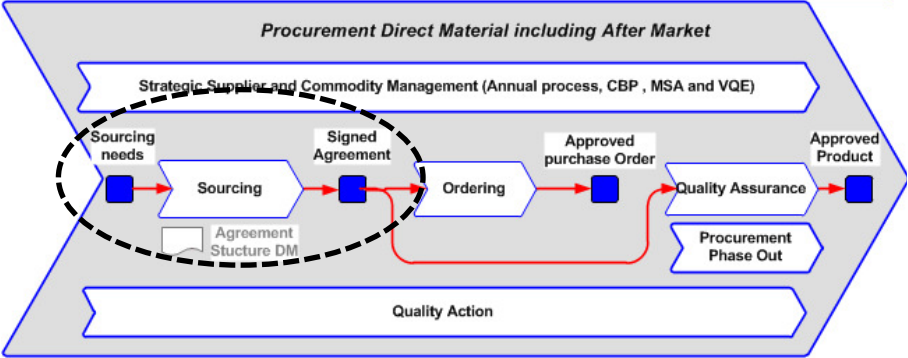


Figure 14. The sourcing process of DP. The dashed line indicates the focus of this study.

The Sourcing step contains the sub-steps Sourcing Planning, Sourcing Approach, Sourcing Quotation, Sourcing Consensus and Signing Agreement, see *Figure 15*. It is a process used for new car models and model year changes. Sourcing Planning aims to establish and agree on a plan for purchasing activities. Employees from different functions at Volvo Cars are involved, e.g. buyers, PD (Product Development) engineers, SQM (Supplier Quality Management) and logistics engineers. The output is a decided sourcing plan, which is input to the next sub-step, Sourcing Approach. The aim of Sourcing Approach is to identify potential suppliers and methodology according to the commodity business plan. More or less the same functions as the previous step are involved in the work. The output is a decided sourcing approach, which in turn initiates the next sub-step, Sourcing Quotation. Sourcing Quotation involves the retrieval of RFQs from the approved suppliers and the suppliers' presentations of the quotations. The sub-step involves buyers at different seniority levels, PD leaders and design task leader. The process output is quotation, which is the input to the following sub-step, Sourcing Consensus. This sub-step describes how to choose a preferred supplier that meet Volvo Cars demands on time, technique, cost and quality. The consensus is reached at a forum called Supplier Choice Meeting, where e.g. presenters from purchasing and other functions and their managers, purchasing VPs and stakeholders from other functions are present. The output from this sub-step is an agreement package ready for signature. The next sub-step, Signing Agreement, aims to clarify how

agreements should be signed according to an agreement decision tree. Thus, the output from the activities is a signed agreement. Thereafter the signed agreement is used to initiate the next step, Ordering.

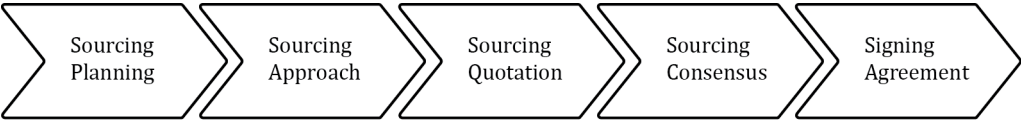


Figure 15. The Sourcing steps of the sourcing process of DP.

4.2.2 Supplier Relationships

The supplier relationships that DP seeks to have is dependent on the kind of product. The relationships vary from transactional for simpler and standard products to close for more complex products. Examples of products with a transactional relationship are batteries, cables, and plastic parts. For these kinds of products the knowledge and skills are available in-house, which results in that suppliers are commonly competing with each other and the supplier offering the lowest price wins the order. Examples of products with a close relationship are air bags, active safety, and door modules. This kind of relationship is the most common at Volvo Cars and is characterized by long-term, strategic collaboration, information exchange and research and development of the products. Reasons to why a close relationship is favorable is that it would be costly for Volvo Cars to develop the product alone and that there are few available suppliers on the market. However, one VP states that DP is trying to move from close relationships, which has been most common at Volvo Cars, to arm’s length distance relationships. The move derives from the competitive automotive industry, which forces the company to reduce costs since the customers are not willing to pay for higher costs. Further, the VP exemplifies through a procurement of an oil pump. The previous year an oil pump had been procured from a supplier whom Volvo Cars has had a relationship with for a long time. This year another oil pump had to be procured. By buying a prototype of the oil pump from a new supplier, many suppliers handed in quotes and Volvo Cars was able to procure the pump at a price 20% lower than previous year. The VP makes a parable:

“It is just like sports. If there is no competition, there will not be any world record. But if there is competition, there will be a world record.”

Further, it is important to manage the supplier base so as the large suppliers are not given too much power. One manager describes that the group has mostly close relationships, but that it is important that the relationships are not too close since it should be possible to switch supplier whenever needed. Another manager emphasizes the importance of creating win-win situations so that the relationship is beneficial for both Volvo Cars and the supplier.

4.2.3 Supplier Selection

A supplier selection is, as indicated in the purchasing process, initiated by the need for sourcing a product, i.e. no supplier is selected if there is no product initially. When it comes to determining which supplier to select, there are several criteria that are considered. Some of them are order qualifiers, whereas others are order winners. Order qualifiers are ISO certifications, e.g. ISO 14001, supplier’s financial situation and ownership as well as competency and capacity to manufacture the part. Further, quality and meeting technical specification and

logistics requirement are also considered. The supplier has to be able to keep Volvo Cars' time plans. Some groups also check customer references.

Order winner is mainly cost. The majority of the groups state that it is the landed cost, i.e. the unit price plus associated transportation costs, or the TCO (total cost of ownership) that counts, in which for example supplier location is relevant as it directly affects transportation cost. Other costs that are incurred when sourcing are tool and development cost. Another perspective is the one of being able to leverage the business with the supplier in order to achieve future cost reductions.

One Group Manager mentions that cost is more important when procuring small components, whereas technical competency for development and cost are relevant when procuring more important, complex and large parts.

New suppliers are not introduced that often. Some managers state there are a few new suppliers a year, others cannot say. However, Geely's acquisition of Volvo Cars brought in some new suppliers. The start-up of plants in China also required some new local suppliers since some part, e.g. cockpits, are too big and bulky to ship. New suppliers are also introduced when there is a need for new technology in the cars.

4.2.4 Goal and KPIs

Goals for DP are generally set on a high level in the company and then broken down and distributed to departments to sections to groups so each level contributes to the overall targets. The goals are set on different time horizon, but focus for this study is the goals of one year. The main focus is set on the commercial part, which consists of goals of percentage cost reduction on parts, tools, and OPC (other purchasing contributions). Another cost goal is to source the parts and tools to a cost that differs a maximum of 3% from CE's estimate. Further, in order to evaluate available suppliers on the market, to reduce the number of suppliers and to put pressure on existing suppliers, buyers are required to perform a certain number of market tests per year. One mean towards reducing cost is that Volvo Cars can assist the suppliers in identifying inefficiencies in their manufacturing in order to decrease the suppliers' manufacturing cost, which have a direct effect on the price Volvo Cars pays.

There are also goals on quality, more specifically improved delivered quality. Further, there are goals concerning the environment, i.e. that the supplier base should be sustainable. Additionally, there are goals to develop strategic plans, so called commodity business plans, for selected products. The purchasing work involves many stakeholders, e.g. customer and R&D, hence a goal is to make sure stakeholders and buyers are aligned. For China specifically, there is a goal to reach a higher localization rate and to develop the organization, as it is fairly new.

Other goals concern work environment, employee health and diversity in the group. Further, employee development is a goal, e.g. last year employees had to take part in two out of the three capability courses offered by Purchasing Academy.

Goals of a more short-term character are to deliver according to the business plan, the time plan for each project and the yearly goals. Additionally, mentioned short-term goals in the Chinese purchasing unit are to keep manufacturing going without any discrepancies, focus on commercial reduction, deal with supplier issues and to improve the localization ratio.

Managers accentuate different key factors to why they succeeded or failed to reach the goals last year. Several managers mentioned focus on negotiation with suppliers, create detailed plans per supplier and sourcing additional volume or new projects from suppliers as important factors. Other factors are to perform market tests and to give business to new suppliers. The right people in the group, creative, motivated and persistent employees as well as team spirit with good management are also brought up as important reasons to reach goals. Further, an awareness of current situation within the team is valuable. Another manager mentions the move from close relationships to arm's length distance relationships as a key to success.

4.2.5 Previous Training Participation, Effects & Opinions

From the current training supply, DP has participated in e.g. the three capability trainings Fact Based Negotiation, Clean Sheet Analysis Training and LCC/China Sourcing Training, as well as the courses Introduction to Lean Production, Corporate Social Responsibility, PPGTC (Product Purchasing Terms and Conditions), China Growth Step 2, V526 Project Presentation, V526 Design Show, Test Driving, LEQM Sourcing Tracker Planning and Annual Salary Information.

Before the trainings the expectations were to get a better understanding for other departments, broader and diversified purchasing skills and new ways of thinking and generating "AHA" experiences. One manager expressed:

"It is important that we understand that every kroner counts".

Most managers lacked time to prepare and talk about expectations before participating in the courses. The same goes for the follow-ups and reflections, which to some extent lacks today.

In the China office, Microsoft Excel training effects are very positive. One manager commented on the skills a buyer embraced from a Microsoft Excel course:

"Now she got lots of knowledge on how to use Microsoft Excel in the right way and how to improve working efficiency."

Most managers could see effects in general from trainings, but had difficulties to specify what effects that had occurred. In general, the capability courses have been well perceived due to the fact that the scope is set in a Volvo Cars context, it increases competence quickly and gives a good reminder of basic skills. However, there have been some remarks regarding the capability courses. Opinions were raised that that the trainings should be more frequent and run on a more regular basis. There were also some opinions expressing that the courses were suitable for new employees, but for more experienced employees it was rather basic. Additionally Fact Based Negotiation has generated some positive effects in terms of improved negotiation skills and new ways to approach problems.

Courses in product knowledge and test-driving for e.g. design show are important for the motivation but not always so usable for the everyday work.

Another appreciated course have been PPGTC. It is a course covering terms and conditions of contracts and is rather important knowledge for buyers. This is due to the fact that a supplier can later in the selection process be discarded as a result of not fulfilling initial basic conditions.

In China the PPGTC courses were very much appreciated due to the fact that it introduces the employee to the philosophy of Volvo Cars and its way of working.

For the capability courses, internal employees that possess great skills in their field have been teaching. However, some internal teachers have experienced that teaching has been fun but has consumed a large amount of time. It has been appreciated to have internal teachers but the structure and time planning must be improved.

The purchasing groups at the DP department consist of different buyers ranging from junior to senior in terms of purchasing experience. This means that there are different opinions regarding the current education, depending on the previous experiences the buyers possess. Furthermore, there are different buyer roles within the group, Commodity Buyer and Product Buyers. Due to the differences in experience and buyer role, senior buyers expressed that some of the capability trainings were fairly basic but they serve as a good reminder. Consequently, a little more attention to further develop senior buyers' trainings with more advanced levels is desired.

Opinions regarding the education per se managers are for example that there is a need for education from external sources. As one manager said:

"We need more competences influences, benchmark data and top of the line practices from external sources".

Furthermore trainings are considered important and making it compulsory is one approach to secure participants. Participation in trainings is in many cases easy to plan, but when it is time to take the training it is deprioritized. Often this is due to the lack of time and a priority to handle other more urgent matters first. As one manager said:

"Educations are important in the long-term. But in the short term it is more important to make sure material is supplied in the factory."

Furthermore one very much appreciated thing has been lunch seminars. Managers have pointed out that this is a simple way to get some new inspiration without having to plan too much in advance. As one manager clearly stated:

"Lunch seminars are good as they provide energy kicks and new ways of thinking."

4.2.6 Future Skills Needed

Within DP, development of purchasing skills is needed. This includes technical knowledge, cost breakdown and negotiation skills. For seniors, this kind of knowledge has to be maintained and continuously updated. One manager expressed that buyers need skills and tools that facilitate cost optimization. Regarding negotiation skills, this concerns preparation for negotiation as well as skills during negotiation and the work afterwards. Furthermore, for some buyers in DP, specialist competence in negotiation is needed. Buyers also need more commercial understanding and how results are linked to get a better overview on what affects bottom line. It is also important to understand purchasing's support functions, such as CE and quality technicians. Product knowledge is essential as well, since the employees are ambassadors for Volvo Cars, both towards suppliers and in private life.

The buyers also need to understand suppliers and their production and being capable to do supplier analysis. Being able to do market analysis is another desired skill. Furthermore, buyers need to learn more about the Volvo Cars process and system. Other skills that need to be improved are self-awareness, presentation, negotiation and Microsoft Office, including advanced

Microsoft Excel. Buyers need to become more strategic and think long-term instead of having a “*put out fire attitude*”, focusing more on short-term. Business acumen and the ability to have a holistic understanding and understanding of stakeholders have been expressed as skills needed. Buyers also have to be able to do networking to get better information. For managers, leadership, coaching and communication skills are desired. Chinese managers specifically see the need of presentation and communication skills, leadership skills as well as the ability to do market analysis. Furthermore, Chinese managers also desired better knowledge of Volvo processes among buyers.

4.2.7 Future Activities Needed from Purchasing Academy

Trainings that are desired for buyers are IT application handling courses and Microsoft Office applications, such as Microsoft PowerPoint and Microsoft Excel. Most buyers know the basics of Microsoft Excel, but few know how to use it more efficiently and make presentable Microsoft Excel sheets. Furthermore, trainings in soft skills should be introduced, such as self-awareness, behavior, conflict management, stress management and attitude and motivation courses that focus on individuals. Internal trainers could carry out this kind of education and when it comes to the Microsoft Office package, just a few hours will be useful. Other training needed is lean at the office as well as program management, to better understand the process of the procurement and deliveries at the different gates. There could for instance be a course where one look at the whole purchasing function and do a practical case for a product, evaluating what the difficulties are and where there is competence lacking in the process.

Business acumen is another useful training, which currently is a pilot training and might still need some adjustments. Perhaps it should be offered for key users as they learn how to evaluate suppliers etc. Additionally, increased product knowledge and understanding of cost drivers in manufacturing are requested. Buyers also need training in understanding KPIs and how to interpret financial results.

Training regarding negotiation is desired as well, including the phases before, during and after negotiation. One manager specifically mentioned negotiation courses offered by SILF (Sveriges Inköps- och Logistikförbund). Another manager explained that it does not necessarily have to be in the form of courses, instead the buyer can follow a coworker to see how that person works to succeed in his/her negotiation. The negotiation trainings also need to have a more strategic focus and take the education to the next level. An idea is to have negotiation courses modularized over several years as it is a skill that needs to be maintained and refreshed. As buyers often need to convince others, sales trainings, understanding of customer and supplier views and incentives as well as presentation technique trainings are desired. A generic course in supplier analysis has been requested and an activity for better supplier understanding is supplier visits. Furthermore, continuations of the capability courses have been asked for.

More leadership trainings should be offered for the buyers that have the potential to become a leader, but not only when they have already become one, but also as some people have a team leader role but are not responsible for personnel. The leadership trainings should include education in how to talk with people during different circumstances, conflict management and how to behave and talk professionally with subordinates.

Understanding of other cultures such as the Chinese is wished for. Seminars with people that have been on exchange in China should be held where the employees talk about their main

takeaways and share their experience. However, there should also be seminars about other countries where cultural and political situations are discussed. As one manager said:

"Pressure is put on that we have to start working with these [countries] and we run in there blue-eyed and without knowing at all what the business culture is like in those countries."

More training should be provided on a regular basis, and the trainings also need to be updated in order to keep up with development and get new inspirations. One manager described that:

"Sometimes it feels like our internal course supply stagnate after a while, it is not renewed all the time."

Another important course that should be added is the understanding of goals, as a manager expressed:

"One important parameter in delivering according to goals is to educate the buyers in what we actually are measured in. If you do not know what you are measured on, you cannot optimize your results."

Regarding trainings for group managers, trainings in the IT systems SI-Plus and LEQM are desired to better understand the activities they perform. Other trainings that managers need are related to leadership, which could be in the form of leadership days where the managers discuss issues with each other. The topics could concern management of employees including giving and taking feedback, how to read financial results and how to be in middle management. The managers need to learn how to delegate more, how to get more support and help as well as how to make employees more motivated, to make them put the extra effort in their work. Another idea is to have inspiration days for leaders where people that are leaders come and talk about their experiences and challenges. The current process for leadership trainings is complex and troublesome, but it does not have to be that advanced. The course supply for group managers needs to be improved. Another suggestion is to have mentor programs or shadowing trainings for managers. One manager described the idea of having a program for managers, where they study a specific subject to develop personally. Afterwards they should present and share their knowledge, e.g. during a seminar to enlighten others and connect back to the program.

When it comes to the structure of trainings, managers wish for packages on different levels for the buyers depending on their experience. The packages should be generic education plans with a certain time span. New employees should have an introduction package to get an understanding of Volvo Cars, how the company works, what people do and why. The introduction package should also educate the new employees how to use the IT systems, such as SI-Plus, as well as general purchasing skills. The knowledge can in general be acquired through mentors and managers, but having a course for this is still useful. It is important that it does not take too long before the new employee can take the training, however, taking the training too early is neither beneficial as the buyer needs to have some knowledge to completely utilize the knowledge acquired. Thus, a balance has to be found regarding the timing of different courses in the package. Managers in the Chinese office also specifically desire a course package for newly employed buyers. The courses should be about purchasing skills and project management. The introduction package could for instance span for three years, and this should be followed by an advanced package, which is aimed for experienced buyers to develop their purchasing skills as

the current supply for experienced buyers is limited. Courses included in this package should be about personal development, rhetoric and leadership. The supply needs to be a mix of functional courses, e.g. Microsoft Excel or system courses, and refreshments of negotiation skills as well as personal development to get new aspects and think in new ways. The following package should be aimed towards the different types of managers within purchasing, having a more strategic focus. One of the packages could be for all managers, with a deeper version of the ITM educations, including topics such as communication, coaching and leadership development at Volvo Cars, e.g. how to communicate the Volvo Cars culture, i.e. Aspired culture. Another package could be directed towards specially selected managers, a program similar to that of Ford's Global Leadership Program, which is a leadership program Volvo Cars previously participated in when the company was owned by Ford. In combination with the generic education packages, customized training plans according to individual needs are also needed.

The courses need to be adjusted so they are suitable for different roles in a group. The groups should be mixed with people from DP, IDP and CE to the extent that it is possible, for better understanding and knowledge sharing. Additionally, the courses should be linked to the way Volvo Cars works, in order to connect theory with reality. However, the trainers should be internal as well as external, professional trainers since the internal ones do not always have sufficient knowledge on the subject. Furthermore a suggestion was also to have an exchange of internal trainers between China and Sweden. Several managers expressed that external trainings with external content and context would be appreciated. Moreover, the trainings should be in different forms, e.g. seminars, role-play and lectures. The location of the trainings should also vary, with both on-site and off-site trainings. Additionally, too many training days should be avoided.

There needs to be more structure on the learning process, to make people remember things better in order to utilize the knowledge acquired at courses. This could be facilitated by reflection before, during and after trainings. Several managers mentioned that the only reflections done currently are the small talks with colleagues by the coffee machines. As one manager expressed it:

"There are actually quite a lot of discussion among the employees by the coffee machine after someone has participated in a course. It might not be in a structured manner, but I do not think that matters. The employees discuss what was good and what was less good."

Managers need to do follow-ups after the educations and guidelines how to do this is desired. Furthermore, ways to understand the progress of the buyers should also be created and one could for instance have diplomas or licenses to prove their capabilities. A Chinese manager also mentioned the idea of a purchasing license to prove the competence. A Swedish manager described the idea of a mini Purchasing MBA, which would be a university based education where university lecturers come to Volvo a few days a week for the lectures. The education would include assignments, homework and examination for development, ultimately resulting in the diploma. This is a measure to increase the retention of buyers and decrease the employee turnover.

There were wishes from managers to have the LNA (Learning Need Analysis) more than once in a year as a lot of things can happen during one year. Furthermore, more coaching and follow-up

from Purchasing Academy was desired. The information in LAD (Learning Activity Directory) is extensive with great supply, making it difficult to find specific needs. One manager expressed that the time planning for trainings need to be improved. The lunch seminars that cover different subjects have previously been appreciated and are desired for the future as well.

Regarding the Chinese office, a manager desired internal as well as external trainers. Another idea was to have an exchange of internal trainers between Sweden and China. Furthermore, it was suggested to have trainings in Chinese, to facilitate the understanding for employees and make them more engaged.

4.2.8 Future Activities Needed from Purchasing Unit

Concerning the needs organizationally, managers see the need of a right set up of the organization and closer cooperation with colleagues in Europe. A Chinese manager desires more exchange of information and experience between the Chinese and Swedish office to learn from each other, as explained:

“There is a lot of competence within the organization and it should be shared more so one can give and take from each other.”

This is in line with the opinion of a Swedish manager, whom expressed:

“We are not good at making use of each other and the competence available. There is a lot of knowledge internally to utilize.”

The exchange of experience is among other things, enabled by the employee rotation between Sweden and China, which has been appreciated by several managers. Furthermore, by understanding the work of other groups, both within departments and outside, a better match can be achieved. Additionally, buyers need to have closer collaboration with stakeholders. Currently, the communication among groups and sections is limited and could be improved by having mentor program where employees exchange knowledge. There should be more networking opportunities both inside and outside the company.

Managers have asked for clearer goals and goals breakdown, decreasing the level of personal interpretation of goals. Furthermore, it was explained that buyers need more mandate and roles need to be better distinguished, with less operational work for managers. Regarding negotiations, there was a desire to have more time for negotiation preparation, i.e. longer negotiation process. One manager requested guidelines for leadership and development and another manager’s opinion was that the company has to invest more in leadership talents.

The internal competence needs to be complemented by external competence, e.g. through influences from outside and benchmarking as well as recruiting external employees. Market awareness needs to be improved in order to do analysis of the surroundings, which could be acquired through access to automotive magazines or regular reports from auto fairs. Although web-access to automotive magazines is available, it is not clear how to acquire this. Furthermore, better IT systems that allows for data analysis is desired, as well as a database showing which suppliers manufacture what to whom. The organization should also encourage and give buyers the opportunity to take external courses.

A Chinese manager saw the need of distinguishing the purchasing tasks better, as expressed:

“Buyers have an endless job. Allocate the right task to the right buyer, adjust to their personal skills and personality.”

Furthermore, the time planning for trainings need to be improved, as some buyers cannot attend trainings due to urgent matters, e.g. a supplier meeting. Additionally, there should be KPIs linked to training in order to enhance the motivation for training among employees.

4.3 Indirect Material Purchasing

Indirect Material Purchasing (IDP) is the department sourcing indirect products and services, i.e. products and services that are not a part of the car manufacturing. In order to perform the work the department must have a close collaboration with stakeholders in other corporate functions. A major difference between DP and IDP is that IDP does not have its own budget, instead the purchases are performed utilizing the internal customer’s budget. The interviewees within IDP in Sweden are from three different sections, which in turn consist of three, three and two groups respectively. The groups are responsible for e.g. Logistics, General Services and Machinery. In total the three IDP sections employ around 45 people on different levels. IDP interviewees in China are from one section with 4 groups employing around 30 people. In total interviews with 14 managers, of which five are employed in China, on different levels within IDP have been conducted.

4.3.1 Sourcing Process

IDP has a sourcing process distinct from DP. The IDP process consists of two main steps, Sourcing and Ordering. The process is initiated by a Sourcing Need and ends with an Approved Purchase Order, see *Figure 16*. The focus of the study is the first step, Sourcing, thus this one will be described further.

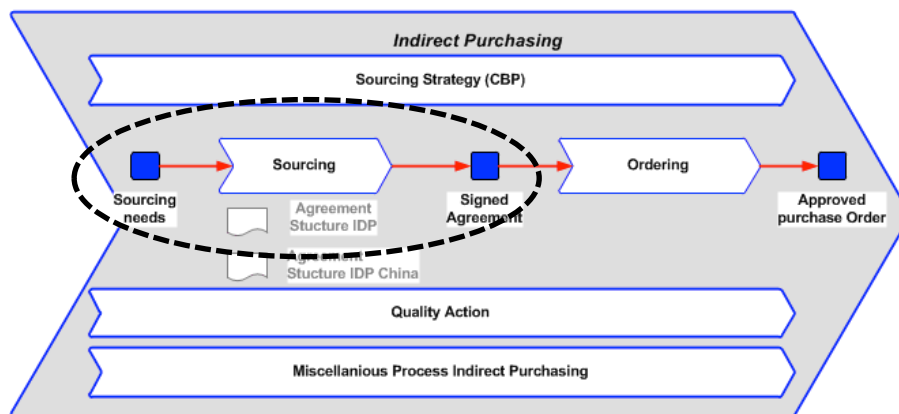


Figure 16. The sourcing process of IDP. The dashed line indicates the focus of this study.

The sourcing step, also known as the 7-step process, was recently implemented. It consists of seven sub-steps, Identify Sourcing Opportunities, Develop Commodity Profile, Develop Commodity/Sourcing Strategy, Identify Selection Factors & Screen Suppliers, Conduct RFQ, Evaluate & Negotiate Agreements and Implement Agreements, see *Figure 17*. The seven steps can be categorized into three overall groups, namely Develop Sourcing Strategy, Qualify – Negotiate – Contract Suppliers and Implementation. The first step, Identify Sourcing Opportunities, aims to define the methodology to be used for the sourcing and plan what kind of research that has to be conducted. The second step, Develop Commodity Profile, seeks to

describe the research requirement and analyze the industry, the customer and the relevant suppliers. The third step, Develop Commodity/Sourcing Strategy, strives to compile a strategy based on the previous research. The fourth step, Identify Selection Factors & Screen Suppliers, aims to, during supplier assessment, select suppliers and prepare a negotiation strategy. The fifth step, Conduct RFQ, strives to score the supplier responses according to decision criteria based on total cost. The sixth step, Evaluate & Negotiate Agreements, seeks to prepare all facts necessary in the negotiation to reach the desired outcomes and to conduct the negotiation. The seventh step, Implement Agreements, concerns planning for the implementation of the agreement execution and ordering. Output from the seventh step is the signed agreement. The people involved in the process, except the IDP employees, are key users, e.g. anyone with need to source non-production material and services, technical people, e.g. quality and IT, as well as facilitator, e.g. commodity experts. The next step in the overall sourcing process, Ordering, employs the signed agreement as input.



Figure 17. The Sourcing step of the sourcing process of IDP.

4.3.2 Supplier Relationships

IDP has a larger supplier base than DP. The type of supplier relationships varies between the IDP groups and depends on for example product and spending. Close collaborative, often long-term, relationships are preferred for e.g. test rigs and construction projects. One Section Manager says that the goal is to have strategic collaborations. There are also relationships of a shorter character for one time buys. This relationship type is common for e.g. mobile phones. One manager states that it depends on the purchase as the group evaluates the current suppliers every three years with the aim to keep two thirds of the supplier base and replace the last third with new suppliers. Another manager described that they reduced the number of suppliers from 2000 to 870, which resulted in better partnership and more business to the suppliers. Managers in China explain that the relationship should be based on a mutual win-win situation, where they collaboratively help each other and that a successful relationship with Volvo Cars is a good reference for the suppliers in the future.

4.3.3 Supplier Selection

IDP deploys several different supplier selection criteria. Several managers mention the criteria cost, total cost of ownership, quality, logistics and fulfillment of technical specification. Further, the supplier’s competence to deliver product or service, financial stability, ISO certifications and reviews from previous customers are important criteria. Additionally, the terms and conditions regarding e.g. payment are included in the selection. According to several of the managers, the shift to the 7-step process implies a greater focus on total cost of ownership.

Introduction frequency of new suppliers varies between the groups. New suppliers are contracted whenever there is a need for it, which generally is more often than DP. However, the group managers say introduction of new suppliers is not made too often, with one manager

stating that it is made every three years. For one Chinese Group Manager, however, there are currently new suppliers introduced weekly as the new plant in China is set up.

4.3.4 Goal and KPIs

The goals for IDP are to reduce spend in the long run, improve TCO, source on time, ensure good quality and to follow documentation requirements. Further, goals are to nominate a certain number of supplier for Volvo Quality Excellence Award, (VQE), to create new commodity business plans and to reduce the supplier base. One manager expressed it as generally the goal is about finding a balance between supplier base, cost of relationships and cost for purchase. Additionally, goals specific for China are to make sure a certain percentage of the suppliers are ISO certified.

There are also goals on an individual level. Such a goal is that an employee should perform a certain number of days in training. One Section Manager also mentions the goal of receiving information and learning the new division of roles and the new 7-step process, i.e. the purchasing process of IDP.

Managers mention various reasons to why they succeeded or failed to reach the goals. One factor is that the goals, and intermediate goals, are relevant, reachable and communicated. Another factor is the emphasis on becoming more strategic, which is done by the implementation of the 7-step process and aligning the strategic and operational work. Managers mention other success factor as cross-functional work and close collaboration with the stakeholder as well as motivated and competent employees working together as a team.

4.3.5 Previous Training Participation, Effects & Opinions

From the current training supply IDP has participated in for example the three capability courses, Fact Based Negotiation, Clean Sheet Analysis Training and LCC/China Sourcing Training, as well as Test Driving and Review of the Auto Show 2013 Launches.

Regarding the capability courses, before the training the expectations were to improve the general negotiation skills. Most of the managers at IDP thought that the focus was too much linked to DP. IDP purchases goods and services of all kinds, i.e. everything not directly related to the physical car. Consequently their purchases are rather dispersed and it can be difficult to align the context to IDP as one manager mentioned:

“Services can not be broken down into its constitutes the same way as physical products can.”

Another manager stated:

“It is a shame that the capability courses are too DP focused. Too much time was spent on understanding the product rather than what to do. However, all the capability-courses are good as they ‘wake you up’ and kicks off the reflections.”

Moreover the incitement to participate in courses must be increased, people must be motivated and not forced to participate in the trainings.

Managers have experienced that after for example the capability trainings the average perception of the training was good but managers had a hard time giving explicit details of what

was improved. Nonetheless, managers have felt that the buyers have become more confident and structured in their work. Further, IDP has implemented the 7-step process, which will make the buyers' work more structured, streamlined and standardized.

Exchanging buyers between China and Sweden have also been very much appreciated due to the large amount of information exchange that can be achieved. As one manager in China expressed:

"We need more physical exchange to improve."

The level of the capability courses was also perceived as good for new employees but rather simple for more experienced buyers. Additionally, a mixture of buyers from both DP and IDP is desirable during the trainings since it facilitates network benefits.

Regarding opinions on the education per se, managers believe for instance that education is important but the problem lies in the fact that it is hard to understand what is in it for them. As one manager said:

"A lot of trainings are linked to relevant areas. However it is hard to understand how they connect and what it can give me. Therefore it is important to ask the question what and how can this contribute to me before the trainings."

Additionally the trainings need to have some kind of reflection and follow up after to preserve the new knowledge. Another request have been to let employed consultants participate in LAD courses. Furthermore the structure of LAD today could be improved and there must be more opportunities to participate in the courses i.e. courses must run more than once a year.

4.3.6 Future Skills Needed

With the new 7-step process, buyers need to understand the change of role, from transactional to strategic. The buyers need a strategic mind and have to be able to do a market analysis, compile a strategy, network and communicate in order to capture the stakeholder need. When meeting the stakeholders it is important to be able to guide them and it is thus essential to have the same or more competence than the stakeholders. Desired competence is hence commercial skills such as cost breakdown, market knowledge such as keeping up with new trends and project management such as how to hold meetings. For managers, leadership, coaching and communication skills are desired as well as a more strategic thinking. Becoming better at doing follow ups is also needed for buyers and managers.

Newly employed buyers should have or get a commercial and technical education. Moreover they need to understand cultures and people. Furthermore, the buyers need to learn how to best prepare for the negotiations as this would increase the chance of winning the negotiation as one manager expressed:

"The more background information you have, the better your chance of winning the negotiation."

Of course, negotiation skills during and after the negotiations are also necessary, as well as skills that support vendor management, e.g. understanding of supplier relationships and doing supplier analysis. Additionally, legal skills are desired, as buyers to some extent need to go through the contracts and need to know when to involve colleagues in the legal department. One manager gave an example of a supplier quotation. Due to the fact that terms and conditions in

the quotation were not completely understood, the supplier was further evaluated even though it should not have qualified in the first place. Thus, time was wasted analyzing the supplier further.

The China office desires general purchasing skills such as Fact Based Negotiation, but with an IDP context. Furthermore, strategic skills, Microsoft Excel skills as well as presentation and communication skills are desired.

4.3.7 Future Activities Needed from Purchasing Academy

The trainings that buyers would need more of are project management, technical English, negotiation skills, market analysis as well as understanding of legal terms and conditions. Furthermore, trainings in the Microsoft Office package is asked for, including Microsoft PowerPoint and Microsoft Excel on both basic and advanced level. This is particularly needed when new versions of the program are released. With the introduction of the 7-step sourcing it is important that there is training to support this in both the Swedish and Chinese office, to make the most of the new process and make indirect sourcing more efficient.

Trainings similar to that of Fact Based Negotiation are asked for, but more adapted to the IDP context where one discuss and have workshops to compile a strategy on how to negotiate. This is desired as in IDP, it is not very clear how to handle a negotiation in the best way, there are no guidelines although the negotiation skills often are existent. Furthermore, negotiation skills are important for buyers and need to be maintained as a manager described:

“Negotiation training is something you should attend every year to repeat and develop.”

An idea is to have a package with negotiation courses that has a span of several years. What is also wanted are service-oriented courses e.g. Fact Based Negotiation with a tweak. Business courses are useful for the handling of suppliers and these should include cost breakdowns, supplier analysis and analysis of annual reports to evaluate the status of suppliers. For better supplier understanding, supplier visits are suggested as an activity.

Change management training is useful as well, e.g. how to convince a stakeholder to change from current supplier A to new supplier B. Furthermore, to convey their message more efficiently, rhetorical and presentation training is desired. Another requested training is one in understanding the raw material compensation process. Continuation of capability courses has been asked for as well.

As a manager, you must listen, understand, have a strategic mind, long-term thinking and make other people do the job, which means that managers only have a supporting role. What is needed are trainings that support this, such as project management, behavioral and psychological knowledge, as well as leadership skills. Coaching trainings are essential as managers meet many individuals and need to learn how to coach and handle the employees. This kind of training could for instance take place in the form of leadership days. Currently the training supply for managers is limited, what is there is good, but more is needed. There should be different packages directed towards all kinds of managers, showing what courses should be taken during which year of the role as a certain kind of manager. What is also wanted is guidance in how training follow-ups should be done, which is something that could be carried out in-house.

When it comes to the structure of the training supply, it needs to be coupled to the role one has, as a manager expressed:

“What supply is there if you are a product buyer? For this type of competence you have these courses, this is mandatory and this is what you should do.”

A lot of the trainings offered are related to relevant areas, however it is difficult to find the relation between them and what they give you. LAD has a lot of information, but it is difficult to find things there and see what is suitable for you. The trainings should also have different modules according to the buyer's experience, e.g. beginner, 3-5 years of experience etc. For new employees it is important that they are introduced to the company and job quickly. Furthermore, employees need training plans according to individual needs. One manager expressed that currently consultants are not allowed to book trainings in LAD and suggested that this should be changed. Perhaps the consultancy firms could pay for the training costs. Another opinion is that the trainings should be in different forms, e.g. seminars, role-play and lectures. A Chinese manager also expressed the need of external training.

The dilemma when it comes to education is that some people get more out of the courses than others, and what can be done to challenge everyone. The trainings are in general good, but the question is how to use the knowledge acquired. Managers desire more reflection and guidelines how to do this. Another opinion is that the Capability courses perhaps should not be mandatory for everyone. Furthermore it should be adjusted and fit IDP as well, not only DP. However, having the Volvo context is good and should be continued. The people participating in the courses should be a mix of people from DP, IDP and CE to the extent that it is possible, for better understanding and knowledge sharing. Furthermore, too many training days should be avoided. At the same time, one manager expressed that full day trainings should be avoided to allow time for reflection and commented that trainings on Fridays are not good as there is a long gap before the knowledge can be utilized in the work. The time planning for trainings need to be improved as well.

Regarding the Chinese office, the training need depends on the individual qualifications and skills, thus training plans should be based on individual needs. However, communication and strategic training is desired as the buyers handle both suppliers as well as internal customers. Microsoft Excel training and training that makes buyers more confident in their work has also been asked for. The current course supply is good with a large variety, but it could be improved with more training similar to the Capability and strategy courses. Furthermore, to see possible effects from the trainings, there is a need of follow-ups and hence guidance in how to carry out this. One manager asked for training with more life cases, e.g. when it comes to negotiation. One manager expressed following:

“How about we have more life cases on dignitaries. For instance, how about Warren Buffet. How does he conduct negotiation with his suppliers? Bill Gates, how does he conduct negotiation with his suppliers [...] Right now all the trainings have too few life cases.”

Hence, one should look at how other people do business and get inspired by that. Having more external trainers was suggested, as well as more exchange of internal trainers between the Chinese and Swedish office. Feedback for Purchasing Academy is that the Academy is doing a good job. However, not all managers were aware of Purchasing Academy prior to the interviews,

and better marketing for Purchasing Academy is thus needed in China. Furthermore, the time for training is limited and for some people this could be increased. A manager expressed the need of linking KPIs to training and said that this could increase the motivation to take courses.

4.3.8 Future Activities Needed from Purchasing Unit

Management would like to recruit more external personnel, i.e. people who have worked with purchasing in other organizations to get another perspective. As buyers negotiate by themselves, they need to get more mandates. Directly, this could be done by having Group Manager attending the negotiation to see the atmosphere, indirectly it could be done by giving the buyers feedback and discuss things more. Furthermore, the roles of the buyers need to be better distinguished, to make strategies work and free up time. One manager thought that purchasing should be involved earlier in the product development process to reduce changes later on that has large effects in the process. Additionally, a better procurement system is needed.

Furthermore, the buyers should be required to read articles for their own knowledge gain, to be updated on the trends and what is happening on the market. For the managers, more networking inside and outside the company is needed to exchange knowledge with others.

The communication among sectors needs to be improved and one should learn from each other. Additionally, buyers need to have closer contact with their stakeholders, to find out what the stakeholders' primary goal is and to get a better understanding of all stakeholders. When goal visions are not shared, future goals need to be agreed on by the parties to assure that the same language is spoken and the same things are done. Collaboration and communication outside the boundaries and cross-functional meetings are important.

In China, better communication between buyer and supplier is desired. Furthermore, the buying process must be adjusted to China. A uniform process for evaluation to qualify a bidder during the bidding process was asked for as well as a unified way to upload document in order to improve the purchase order. One Chinese manager expressed that the exchange of personnel between Sweden and China is a very good way to learn from each other.

4.4 Cost Estimating

The Cost Estimating (CE) section is a support function within the purchasing organization, whose main role is to calculate the "should" costs of the purchased goods. CE provides and advice the purchasing department with specialist competence regarding should cost analysis, which forms a fact-based argument for the buyers when they enter a negotiation with a supplier. CE works in close collaboration with mainly the DP groups. CE in Sweden consists of one section with four groups, specialized on areas such as plastic, metal and electrical and employs around 30 people. CE in China consists of one group with around 10 employees. In total the interview sample are six managers, of which one is located in China, on group and section level.

4.4.1 Sourcing Process

CE takes part in the early phases of the purchasing process. They are for example involved in the acceptance of the negotiated price, i.e. within the sourcing consensus phase. Their role is to confirm, in co-operation with the buyer, that the negotiated price is at the correct cost according to the should cost analysis. It is required that the buyer gets the support from the cost estimator and it is commonly performed through inviting the cost estimator to the negotiation. However,

the group advanced CE takes part in an even earlier phase than the others since it is involved already in the product development. The group's aim is to, in an early phase, make sure that the costs for different commodities meet affordable cost.

4.4.2 Supplier Relationships

CE is not responsible for the supplier relationship, but has more company-internal relationships with for example purchasing and R&D. However, as previously mentioned, CE often take part in the negotiations with suppliers and therefore have a kind of relationship with the suppliers even though they are not responsible for it.

4.4.3 Goal and KPIs

CE's main goal is to reach a zero cost gap, meaning that the cost for a commodity is negotiated to the calculated should cost. Consequently, CE cannot reach this goal itself as the negotiated cost is the responsibility of the buyers. The zero cost gap can be seen as a bit contradictory to the purchasing goal of yearly cost reductions, since the zero cost gap aims to get the right cost from the beginning whereas the cost reduction wants to reach the right cost after the reductions. To ensure goal achievement the group has to have the capabilities to compile the "should" cost calculation. This long-term goal can be translated into a short-term goal of supporting the buyers to get the best possible cost. Another goal for CE is to have a certain number of training days, i.e. to improve the skills and knowledge of the cost estimators, and the delivery according to plan.

The keys to achieve the goals vary between the different CE groups. Mentioned success factors are to get other stakeholders to agree on the calculated cost, to re-work suppliers' quotation in order to make it fact-based rather than market-based and to have a good mix of employees and clear goals. Further, important factors are to have a sufficient number of employees and to have an education that is supported by top management participation.

4.4.4 Previous Training Participation, Effects & Opinions

From the current training, CE has participated in the three capability trainings including, Fact Based Negotiation, Clean Sheet Analysis Training and LCC/China Sourcing Training. Examples of other courses taken are Introduction to Lean Production, Corporate Social Responsibility Training, V526 Project Presentation, V526 Design Show, Test Driving, LEQM Sourcing Tracker Planning and Annual Salary Information.

Before participating in the trainings the expectations were to get an understanding of how other functions and people work as well as acquiring new ways of thinking.

Regarding the effects from the trainings, it can generally be stated that the managers find it difficult to say anything definite, e.g. in monetary terms. However, the managers can give an indication of the effects and how the trainings have been perceived. These effects diverge between the groups and they range from all training being a disappointment to comments on specific training. Clean Sheet Analysis Training was perceived as both good and bad. The good part derives from the training giving a reflection of what the cost estimators convey to buyers and giving a positive response from the purchasing unit. The bad part derives from that the training contained no new information. The Fact Based Negotiation training is also considered as no new information.

Opinions were raised on the content of the training. Certain opinions stated that the courses today are too basic for cost estimators, the training should be distributed on more days to reduce the intensity and the usage of the training content has to get better through manager engagement and follow-ups. As one manager exemplified it:

“Have many reflections in the trainings, so that the training contains a certain number of occasions where you reflect on what you have learned. How can I use this to improve my daily work?”

Furthermore the course participants should come from different functions for example DP, IDP and CE to create cross-functional conversations and information sharing to improve the understanding internally for different units.

In China, Clean Sheet Analysis Training and new employee trainings were much appreciated as they provide a good introduction of how the organization works and what it is like to work as a cost estimator.

4.4.5 Future Skills Needed

Currently, soft skills such as communication and presentation are quite weak and could be improved. Furthermore, technical product knowledge is required, skills in cost breakdowns, problem solving as well as the ability to unfold unclarity and how to handle this kind of information could be enhanced. By communicating and networking more with others, e.g. buyers, the information sharing could be facilitated and issues could be solved at lower levels instead of at management level, as one manager said:

“It is important to share information between units, buyers and cost estimators”.

Additionally, more competence in the Microsoft Office package is desired, in particular Microsoft Excel.

The understanding of dynamics in relation with suppliers and other players is lacking. Although the cost estimators have good product knowledge, they are missing negotiation skills and business acumen. A manager sees a need in the development of this kind of skills, but the cost estimators themselves are somewhat reluctant.

What is also important is to maintain the professional proficiency. The knowledge possessed by cost estimators need to be maintained, to avoid it becoming obsolete. The cost estimators have to be aware of the current market trends. Currently, CE needs to be responsible itself for being updated, but this could be improved by having theoretical trainings as well as practical ones, e.g. supplier visits. The trainings to acquire and maintain market knowledge can be done internally, e.g. by having shows with the cars and when the internal resources cannot close the competence gap, external trainings should be added.

For one group, the cost estimators have good product knowledge when it comes to their specific part, but less knowledge of the holistic understanding about the cost structure of an entire car, where the money is actually placed and how everything is connected. If this understanding is lacking, it is unfavorable for the trust of the cost estimator and gaining this kind of knowledge is even more important for this group. This knowledge could be gained in internal as well as external trainings.

4.4.6 Future Activities Needed from Purchasing Academy

Although calculation is the core skill for a cost estimator, most of the time is spent on communicating, as one manager expressed:

“10-20% of the time is pure calculation, 20% administration and 60% communication.”

There is thus a need of more trainings in negotiation, communication and presentation. In addition, relationship-building courses are desired, consisting of topics such as team-building, learn how oneself and others work, how to handle conflicts as well as how one leads a group. More leadership trainings, continuing ITM courses, for group managers were also demanded. This should include HR support for the managers, group dynamics, self-awareness and how one interacts with others. A course about the Microsoft Office Package should be added as well. The trainings should be in different forms, e.g. seminars, role-play and lectures.

When it comes to the structure of the trainings, one manager expressed the need of a course program with different levels, e.g. five, and meant that it is preferable to have a program where the individuals start from the first level and advance, rather than having the goal to participate in a certain number of training days. The generic course program needs to be complemented with individual training plans. Furthermore, most of the new recruitments are external, and for these cost estimators, the current course supply is not sufficient to cover the introduction to Volvo Cars that is desired. In addition, continuity in the offering of trainings is asked for. CE also requests more external trainings and one manager suggested exchange of internal trainers between the Chinese and European offices.

The lack of continuity in trainings holds for the Chinese office as well, partly due to high personnel turnover in the HR department. Currently there are no courses planned for this year and there is no one who has the drive to push the Purchasing Academy in the same way as in Sweden. A person who is running and promoting the trainings as well as Purchasing Academy in China to a greater extent is needed.

Following the work of Purchasing Academy, a manager asked for continuous follow up of the LNA plan, either quarterly or once in half a year. Although there is a large supply of trainings, it is difficult to take the time needed to actually carry it out and utilize the possibilities offered. Thus, more pushing and coaching from Purchasing Academy is desired, to give the manager an awakening of the opportunities not taken. Furthermore, managers have asked for more reflection activities before, during and after trainings. Guidelines in how to carry out this are desired.

4.4.7 Future Activities Needed from Purchasing Unit

One manager explained that it is difficult to measure KPIs in a knowledge-based organization, as the competence possessed and the work that CE do cannot be measured on facts. The KPIs could therefore be better adjusted and furthered developed in order to increase the relevance. This can for example be done by creating a KPI that measures the number of fair or supplier visits within one's field, in other words market knowledge. Furthermore, the KPIs of the CE and purchasing departments need to be more coherent, to avoid goal conflicts.

An issue that has been expressed is that buyers do not have sufficient knowledge of products and production processes to understand the cost estimators in their contact. The teamwork between buyers and cost estimators is thus flawed and needs to be improved to facilitate better information sharing. In this context, top management has to initiate the change work. Employees need to share their experience to a greater extent, thus there should be more networking opportunities inside and outside the company. The employee rotation with the Chinese office is a good measure for knowledge exchange and should be continued. A Chinese CE manager expressed the need of a purchasing process that is better adjusted to China. Furthermore, according to a Swedish manager, there is a need of more external influences and inspiration from other firms.

5 Analysis

The analysis aims to discuss data concerning Research Question 2. The analysis is based on Chapter 4, Empirical Data, and hence the foundation lies in the managers' opinions from the interviews. In total 54 managers have been interviewed, see Chapter 3, Methodology, for distribution of interviewees, further explanation on how the interviews were conducted as well as how opinions were sorted into respective group. The KJ-Method grouped similar opinions and generated 20 different groups as well as other issues resulting in group 2 and group 3. The result from the KJ-Method sorting is displayed below in the Major Group 1-3 lists, which summarizes the identified skill gaps and Purchasing Academy activities that could be improved. This chapter will go through each of the Major Groups, starting with Future Skills and Purchasing Academy Trainings, thereafter Training Setup and Content and lastly Training Supply and its Structure. Each part, i.e. the bullet points in the Major Group lists, will present the count on number of times an opinion has been mentioned, see *Table 2-33* for a count summary and *Appendix 4* for more details on opinions and counts.

Major Group1: Future Skills and Purchasing Academy Trainings

- Behavioral Skills
- Communication Skills
- Leadership Skills
- IT and Microsoft Office
- Negotiation Skills
- Legal Knowledge
- Strategic Competence
- Product Knowledge
- Process Knowledge
- Internal Interfaces Understanding
- Market Analysis
- Supplier Understanding
- Cultural Understanding
- Further Training within Existing Training Subjects
- Business Acumen
- KPI Understanding
- Project Management
- Focus Study
- Lean at the Office
- Tools to Optimize Cost

Major Group 2: Trainings Content and Context

- Training Activities
- Context of Course Content
- Trainer
- Location

- Mixed Groups
- Length of Trainings
- Reflection

Major Group 3: Course Supply and its Structure

- Course Packages
- Supply for Managers
- Continuity of Trainings

5.1 Future Skills and Purchasing Academy Trainings

The following part of the analysis will cover suggestions on Purchasing Academy training for the future to bridge skill gaps and analysis on how the training activities affect the purchasing performance, which is the link between the Chapter 2, Theoretical Framework, and Chapter 4, Empirical Data. Purchasing performance was conceptualized in *Figure 6* in Chapter 2, Theoretical Framework, and includes the parts effectiveness, efficiency and adaptiveness. The managers' opinions have been counted and grouped into 20 groups, which in turn were categorized into different skills. The structure of this part of the analysis will follow the latter categories, namely Soft Skills, Leadership Skills, Purchasing Skills, Volvo-Internal Skills, Volvo-External Skills, Continuation of Existing Courses as well as Miscellaneous. The Miscellaneous category includes skills that do not cohere with the other skill categories. When discussing Volvo-Internal skills and Volvo-External skills it is important to understand what is included in each category. Volvo-Internal is both within the purchasing unit, between e.g. DP and IDP, as well as between different departments at the firm, e.g. R&D and the purchasing unit. Furthermore, Volvo-External means outside of the boundaries of the firm e.g. between Volvo Cars and suppliers.

The analysis of each of the 20 groups, or skill gaps, will start by an explanation of the category based on Chapter 4, Empirical Data. Afterwards, the count on opinions within the category will be presented. The total count shows the sum of opinions on skills and courses within the category. Furthermore, if any specific trainings were requested these will also be presented. *Table 2-21* show the total count of opinions within the category and from which purchasing type and country they derive. Sequentially, the effects of the category will be analyzed in relation to the performance of the purchasing unit as illustrated in the conceptual model. Lastly, the effects are classified as primary, i.e. the main effects which likely have the greatest impact, or secondary, i.e. the effects which likely have a smaller impact. The classification is based on the theoretical framework, the empirical data and the authors' experience from the thesis process.

5.1.1 Soft Skills

The following section will analyze skill gaps concerning soft skills, i.e. knowledge about oneself. The skills that will be discussed are Behavioral Skills and Communication Skills.

Behavioral Skills

Behavioral skills relate to the individual buyer's awareness of how he/she reacts in specific situations. It includes self-knowing, conflict management and stress management, but also

psychology training and motivation training. These kinds of skills are useful in many situations, not only for buyers. The job as a buyer involves many interaction points with other people, both externally and internally, as shown in the purchasing processes. Behavioral skills could be beneficial in such interactions since for example conflicts might arise due to diverging interests of the buyer and the counterpart. These kinds of knowledge and trainings have been requested by ten managers from DP and IDP in the Swedish office.

	DP	IDP	CE
SE	9	1	
CN			

Table 2. Behavioral Skills count.

Regarding purchasing performance, behavioral skills can be said to impact how the employee acts and behaves in different situations. The skill can influence other people both within and outside Volvo Cars, therefore the behavior affects the inter-personal relationship and cooperation. Consequently, the behavior skill relates to resources in the organization dimension, which in turn could result in an efficiency impact. Further, the behavior skill could influence people outside Volvo Cars. Such a situation might be a negotiation with a supplier. Consequently, knowing one-self can be advantageous and might be beneficial for the outcome of the negotiation, e.g. the cost, quality and logistics agreement. Hence, the effectiveness of the organization could be affected. In total, effectiveness is considered to be the primary effect and efficiency the secondary effect.

Communication Skills

In order to succeed with conveying the message to listeners the buyer has to be communicative. The purchasing process involves cooperation across the corporate functions and meetings were the buyers are to present their point of view on e.g. the supplier selection meeting. Hence, it is important that the buyers possess great communication and presentation skills, including rhetoric. This skill category also includes a demand for improved technical English, which is useful not only in communication, but also in the buyer’s everyday work. In total 13 managers, from all three purchasing types in Sweden as well as DP and IDP in China, have desired improved communication skills. Out of the 13 managers, five have specifically requested trainings in presentation and rhetoric as well as technical English.

	DP	IDP	CE
SE	4	3	2
CN	2	2	

Table 3. Communication Skills count.

Communication skills can be useful for buyers and cost estimators in both Volvo internal and external presentations, since for example cost estimators spend around 60% of their time on communicating with others. If for instance a presentation is poor, additional time might be required to reach consensus in a meeting. If a communication with a supplier is poor, misunderstandings might occur which prolongs the discussion. Hence, being a better communicator could ease the preparatory work, smoothen the transfer of the message and

reduce the unnecessary discussions of the subject. Consequently, the organizational dimension, and in turn the efficiency, could be affected by communication skills. Further, clear communication and presentation in for example negotiations and supplier interactions might have a positive effect on effectiveness, through settled cost, quality and right technical specification of delivered goods and logistics. In this case, both the efficiency and the effectiveness effects are considered large and are thus primary.

5.1.2 Leadership Skills

Leadership skills are essential for the management of an organization. It is important that managers can coach their subordinates and lead the organizational unit to perform at its best. 15 managers from all three purchasing types in Sweden as well as DP in China have requested leadership skills. Eleven of the 15 managers have specifically asked for training on the leadership skills. The trainings should include self-knowing, management of sub-ordinates and group dynamics as well as be linked to managers’ daily work.

	DP	IDP	CE
SE	8	4	2
CN	1		

Table 4. Leadership Skills count.

Leadership skills are essential in order to manage the organization so that it moves in the right direction. It concerns having the right managers at the right position, but also having managers with the competency to lead the employees. In terms of purchasing performance, the leadership skills could impact the organization, which in turn impacts the efficiency. Further, strong leadership is valuable when changes occur to the firm’s environment in order to steer the firm in the right direction. Consequently, the adaptiveness is affected. Additionally, leadership could also include giving the right coaching and help in the operational as well as strategic work, e.g. setting relevant goals and guidelines for the purchasing work. This part of leadership affects the effectiveness part of the purchasing performance. To conclude, efficiency and adaptiveness are regarded as primary effects, whereas effectiveness is regarded as secondary.

5.1.3 Purchasing Skills

The following section will describe and analyze skills that will enhance the ability to perform the purchasing job. The skills that will be discussed are IT and Microsoft Office, Legal Knowledge, Negotiation Skills, Project Management, Strategic Competence and Tools to Optimize Cost.

IT and Microsoft Office

It is of high importance that the buyers possess great skills in the Microsoft Office package, and more specifically Microsoft Excel and Microsoft PowerPoint, as well as in the applications LEQM and SI-Plus. The Microsoft Office package is a set of tools used in the everyday work, which could be used more and better at Volvo Cars than it currently is. Applications within Microsoft Office package mentioned, except Microsoft Excel and Microsoft PowerPoint, include Microsoft Outlook and Microsoft Word. In total 17 managers from all purchasing types in Sweden and IDP in China requested better Microsoft Office package skills, out of which ten managers demanded Microsoft Excel skills and two managers demanded Microsoft PowerPoint skills. A mean to increase the

skills in Microsoft Office is to offer courses, which specifically was requested by a total of three managers. Some differences have been noted between the purchasing types. The Microsoft Excel skills have specifically been requested by DP and IDP managers. The LEQM and SI-Plus skills were requested as a course directed towards manager by one DP manager.

	DP	IDP	CE
SE	10	5	1
CN		1	

Table 5. IT and Microsoft Office count.

Microsoft Office and the other IT tools are commonly used in the everyday work. Hence, poor skills might slow down the buyer’s work whereas excellent skills might help the buyer to get work done faster. Consequently, the efficiency part of the purchasing performance is impacted. Concerning Microsoft Excel, which is a tool to manage and analyze large sets of data, knowing how to use the application properly can lead to better analysis made faster. Hence, the way Microsoft Excel is utilized can impact for instance the analysis of different suppliers in the supplier selection process for DP and IDP. Hence, the Microsoft Excel skills can have an impact on e.g. cost, which in turn affects the goal achievement, i.e. the effectiveness. Altogether, both impacts on efficiency and effectiveness are considered primary.

Legal Knowledge

To have a sufficient legal knowledge is a key to be a successful buyer. Legal knowledge includes interpretation of the terms and conditions of the quotation or contract in order to understand what the contract covers and when the involvement of the legal department is needed. Two managers within IDP in Sweden desired better legal skills among the buyers, out of which one of them requested a course specifically.

	DP	IDP	CE
SE		2	
CN			

Table 6. Legal Knowledge count.

Legal skills can give the buyer the means to work faster, through being able to perform the evaluation without the involvement of other people. Lack of this kind of skill can, according to one manager, result in waste of resources due to employees evaluating a supplier for a long time, although the supplier should not have qualified. This implies an impact on the efficiency of the performance, which is considered a primary effect.

Negotiation Skills

Since the purchasing processes imply many negotiation activities, negotiation skill is a core in the buyer’s work. Negotiation skills include not only the actual negotiation with supplier, but also the preparation beforehand and the evaluation and follow up afterwards. During the negotiation it is important to understand the counterpart, what are the incentives and goals and how can the price be reduced by e.g. filling up the supplier’s capacity. 16 managers in Sweden have mentioned negotiation skills as an important buyer expertise. Two out of the 16 managers

have requested sale courses to improve the understanding of the counterpart and one manager has requested SILF courses.

	DP	IDP	CE
SE	12	3	1
CN			

Table 7. Negotiation Skills count.

How good of a negotiator the buyer is determines the outcome of the negotiation and what numbers, terms and conditions are put on the contract. Therefore, negotiation skills impact the cost, quality and logistics dimensions, i.e. the effectiveness of the purchasing performance. Additionally, negotiation skills include the preparation and follow-up phases. Depending on the level of skills, the work in these phases can be performed with more or less resources, e.g. time and people, from the organization. Hence, the organization and consequently efficiency might be affected by the negotiation skills. To conclude, effectiveness is considered the primary effect, whereas efficiency is considered the secondary effect.

Project Management

Trainings within project management concerns e.g. how to manage time and people involved in the project. One manager mentioned the importance to stick to time deadlines since missing deadlines cause delays and are troublesome for other parties within the project. Trainings within project management would be valuable within the purchasing unit according to four managers from DP and IDP in Sweden.

	DP	IDP	CE
SE	1	3	
CN			

Table 8. Project Management count.

The management of people and time has an impact on the organization since for example a project that does not stick to its deadlines might occur costs for other projects or functions dependent on the project. Consequently, the organization and its efficiency are affected, which is considered a primary effect on purchasing performance.

Strategic Competence

Skills and competence within strategic thinking are valuable for buyers. This kind of skill would help the buyer to for instance not “put out fires” but to see a purchase in a greater and long-term perspective. Five managers in Sweden and China have enhanced the importance of becoming more strategic in the actions. The managers are from DP and IDP.

	DP	IDP	CE
SE	2	2	
CN		1	

Table 9. Strategic Competence count.

Through taking a strategic point of view on a purchase, a buyer can strive for long-term gains rather than short-term, i.e. sub-optimizations can be avoided. Hence, long run benefits can be generated, for example cost savings and secured supply. Consequently, a strategic thinking can enable improved effectiveness. Further, moving from “*put out fires*” to strategic thinking can also simplify as well as create a better overview of the work and level the workload. Therefore, the work can be smoothened for the employees and managers within the organization and hence the efficiency is affected. Furthermore, working strategic with suppliers can enable longer and better preparation for changes that the supplier will make or improved resource combining and activity linking in the long run. Thus, the adaptiveness part of purchasing performance can be affected by strategic skills as well. To conclude, the effects on effectiveness and adaptiveness are considered primary and efficiency secondary.

Tools to Optimize Cost

Improved buyer skills within different tools that enable an optimization of cost, e.g. fact-based negotiation, are important. This kind of skill has been requested by one DP manager in Sweden.

	DP	IDP	CE
SE	1		
CN			

Table 10. Tools to Optimize Cost count.

The tools focus on optimization of costs and would consequently have an effect on the contracted cost with suppliers. Hence, it would impact the effectiveness of the organization, which is considered a primary effect.

5.1.4 Volvo-Internal Skills

The following section will analyze skills that reside within the firm, between functions in the firm for example between R&D and purchasing as well as inside the purchasing unit for example between cost estimators and buyers. The groups of skills are Product Knowledge, Process Knowledge and Internal Understanding.

Internal Interfaces Understanding

The purchasing processes for buyers contain interfaces with several other departments and support functions at Volvo Cars. The work as a buyer implies a close collaboration with different departments or stakeholders. Several managers have stressed the importance of internal understanding among buyers, cost estimators as well as R&D, quality department and other stakeholders within the firm Volvo Cars. Possessing change management skills are suitable as the work as a buyer often involves convincing another party to e.g. change supplier. To increase the information sharing between the stakeholders, networking is a great skill to possess. 17 managers from all purchasing types in Sweden and DP and IDP in China have desired an improved holistic internal understanding of stakeholders, out of which nine specifically asked for trainings on the subject. Three managers suggested arranging mentoring or shadowing program for managers, which would be means to reach a higher understanding.

	DP	IDP	CE
SE	10	2	2
CN	2	1	

Table 11. Internal Interfaces Understanding count.

Developing a mutual understanding for other employees would ease the collaboration and reduce the friction in the interaction points. Furthermore, this could reduce sub-optimization between organizational units and understanding other departments' goals. The purchasing unit should not be considered in isolation due to the management of different interfaces within the firm, thus it is important to facilitate internal understanding. Consequently, increasing internal understanding could affect the organization in terms of employees and management hence it affects the purchasing efficiency. According to theory, managing internal interfaces well generates better prerequisites to adjust to the external environment. Hence, internal interfaces understanding can affect the ability to adapt to environmental changes, i.e. adaptiveness. Further, a better understanding of the internal stakeholders could enable a procurement of a product or service that better matches the demand. Hence, the cost, quality and logistics dimensions could be affected, i.e. the effectiveness of the purchasing unit. To conclude, efficiency and adaptiveness are considered primary effects whereas effectiveness is considered secondary.

Process Knowledge

A buyer has to have sufficient knowledge regarding their work processes as well as other function's processes, in order to be able to perform the work efficiently. The work processes includes for example the purchasing processes, e.g. IDP's 7-step process, or sub-processes, e.g. raw material compensation, product development and manufacturing processes. Further, buyers need to understand who are involved in each step. The Chinese managers desired an improved understanding of Volvo Cars' internal processes. In total, ten managers have touched upon the importance of this kind of skills. Six out of the nine managers within IDP in China and Sweden have requested trainings in the 7-step process. Concerning China specifically, two managers within DP would like a training covering the Volvo Cars processes, e.g. the purchasing process. One DP manager in Sweden requested a training covering the flow of an example product through the purchasing process in order to identify where competence gaps and difficulties in the process exist.

	DP	IDP	CE
SE	2	5	
CN	2	1	

Table 12. Process Knowledge count.

Increased process knowledge could ease the buyers' work since the role content, procedures and requirements will be known and the expected work from the role can be performed. Hence, the organization dimension and further purchasing efficiency, which is considered a primary effect, could be affected by process knowledge.

Product Knowledge

Buyers have to have sufficient product knowledge in order to perform the work properly, for instance in contacts with suppliers and internal stakeholders. Sufficient product technical knowledge eases negotiations with suppliers and enables both parties to speak the same language. Further, product knowledge is essential for cost estimators since they have to stay updated on product trends in order to succeed in their job. Four managers in Sweden and China have mentioned the benefits of having great product and technical knowledge skills. One manager specifically asked for a course in which material and labor costs in the manufacturing process are identified graphically and linked to the product. The participants identify the greatest costs in the bill of material, the manufacturing steps that drive costs, and perhaps also overhead costs.

	DP	IDP	CE
SE	2		1
CN	1		

Table 13. Product Knowledge count.

An increased understanding of product knowledge could simplify negotiations. Additionally, understanding the cost breakdown as well as the cost drivers of products are essential to buyers and cost estimators. Hence, product knowledge trainings would affect the cost, quality and logistics dimensions, i.e. the effectiveness of purchasing performance. Further, great product knowledge is beneficial if for example parts of a product change and alternative parts have to be procured. Thus, if surrounding aspects to the firm change the firm is better prepared to react. Consequently, adaptiveness is affected. Moreover, by possessing sufficient product knowledge, an employee can become more confident and autonomous in the work. The employee can work faster without interrupting colleagues, therefore the efficiency can be affected. To conclude, product knowledge is seen as having a primary effect on effectiveness and adaptiveness and a secondary effect on efficiency.

5.1.5 Volvo-External Skills

The following section will analyze skills that concern the external environment of the firm, i.e. outside the firm boundaries. The groups of skills are Cultural Understanding, Market Analysis, and Supplier Understanding.

Cultural Understanding

The work as a buyer involves encountering and interaction with people from different cultures. The encounters are both internal at Volvo Cars, e.g. China, and external, e.g. suppliers from all over the world. In order to smoothen the interaction and enable adaptiveness to the culture, an understanding of foreign cultures is valuable. This can be achieved by knowledge sharing from people who have experience from the country in question, through e.g. seminars. Three managers from DP in Sweden have requested improvement of this kind of skill through seminar trainings.

	DP	IDP	CE
SE	3		
CN			

Table 14. Cultural Understanding count.

Knowing how the counterpart does business and how the market behaves from a cultural perspective reduces the uncertainties in the firm’s external environment derived from cultural differences. Hence, increasing the cultural understanding affects the adaptiveness in the purchasing performance model. Additionally, the internal understanding could be improved, as there are purchasing offices in both Sweden and China. An improved internal understanding could possibly reduce internal friction and smoothen the work. Consequently, the organization would be affected, i.e. the efficiency of the performance. To conclude, both adaptiveness and efficiency are considered primary effects.

Market Analysis

To be a great buyer you have to be able to do a market analysis. The goal of the market analysis is to identify trends in the market environment of Volvo Cars, which includes for example suppliers and competitors. Furthermore, benchmarking or identifying best practices and cost levels among competitors can also be a part of market analysis. The market analysis skill among buyers has been requested by ten managers in Sweden and China in total, out of which one manager asks specifically for a course. The skill has been identified as important by all three purchasing types.

	DP	IDP	CE
SE	4	4	1
CN	1		

Table 15. Market Analysis count.

By performing this kind of analysis, the company can stay up to date, find out about e.g. new materials, technology and ways to manufacture, which can be used to improve purchasing’s part of the customer offer. Moreover, to benchmark against competitors helps the firm to stay updated with the market surroundings through detecting for instance which parts competitors put in to the car, which suppliers competitors use for specific parts or which price levels competitors get. The information obtained can be used to adapt to the market, which consequently impacts the adaptiveness in the purchasing performance. Additionally, to benchmark against competitors or the market can result in a better price, quality or logistics agreement. Thus, the effectiveness of the purchasing performance is affected. To conclude, both effectiveness and adaptiveness are considered primary effects.

Supplier Understanding

In the supplier selection process buyers have to investigate if the supplier qualifies or not. The process requires data gathering, supplier visits and analysis to e.g. analyze the supplier’s financial situation or other issues in the supplier’s current situation, skills in vendor management and understanding of supplier relationship dynamics are valuable in the buyer-supplier interaction. In total seven managers with all three purchasing types in Sweden stated

the supplier understanding skills valuable. One manager asked specifically for a generic training in supplier analysis.

	DP	IDP	CE
SE	3	3	1
CN			

Table 16. Supplier Understanding count.

By improving the supplier understanding, better buyer-supplier relationship and interface management are achieved. Furthermore, it facilitates resource combining, supplier development and adaption to the external environment, i.e. adaptiveness towards the external network is affected. By similar reasoning, understanding the suppliers enables a better internal adjustment and planning, which could affect the efficiency. Additionally, greater knowledge of the supplier and surrounding market during the negotiation situation could give fact-based arguments in the actual negotiation. Consequently, by combining market analysis and supplier understanding the cost, quality and logistics dimensions could be affected in the negotiation. Hence, the effectiveness part of the performance could be affected. Altogether, adaptiveness and effectiveness are regarded as primary effects and efficiency as secondary effects.

5.1.6 Further Training within Existing Training Subjects

The skills improved by current course supply are essential for a buyer, therefore a continuation of the existing courses is valuable. Specific trainings mentioned as necessary are the set of three capability modules that are Fact-Based Negotiation, Clean-Sheet Analysis and LCC/China Sourcing training. Further, for managers a continuation of the introduction to management (ITM) courses has been desired. In total ten managers, from all three purchasing types, have wished for these skills and trainings.

	DP	IDP	CE
SE	2	2	3
CN	2	1	

Table 17. Further Training within Existing Training Subjects count.

Continuing the Clean Sheet Analysis and Fact-Based Negotiation trainings impact the cost, quality and logistics dimensions, thus the purchasing effectiveness could be affected in terms of better knowledge regarding cost breakdowns and improved negotiation situations. Further, LCC/China Sourcing Training could affect the adaptiveness since the understanding of the Asian culture is improved. It is important to have managers that continuously support the employees in their work. This requires continuous and further development of leadership and management trainings that can be achieved with continuation of ITM courses. The skills generated can affect the organization dimension, thus the efficiency of the purchasing performance. To conclude, all three parts of the purchasing performance, i.e. effectiveness, adaptiveness and efficiency, are considered primary effects.

5.1.7 Miscellaneous Skills

The Miscellaneous Skills category contains skills and Purchasing Academy trainings that did not match with the other categories. The skills discussed in this section are Business Acumen, Focus Study, Lean at the Office and KPI Understanding.

Business Acumen

Business acumen skills can give a better understanding of the cost part of a good or service, in addition to the technical specification. Skills within business acumen are desired from two managers within DP and CE in Sweden.

	DP	IDP	CE
SE	1		1
CN			

Table 18. Business Acumen count.

Having a great understanding of the cost associated with the purchase, can imply an effect on the cost dimension and consequently effectiveness. There might also be a better workflow internally in the organization since employees have a broader knowledge and do not have to turn to specialists on the subject. Therefore, efficiency through the organization can be affected. Altogether, the effectiveness effect is considered primary and the efficiency effect secondary.

Focus Study

A focus study training includes one person or a group of people's study of a subject, e.g. a product or the automotive industry, and the following sharing and discussion of the knowledge to a group of people. A training consisting of a focus study of a subject has been wished for by one DP manager in Sweden.

	DP	IDP	CE
SE	1		
CN			

Table 19. Focus Study count.

The focus study would improve the employees' knowledge on different subjects and also give training in presentations and knowledge transfer. The training could develop the employees and managers and hence an efficiency improvement could be reached for the organization. Depending on the subject, effects might also be realized on effectiveness and adaptiveness. Effectiveness improvements might be reached through subjects such as new technologies or market trends. Adaptiveness improvements could be achieved by subject enhancing e.g. supplier trends or supplier relationship management. To conclude, the focus study could have primary effects on efficiency, effectiveness and adaptiveness.

Lean at the Office

Lean at the office trainings, e.g. the method 5S, were requested by two DP managers in Sweden.

	DP	IDP	CE
SE	2		
CN			

Table 20. Lean at the Office count.

Lean at the office could help employees and managers improve their ways of working and structure of their workplaces. It can smoothen the work and free up time to other tasks. Hence, the training would have an impact considered primary on the organization and its efficiency.

KPI Understanding

Improvement is requested concerning the understanding of the KPIs one is measured against at Volvo Cars and the impact decisions have on the finances and bottom line. Three DP managers in Sweden have requested trainings on this.

	DP	IDP	CE
SE	3		
CN			

Table 21. KPI Understanding count.

Possessing an understanding of the KPIs an employee is measured on could enable the employee to make decisions that are better aligned with the KPIs. The empirical data shows that Volvo Cars deploys effectiveness goals, e.g. cost reduction, and efficiency goals, e.g. number of training days, and that the effectiveness goals sometimes are more important than the efficiency goals. Consequently, a better understanding of the KPIs could affect the effectiveness and efficiency of the purchasing performance. To conclude, effectiveness effects are considered primary and efficiency effects secondary.

5.1.8 Effects of Skills and Activities on Purchasing Performance

Figure 18 summarizes how the Future Skills and Purchasing Academy Trainings affect the purchasing performance according to the previous analysis. The different colors aim to simplify the visualization of the impacts. The summary below only illustrates which part of the purchasing performance is affected and does not reveal the magnitude of the effect. Consequently, a comparison of skills and activities is difficult.

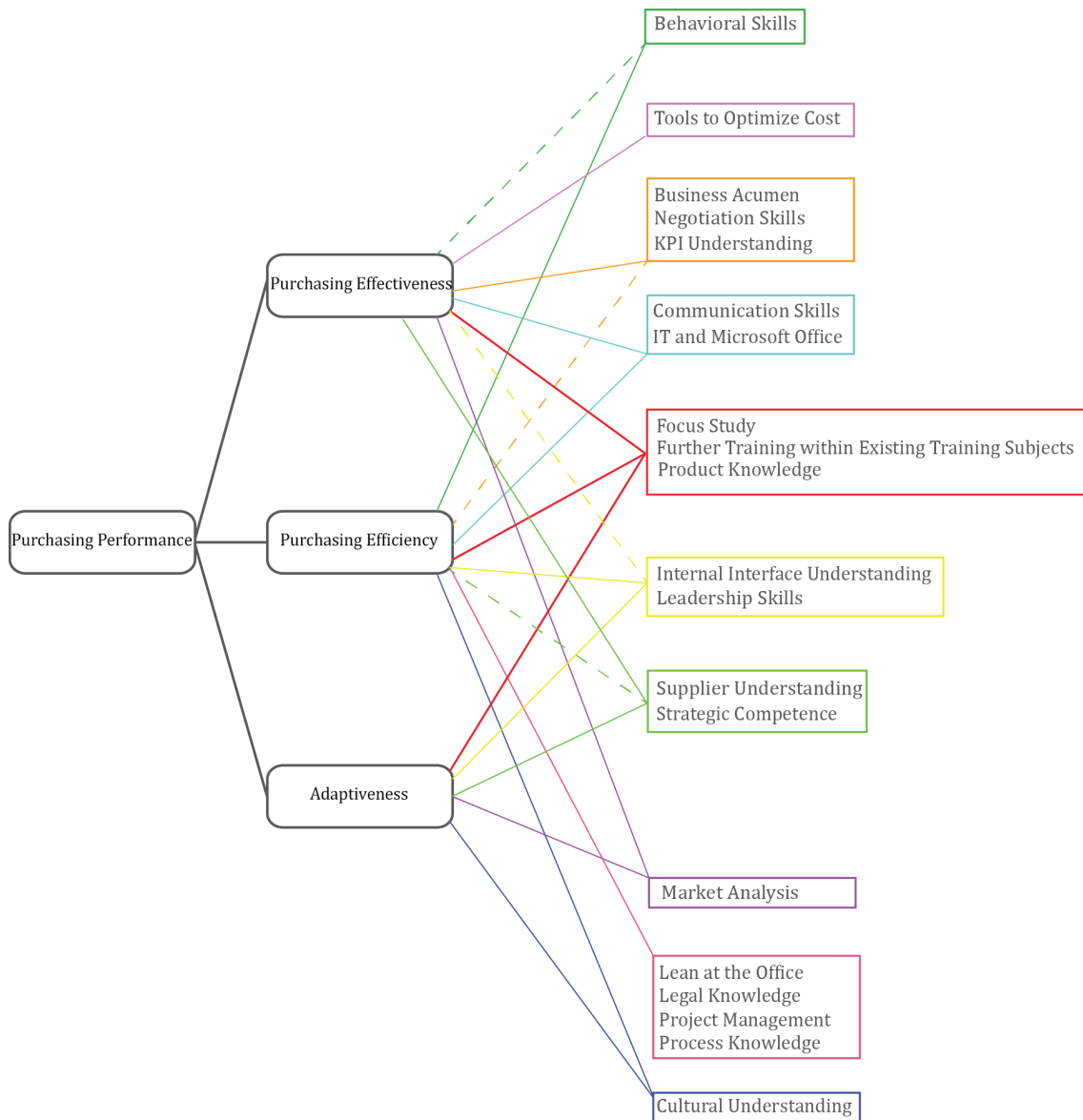


Figure 18. A summary of the analysis on how the 20 skills and training activities affect purchasing performance. The continuous lines indicate primary effects whereas the dashed lines indicate secondary effects.

5.2 Training Setup and Content

The following section contains analysis of topics that concern the setup of trainings, such as what context the trainings should be adapted to and how or where the trainings could be carried out. The topics are measures to enhance the trainings and do not have a direct impact on purchasing performance. The topics covered are Training Activities, Context of Course Content, Trainer, Location, Mixed Groups, Length of Trainings and Reflection.

5.2.1 Type of Training Activities

Training activities is about the different learning forms that can be carried out. Classroom teachings can be mixed with for instance lectures, case study and role-play to stimulate the learning. Four Swedish managers from DP, IDP and CE have mentioned the importance of a mix of classroom activities. Another type of training activity is lunch seminars, which enables understanding and knowledge sharing of various topics. Three managers in total, two Swedish DP managers and one Chinese IDP have given this feedback. Supplier visits is also a type of training activity that allows for deeper understanding of suppliers and has been asked for by three managers in total, two from DP and IDP in Sweden as well as one DP manager in China.

	DP	IDP	CE
SE	5	2	1
CN	1	1	

Table 22. Type of Training Activities count.

5.2.2 Internal or External Training Content

The trainings can be given either internally or externally. External trainings are trainings provided by external suppliers, which are beneficial since it allows for new perspectives and ideas from other industries. However, the drawback is that it may be harder to apply the knowledge acquired with the automotive industry or internal products. In total, eight DP and CE managers from Sweden as well as China have pushed for external trainings. Internal trainings imply course content that is adapted to Volvo context, which is good as employees can relate the knowledge to what they work with. On the other hand, this can make the employees too narrow when it comes to the usage of their knowledge. One Swedish IDP manager has commented on the benefits with internal trainings. The internal training content can be further adapted to a direct material or indirect material context. So far, the trainings have mainly had a direct material focus, thus five IDP managers from Sweden and China have asked for internal trainings that are adapted to indirect material context. Furthermore, the opinion of one Chinese DP manager was that the classes in China should be carried out in Chinese when there are only Chinese participants, to facilitate the understanding of employees and increase the interactions. Internal and external trainings have its benefits and drawbacks. It is therefore essential to have a mix of both, and find an appropriate balance. Internal trainings are probably more appropriate when the courses are purchasing specific, the subjects will benefit from great internal knowledge or when the Volvo Cars perspective is necessary. External trainings may be suitable when one can be inspired by other ways of working or the internal competence in the subject is not sufficient.

	DP	IDP	CE
SE	4	5	3
CN	1	2	

Table 23. Internal or External Training Content count.

5.2.3 Internal or External Trainer

When having internal trainings the trainer may still be external and vice versa, an external training can still have an internal context. In total, nine managers have mentioned the issue of internal and external trainers. With an external trainer the employees can be inspired by a professional trainer with core competence in the subject and other ways of working. Two DP managers from Sweden asked for external trainers. Although internal trainers may not be as professional in training others, the benefits lies in the possibility of enhanced interaction between the trainer and employees. This is because the trainer has the knowledge of the internal processes and methods, which makes it easier to understand questions from employees. Three DP managers from Sweden emphasized the benefits of internal trainers. One Chinese DP manager rooted for internal as well as external trainers. Three Chinese managers from DP and IDP expressed the possibility of having an exchange of trainers between the Chinese and Swedish office. Primarily, there should be internal trainers from Sweden in China due to their deep knowledge of the company's processes and methods, which does not exist in China since the office is rather new.

	DP	IDP	CE
SE	6	1	1
CN	1		

Table 24. Internal or External Trainer count.

5.2.4 Location of Training

The location of the trainings matter, since off-site trainings allows for an actual decoupling of work and employees can better focus on the training. It is not as easy to sneak away to the office to handle emerging matters. This issue was discussed by a DP manager, who mentioned that off-site trainings should complement on-site trainings, which is the usual way due to the convenience. However, off-site training requires more extensive logistics planning such as booking of facility and transportation of the employees, which implies higher costs for the training. Hence, off-site trainings are likely more suitable for training of smaller groups or trainings that do not occur often.

	DP	IDP	CE
SE	1		
CN			

Table 25. Location of Training count.

5.2.5 Mix of Training Participants

Mix of group refers to the essence of having participants from different departments, within the purchasing unit, in the training sessions. By having a mix, buyers and cost estimators can share their knowledge, experiences and opinions, enabling a greater understanding. Although the mix of groups primarily has been emphasized in relation to the capability courses where the mix is particularly important, the concept holds for other functions and trainings as well. For instance, mixed groups is beneficial when having leadership trainings as the managers can share experiences with each other and it also offers networking opportunities that allows for

understanding of other functions. The importance of mixed groups has been mentioned by three Swedish managers, one DP, one IDP and one CE.

	DP	IDP	CE
SE	1	1	1
CN			

Table 26. Mix of Training Participants count.

5.2.6 Length of Training

There have been varying comments on how long and how many training days a training should have. One manager expressed that the trainings days should not span more than two or three days, whilst another manager suggested that the training days should not be too long, i.e. rather have the training spanning over many days with fewer hours per day. By having trainings that only last for two or three days, the employees can get the feeling that the education does not last for too long, which is beneficial since it gives the impression that not too much time is taken away from the daily work. On the other hand, the training might be too intensive with too much information that needs to be processed. If the training days span over many days, it allows for more time for reflection and information absorbing. However, employees might get the impression that the training requires too much time. What length that is more appropriate can be discussed and probably depend on the kind of course. For courses that contain information that is difficult to comprehend and needs time to process, many days is probably necessary to gain more from the course. Courses that are not as difficult to understand and absorb should be shorter since it might be seen as interruptive and inefficient to have half days. Additionally, considerations should be taking according to the preferences and schedules of employees. In total, two Swedish managers have discussed the length of trainings, one DP and one IDP.

	DP	IDP	CE
SE	1	1	
CN			

Table 27. Length of Training count.

5.2.7 Reflection

A lot of time and money is spent on trainings and one should therefore do the utmost to administer and utilize the knowledge acquired. A measure to gain more from trainings is to have reflections in conjunction with the trainings, before, during and after the sessions. The amount of reflections done currently is limited. Currently, for some groups the only reflection done is the small talk with colleagues by the coffee machine. Prior to the trainings, individuals need to reflect more on how the course can benefit him/her and how the competence can be applied, increasing the expectations on the course. This could be carried out with the manager. Interim reflections can be done during trainings, for instance in the end of a day to reflect what has been learnt and try to associate it with the daily tasks of the employee. After the trainings, the employee can discuss with the manager or group how a training has been, how the competence can be used applied and if it delivered according to the expectations. It should be the manager’s responsibility to assure that reflections are done before and after the trainings, but the managers’ need guidelines in how to carry out this. In total, 19 managers from Sweden and

China have asked for more reflections and guidelines, of which eleven are from DP, five from IDP and three from CE.

	DP	IDP	CE
SE	9	4	3
CN	2	1	

Table 28. Reflection count.

5.3 Training Supply and its Structure

The following section contains analysis of topics that concern the training supply, its structure and associated support needed from Purchasing Academy. Similar to the topics in the previous section, these topics are measures to enhance the trainings and do not have a direct impact on purchasing performance. The section will discuss the topics Offering Training Packages, Training Supply for Managers, Frequency of Trainings, Coaching and Support from Purchasing Academy and Differentiation of Mandatory Trainings.

5.3.1 Offering Training Packages

Currently, there is little differentiation of the course supply for the employees in the purchasing unit. The courses are for instance not distinguished for junior and senior buyers and from the course descriptions it is difficult to understand the level of the course. The HR portal LAD contains a large supply of courses and as an employee it is difficult to find courses that are suitable for the role of the employee. Three Swedish managers from DP and IDP have expressed the discontent of LAD. The idea of purchasing stairs, which suggest different course packages according to the experience of the buyers, has been mentioned by nine Swedish managers in total, eight from DP and one from IDP. However, these packages should work as guidelines for employees to see what courses they should take or what competence they should possess, rather than being mandatory for everyone. This is because the employees have different experiences and needs. One DP manager stated that the training supply for seniors need to be improved, and this is probably because it is difficult to know what courses that are suitable for senior employees. If the courses are not differentiated, the risk is that senior employees will assume that the courses are too basic for their knowledge and hence do not participate in the trainings. Thus, by having different packages, experienced employees can become more motivated to participate courses and refresh their knowledge.

Furthermore, the training packages have to be complemented with training plans that are adapted to individual needs, an opinion shared by four managers in total, one from each department in Sweden and one Chinese IDP manager. The benefits from the packages are that employees can more easily see what the opportunities for them are according to their background and have a plan that they can follow. Negotiation is an important skill for buyers and need to be maintained and refreshed continuously. There should hence be a package of negotiation courses as well, that spans over several years with negotiation courses on different levels. Three Swedish managers from DP and IDP expressed the need of negotiation packages.

A package for new employees is also needed to quickly introduce new employees to Volvo Cars and make them understand the organization as well as their role and tasks. Nine Swedish managers, seven from DP and two from IDP has emphasized this. If there was not an

introduction package, the new employees would have to learn from the existing employees, which requires time and effort from the experienced buyers. Thus, the introduction package enables faster learning and requires less effort from existing employees.

Two DP managers from China and Sweden have explained the idea of a purchasing license or diploma, to certify the competence of buyers. A license could motivate buyers to take trainings since they will receive something that shows what they have accomplished. It is important to make employees feel that they gain something from training and not just participate in training because it is mandatory. A VP took the idea further and expressed the thought of a mini MBA for purchasing. This is a measure that hopefully could increase the employee retention and thus decrease the employee turnover. As the cost for this would not be small, there will probably have to be a nomination process to choose the participants. However, the question is what strategy that should be applied, should the buyers that are most engaged and motivated be participating or should buyers that are less motivated to take trainings participate, since these are the people that need to increase their motivation.

	DP	IDP	CE
SE	23	6	1
CN	1	1	

Table 29. Offering Training Packages count.

5.3.2 Training Supply for Managers

Currently, the course supply and training opportunities for managers is very limited. The ITM courses are good for employees that recently have become managers and provide a good base. However, after the introduction courses, there is no training to support managers in their role. In total, 13 Swedish managers, ten from DP and three from IDP has expressed the need of better course supply for managers. Furthermore, the manager courses should also be in different packages, distinguished by the manager type. For example, the section managers need different kinds of leadership courses compared to the group managers, since the way to handle regular subordinates differ from the way of handling subordinates that are managers. The course supply of managers is something that should be initiated by the central HR department since it does not apply for purchasing managers only. However, Purchasing Academy should push and demand managers on higher levels as well as HR to start the work of increasing the supply for managers. If possible, Purchasing Academy could start with minor leadership programs or activities for the managers within purchasing to initiate the work.

	DP	IDP	CE
SE	10	3	
CN			

Table 30. Training Supply for Managers count.

5.3.3 Frequency of Trainings

Frequency of trainings refers to the continuity of the training sessions, i.e. courses need to be offered regularly during the year. In total seven Swedish managers from DP and CE have emphasized this. It is important since the employees may miss out on a training session due to

impediments and should be given another chance to take the training not too long after the missed training opportunity. Furthermore, with the introduction of new employees, it is essential that the employees feel that the company wants to invest in them and that they quickly get introduced to for instance systems and working methods. If trainings are not offered continuously, and are cancelled often due to different reasons, it can make employees lose faith in trainings and education. Consequently, trainings will be deprioritized and employees will not be motivated to participate in trainings, which can have tremendous effects. One DP managers asked for the update of courses, which is important as well to prevent the course content from being obsolete.

	DP	IDP	CE
SE	7		1
CN			

Table 31. Frequency of Trainings count.

5.3.4 Coaching and Support from Purchasing Academy

Once a year, an LNA is handed in from managers, which is a list of the courses that the managers’ employees would like to participate in. Three Swedish managers from DP and CE desired that the LNA should be handed in more than once a year, since a lot can happen during one year. New employees join the team and existing employees might discover an interesting training after the deadline of the LNA. It is understandable that training needs to be planned in advance, but managers should be given another opportunity to ask for trainings. Furthermore, two managers, one DP and one CE from the Swedish office, have asked for more coaching and support from Purchasing Academy. The feedback could concern feedback on the LNA, whether the course participation was accepted or not, as well as feedback on what to do if opportunities are missed out. Purchasing Academy could also get back to managers and together evaluate the LNA, to show managers what opportunities that have been missed out to give the managers a reminder and push them to utilize the resources.

	DP	IDP	CE
SE	3		2
CN			

Table 32. Coaching and Support from Purchasing Academy count.

5.3.5 Differentiation of Mandatory Trainings

Some courses have been mandatory for employees, for instance the capability courses. It can be questioned whether the courses should be mandatory for everyone, since it is not applicable for all buyers or cost estimators. This issue was brought up by an IDP manager. For instance, the Clean Sheet Analysis training has previously had a direct material focus, which makes it less relevant for indirect material buyers since the purchases they make are quite different. The cost breakdown and method is interesting, but it might be difficult for IDP buyers to understand the product or relate the method to their purchases. Another example is the LCC/China sourcing training, which is not relevant for some buyers since they do not source from China or low cost countries anymore. Since an evaluation concluded that the organization needs to improve in those areas and it became mandatory to participate in at least two of the three capability courses,

it is reasonable to argue that all employees in the purchasing unit should participate. However, if that is the case, then the courses should also be adapted so they are applicable for all employees, to make them feel that the training is worthwhile.

	DP	IDP	CE
SE		1	
CN			

Table 33. Differentiation of Mandatory Trainings count.

6 Discussion

This chapter aims to answer Research Question 3. The chapter sets Purchasing Academy and the purchasing unit at Volvo Cars in a wider context by discussing Chapter 4, Empirical Data, and Chapter 5, Analysis, in relation to Chapter 2, Theoretical Framework. Further, the chapter seeks to discuss subjects that have aroused during the work process of the study. The chapter starts by discussing Training and Purchasing Performance, followed by Purchasing and Interfaces and ends with Education and Performance within the Purchasing Unit.

6.1 Training and Purchasing Performance

According to Chapter 5, Analysis, the different groups of skills could imply an effect on different parts of the purchasing performance, i.e. effectiveness, efficiency and adaptiveness. However, when conducting the interviews, it was evident that managers found it difficult to identify the effects from the courses as well as to estimate the magnitude of such an effect. Hence, no numbers on for example timesaving in work or cost reduction could be retrieved. Ultimately, such numbers would have been useful to justify a particular training as well as Purchasing Academy's activities.

The purchasing performance impact derived from the courses is the effect on effectiveness, efficiency or adaptiveness. However, as the interviews revealed, it is difficult to specify and measure effects. There are several possible reasons to why it is challenging to quantify the effects. First, the ability to embrace the knowledge acquired in training varies between individuals. Therefore, it is difficult to give an overall figure for the group. Second, to be able to measure an improvement or deterioration, the initial state must be known, e.g. the work pace of the specific subject must be known beforehand in order to measure a training's impact on the work pace. Third, the usefulness in the work responsibilities of a specific training varies between both the different roles within a group and the different purchasing types. As the interviews revealed, some course content is more suitable for junior buyers rather than senior buyers with many years of experience. Additionally, some course content was not adjusted to the IDP context, which made it less useful for that purchasing type. Fourth, the buyers and cost estimators are affected by the surroundings. For example, the cost, quality and logistics agreement of a negotiation could be affected by improved negotiation skills, but might simultaneously be affected by a change in raw material costs for the supplier. Consequently, the effect might not be derived from solely the trainings.

The target group of a course, i.e. the targeted course participants, can be of varying size. For example, if a course targets IDP it will have much less participants than if the course targets all three purchasing types. More participants enable a larger spread of the purchasing performance effect in the purchasing unit since more employees can contribute to the effect. Consequently, a large participant group can potentially result in higher overall performance impact.

As a result of the difficulty to dimension the purchasing performance effects, it is problematic to compare purchasing performance effects between different courses or groups of skills. Hence, a recommendation on which courses should be implemented solely based on the greatest purchasing performance improvement would be difficult to make. One way to hedge against low purchasing performance impact is to take into account the target group size since a larger group could imply that more employees contribute to the purchasing performance impact. Hence,

courses with potential to reach many employees could be selected over courses reaching few employees. However, it is important to remember that targeting many people does not reveal the magnitude of the purchasing performance effect. Consequently, a course targeting few people might receive an effect equal to or greater than the course targeting many people.

6.2 Purchasing and Interfaces

As described in the Introduction and Theoretical Framework, the importance of purchasing is increasing with its contribution to a firm's strategic success. To cope with the strategic view of purchasing, as opposed to the traditional one where buying decisions are isolated, a supply network perspective is required. Consequently, there are three strategic roles that purchasing has to undertake, i.e. cost rationalization, development as well as time and space. The roles imply a total cost approach on purchases, collaboration with internal functions and suppliers in the product development to foster innovativeness as well as the task to find synergies between past, future and other parallel purchases. To be able to perform these roles well, employees in the purchasing unit have to manage internal interfaces, i.e. other departments in the firm and stakeholders, as well as external interfaces, i.e. suppliers. For the DP unit the internal interfaces are more of a similar character while the IDP unit has a larger range of internal interfaces due to the diverse stakeholder needs that have to be fulfilled. Regarding the external interfaces, the IDP unit has a larger amount of interfaces as well, compared to the DP unit, due to the large number of suppliers that IDP interact with. The CE unit has a larger amount of internal interfaces than external interfaces, since it is a support function in the purchasing unit and primarily interacts with internal actors.

According to theory, firms need to find a suitable level of involvement when it comes to the interaction with a supplier. The firms need to invest more in the suppliers that are worthwhile and can contribute to the firm's development, to ensure effective use of resources. In the case of Volvo Cars, it can be seen that the company adopts different levels of involvement, as the relationships with suppliers depend on type of product and market characteristics. To assure that the company follows market development, the different relationships and markets need to be continuously monitored and actions need to be taken when required. This holds particularly for Volvo Cars due to the competitive automotive industry. Furthermore, internal activities of Volvo Cars need to be continuously monitored as well, as activities are interdependent, i.e. internal activities of a firm are dependent on and interact with external firms while external firms at the same time affect the internal activities. Activities of a company are not undertaken in isolation, on the contrary they are part of a larger constellation and interdependent with activities outside the firm boundary. Thus, a key task for the purchasing unit at Volvo Cars is to configure internal activities with suppliers' activities, as it is the unit that handles suppliers and simultaneously have to fulfill requirements from internal stakeholders. For example, buyers at Volvo Cars have to ensure that the suppliers deliver the right quantity of products on right time with right quality. To assure this, the buyers have to communicate with internal departments to specify the requirements and thereafter convey this information and specifications to the suppliers.

According to theory, resources are not always given. By combining and recombining relationships, new resource dimensions can be explored and developed. Thus, a key task for buyers at Volvo Cars is to assess internal resources and their development as well as external resources to see what fits the company and identify where resource combining or recombining

can be performed. By handling the interface between internal and external resources well, resource utilization can be enhanced. For example, plastic parts are bought from a supplier since producing plastic parts is not a core competence of Volvo Cars. By interacting with the supplier, Volvo can access and utilize the external resources and consequently the supplier achieves greater economies of scale than Volvo Cars could achieve internally. By exploring the business relationships of Volvo, the company can reach resources that are not available in-house and mutual learning with suppliers can be achieved. Furthermore, as a result of outsourcing, Volvo Cars can focus on their core competence and thereby allocate resources accordingly. The assessment of internal and external resources needs to be done continuously to be able to discover possible resource combining and recombining.

Interactions between firms shape a wide range of actors, and the actors have an important role for the supply side since they execute activities and control resources. Employees in the purchasing unit have to interact with actors from both the internal, for example between R&D and the purchasing department, as well as the external environment. Firstly, the internal actors, i.e. employees from other departments, have requests and conditions that the buyers need to adhere to. Secondly, the buyers have to interact and cooperate with the external actors, i.e. suppliers, to be able to fulfill the requests and possibly deliver better solutions. Buyers constantly have to balance the interaction between being influenced and influence the other actors. However, one of the most important roles is to manage the external interfaces in such way that it to the greatest extent supports the overall goal of the firm. To be able to do this, the internal actors of the firm need to collaborate with the buyers. Thus, the internal actors of Volvo Cars need to collaborate and share information to a greater extent with employees in the purchasing unit. By collaborating and sharing information, the purchasing unit can better combine resources, configure activities and increase the efficiency and performance of the company. It is crucial for the purchasing unit to be aware of the internal activities, as the supply network is large with many actors and possibilities. Knowing how to most efficiently as well as effectively manage internal and external interfaces support purchasing's contribution to the firm's strategic success.

6.3 Education and Performance within the Purchasing Unit

As previously discussed, the purchasing unit affects and is affected by internal as well as external factors. Further, the purchasing unit cannot be considered in isolation and with the emerged strategic role, a network perspective is required. The network affects the purchasing unit and consequently also the purchasing performance. Concerning Purchasing Academy and Volvo Cars, the internal and external factors imply that purchasing performance effects cannot be derived solely from trainings of internal employees.

As the interviews revealed, the awareness of effects from trainings is rather unknown. More efforts should therefore be put on increasing the understanding of how and what effects trainings provide. As the analysis indicated, many managers request reflections before, under and after trainings. Effects from trainings could be identified through reflection and questioning with the purchasing performance dimensions, i.e. cost, quality, logistics and organization, as a basis. Furthermore, reflections can make employees realize the usability and value of the trainings, and thus understand the contributions trainings can give from an individual as well as firm level. Consequently, employees could to a higher degree embrace the knowledge acquired and ultimately, reflections could increase the motivation for trainings. Additionally, by

understanding the usefulness and thereby effects of trainings, appropriate measurement techniques based on purchasing performance dimensions could be developed.

Purchasing per se is becoming more strategic in firms and thus its importance is increasing. Further, as purchasing performance is affected by several factors, a shift from an operational short-term approach, towards a long-term strategic and holistic approach is necessary. Shifting from a "putting out fires" attitude towards a "prevent fires" attitude with a clear role distinction facilitates this process. However, the purchasing unit cannot be strategic by itself due to the dependencies on other stakeholders and actors. Consequently, the purchasing unit has to manage many interfaces both internally and externally and a mean to facilitate and enhance the management of interfaces could be training activities. Through training activities, the understanding of the purchasing unit, purchasing performance as well as strategic view of purchasing and their interconnectedness can be enhanced. Furthermore, by learning in an educational environment, employees have the chance to reflect and test the knowledge before applying it in a real context. Additionally, internal understanding may be facilitated by education and, as requested by managers, mentorship and shadowing programs. However, there must be sufficient support from management to encourage and motivate the education.

7 Conclusions and Recommendations

The thesis aimed to evaluate the effects of Purchasing Academy’s activities on the purchasing unit at Volvo Cars. The conclusions and recommendations will give the Purchasing Academy guidance on what activities to allocate the resources to in the future in order to support the goal achievement of the purchasing unit, i.e. becoming the best purchasing unit in the industry.

The thesis has identified 20 skill gaps within Future Skills and Purchasing Academy Trainings that have to be bridged for the purchasing unit to achieve future goals. The category Future Skills and Purchasing Academy Trainings concerns issues related to lack of specific competences and training activities that Purchasing Academy could provide in order to improve the overall purchasing competence. The 20 gaps were prioritized according to how the gap affects the purchasing performance and the extent to which the gap was present in China and Sweden as well as all different purchasing types. Hence, the prioritization is made with regard to all purchasing types. The prioritization resulted in *Table 34*, which recommends the order in which the skill gaps should be bridged starting with Priority 1 and ending with Priority 3. The gaps are presented in no particular order within each Priority group. For further explanations of each group, see Chapter 5, Analysis.

Future Skills and Purchasing Academy Trainings

Priority 1	Priority 2	Priority 3
Communication Skills	Behavioral Skills	Cultural Understanding
Further Training within Existing Training Subjects	Business Acumen	Focus Study
Internal Interfaces Understanding	KPI Understanding	Lean at the Office
IT and Microsoft Office	Leadership Skills	Process Knowledge
Market Analysis	Legal Knowledge	Product Knowledge
Negotiation Skills	Project Management	Tools to Optimize Cost
Strategic Competence		
Supplier Understanding		

Table 34. Prioritization of desired Future Skills and Purchasing Academy Trainings. Implementation should start with Priority 1 and end with Priority 3.

Furthermore, to better match the purchasing unit’s demand on the activities, aspects regarding Training Setup and Content as well as Training Supply and its Structure have to be taken into consideration when forming the trainings to bridge the skill gaps. Training Setup and Content refers to one particular training and how it should be setup and organized as well as how the content should be managed. Training Supply and its Structure relates to aspects concerning the overall training supply and structure and how it should be managed. The identified aspects were prioritized according to the gaps’ relevance to the Chapter 6, Discussion, i.e. purchasing performance, interfaces and education within the purchasing unit, but also the extent to which the gap is present in China and Sweden as well as all purchasing types. Training Setup and Content were given a high and low importance, indicating which aspects are more important to consider when implementing new trainings. Prioritization is not applied on Training Setup and

Content as these are issues that hold continuously for training. Training Supply and Structure were given a suggested order of implementation, starting with Priority 1 and ending with Priority 3. The prioritization resulted in *Table 35 and 36*.

Training Setup and Content

High importance	Low importance
Internal or External Training Content	Length of Training
Reflection	Location of Training
Type of Training Activities	Mix of Training Participants
	Internal or External Trainer

Table 35. Importance of issues concerning Training Setup and Content.

Training Supply and its Structure

Priority 1	Priority 2	Priority 3
Coaching and Support from Purchasing Academy	Training Supply for Managers	Differentiation of Mandatory Trainings
Offering Training Packages		Frequency of Trainings

Table 36. Prioritization of changes concerning Training Supply and Structure.

Since Volvo Cars is acting in the competitive automotive industry, cost reductions are necessary in order to meet the competition. Further, purchasing stands for a majority of the car cost and hence purchasing plays an important role at Volvo Cars. Moreover, the purchasing function is centralized and located high in the organization hierarchy since the Senior Vice President (SVP) of Purchasing & Manufacturing reports directly to the CEO, which indicates that purchasing is an important matter. The purchasing function is divided geographically and has offices in Gothenburg and Shanghai, China, both reporting to the same SVP. The purchasing function at Volvo Cars consists of several departments handling Direct Material Purchasing (DP), Indirect Material Purchasing (IDP) or purchasing support functions, such as Cost Estimating (CE).

The primary goals for DP and IDP are commercial as well as assurance of delivery of the right goods and service, in the right quantity, at the right time, whereas the primary goal for CE is to reach a zero cost gap. Moreover, all three purchasing types have goals concerning organization and employee development, e.g. number of training days. The sourcing processes differ between DP and IDP, whereas CE is involved in different phases of the DP sourcing process. However, the DP and IDP processes have in common that they require interfaces and close collaboration with other departments. The reasons are that buyers cannot make the supplier selections alone, especially IDP that does not have its own budget but make the purchases from the internal customer’s budget. Additionally, the IDP interfaces tend to vary more than DP due to the fact that IDP manages purchasing for different stakeholders within the entire organization. Furthermore, the bought product or service determines the type of supplier relationship and the supplier selection criteria. The supplier relationships vary from close collaboration to arm’s length distance. For DP, the selection criteria can be categorized into order qualifiers and order winners, where the latter most commonly is cost or total cost of ownership, depending on

purchased product. Hence, the orientation deployed by DP varies depending on the purchased product. For IDP, the selection criteria are cost and fulfillment of technical specification. As IDP currently is implementing a new, more strategic sourcing process, the purchases are moving towards a total cost of ownership perspective, which in turns indicates a move from a buying orientation towards a procurement orientation. To conclude each purchasing type varies in orientations, goals and interfaces.

The interviews revealed difficulties to specify effects on purchasing performance from Purchasing Academy's activities due to varying reasons. One way to in the future enable a measurement of effects from trainings would be to incorporate reflection before, under and after trainings. Purchasing Academy has to provide means and standards for measurement of effects during reflections in order to enable managers' evaluation of employees. However, even though effects on purchasing performance are measured it is difficult to isolate Purchasing Academy's effects from other effects. Purchasing is part of a network and the employees interact with actors in both the internal, as previously described, and external environment. Consequently, purchasing is dependent on and affected by other actors. Hence, purchasing cannot be seen in isolation and its performance is influenced by several factors other than trainings. It is important for Purchasing Academy to consider that its activities are not isolated from other factors influencing purchasing performance.

Furthermore, if the purchasing employees manage the interfaces, i.e. resource combinations and activity links, to the actors well a positive effect on the purchasing performance can be generated. By providing education on understanding the interfaces, Purchasing Academy can improve the management of interfaces. However, it is important to remember that the interfaces differ between DP, IDP and CE, which generates a need for differentiation of trainings depending on purchasing type. To further describe and analyze those different interfaces would be an interesting topic for future studies.

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Appendices

Appendix 1: Interviewees

Interviewees per Purchasing Type and Organizational Level

	Vice President	Section Managers	Group Managers	Total number of interviewees
Cost Estimating	1	1	5	7
Direct Purchasing	2 ²	9	22	33
Indirect Purchasing	0 ²	4	10	15
Total number of interviewees	3	14	37	54

Direct Material Purchasing (DP) Interviewees

Name	Organizational Level	Country	Purchasing Type	Interview Date
Anders Frostberg	Group	Sweden	DP	2014-03-18
Anders Hörvallius	Group	Sweden	DP	2014-03-10
Anders Svensson ¹	Department	Sweden	IDP/DP	2014-05-06
Anna Tell	Group	Sweden	DP	2014-03-17
Bert Larsson	Section	Sweden	DP	2014-04-01
Carina Ferdell	Section	Sweden	DP	2014-04-15
Catarina Sonnerup	Section	Sweden	DP	2014-04-07
Donald Jägell	Group	Sweden	DP	2014-03-12
Ellie Wu	Group	China	DP	2014-04-01
Fredrik Boman	Group	Sweden	DP	2014-03-12
Frieda He	Group	China	DP	2014-04-02
Iris Zeng	Group	China	DP	2014-03-28
Jan Carlson	Group	Sweden	DP	2014-03-25

² Direct material purchasing is separated into Car Purchasing and Powertrain. One Vice President manages both indirect material purchasing and Powertrain. Consequently, he had to be put in one of the two purchasing types and is therefore counted in direct purchasing.

Jan Sörlie	Section	Sweden	DP	2014-04-01
Jennifer Shen	Group	China	DP	2014-04-09
Jens Wetterskog	Group	Sweden	DP	2014-03-26
Jonny Samuelsson	Group	Sweden	DP	2014-03-12
Jörgen Bengtsson	Group	Sweden	DP	2014-03-26
Karolina Wejedal	Group	Sweden	DP	2014-03-17
Lena Myhren	Group	China	DP	2014-03-27
Leo Yao	Group	China	DP	2014-04-03
Magnus Leiner	Section	Sweden	DP	2014-04-09
Martin Lidén	Department	Sweden	DP	2014-04-28
Michaela Peterson	Group	Sweden	DP	2014-03-31
Niclas Bodin	Section	Sweden	DP	2014-04-02
Niklas Johansson	Group	Sweden	DP	2014-03-24
Ola Josefsson	Group	Sweden	DP	2014-04-02
Per Johansson	Group	Sweden	DP	2014-04-09
Rolf Möller	Section	Sweden	DP	2014-03-31
Sten-Ole Svensson	Section	Sweden	DP	2014-04-09
Susanne Pålsson	Group	Sweden	DP	2014-03-07
Tommy Öjefelt	Group	Sweden	DP	2014-03-24
Ulf Johansson	Section	Sweden	DP	2014-04-01
Total Number of Interviewees				32

Indirect Material Purchasing (IDP) Interviewees¹

Name	Organizational Level	Country	Purchasing Type	Interview Date
Anders Öhlén	Group	Sweden	IDP	2014-03-20
Carsten Jensen	Group	Sweden	IDP	2014-03-19
Henglei (Henry) Xu	Group	China	IDP	2014-04-09
James Liu	Group	China	IDP	2014-03-26
Jan Ekelöf	Group	Sweden	IDP	2014-03-14
Johan Larsson	Section	Sweden	IDP	2014-04-07
Johan Öhlin	Group	Sweden	IDP	2014-03-20
Kathy Zhang	Section	China	IDP	2014-04-09

Kjell-Åke Eriksson	Section	Sweden	IDP	2014-04-07
Luyu Chen	Group	China	IDP	2014-03-26
Michael (Chang) Liu	Group	China	IDP	2014-03-19
Patrik Hellgren	Group	Sweden	IDP	2014-03-18
Robert Löfgren	Group	Sweden	IDP	2014-03-12
Sofia Peterson	Section	Sweden	IDP	2014-03-31
Total Number of Interviewees				15

Cost Estimating (CE) Interviewees

Name	Organizational Level	Country	Purchasing Type	Interview Date
Andreas Olsson	Department	Sweden	CE	2014-04-24
Frida Linder	Group	Sweden	CE	2014-03-28
Håkan Bråvi	Group	Sweden	CE	2014-03-13
Mats Lyckberg	Group	Sweden	CE	2014-03-17
Mikael Thor	Group	China	CE	2014-03-18
Mobby Wu	Group	Sweden	CE	2014-03-27
Tage Nederman	Section	Sweden	CE	2014-04-01
Total Number of Interviewees				7

Appendix 2: Interview Guide

VP Interview Guide

Introductory questions

1. Please tell us about you and your job.
2. What are your main tasks?
3. How long have you had this position?
4. Could you please tell us what a normal day looks like?

RQ1-related questions

5. What kind of supplier relationships do you want to have within your department?
6. What strategies do you deploy in order to achieve the supplier relationships you want?
7. How do you set goals?
8. How well have you achieved the goals lately?
 - a. What was the key to your success/failure?
9. How important is it to achieve all set goals?
 - a. Are some goals more important than others?
10. How do you make sure the goals are relevant for your department?
 - a. How do you make sure that you measure the right things?
11. How do you make sure the goals are consistent and do not interfere with overall goals?
 - a. Within your department?
 - b. Between the purchasing departments?
12. What is purchasing performance for you?
13. What are the greatest contribution factors to purchasing performance?
14. How could one link competency to profitability?
15. How should education be prioritized?

RQ2-related questions

16. What do you lack within your department in order to achieve your goal?
 - a. Concerning competency and ways of working for your employees?
 - b. Concerning activities that Purchasing Academy could offer?
17. What competency and skills are needed to perform well as a buyer or cost estimator?
18. How do you ensure the employees make use of the skills learned at an education?
19. How do you free up time for employees to participated in courses?

RQ3-related questions

20. Have you taken any courses?
21. Do you have any opinions on current course supply?
22. How could the managers' course supply be improved?

SM Interview Guide

Introductory questions

1. Please tell us about you and your job.
2. What are your main tasks?
3. How long have you had this position?
4. How many group managers are there within your section?

Question 5 asked if DP or IDP interviewee:

5. What type of purchasing does your section make?

RQ1-related questions

Question 6-7 asked if DP or IDP interviewee:

6. In general, what criteria do you consider when you make a supplier selection?
7. What kind of supplier relationships do you want to have within your section?

Question 8 asked if CE interviewee:

8. What characteristics make a great cost estimator?
9. What are the goals for your section?
 - a. Short-term goals?
 - b. Long-term goals?
 - c. Are the goals relevant for you?
 - d. From where do the goals derive?
10. How well have you achieved the goals lately?
 - a. What was the key to your success/failure?
11. What goals or requirements do you put on the group managers?

RQ2-related questions

12. What do you lack within your section in order to achieve your goal?
 - a. Concerning competency and ways of working for your employees?
 - b. Concerning activities that Purchasing Academy could offer?
13. What do you think of education?
14. How do you free up time for employees to participated in courses?

RQ3-related questions

15. Your section has taken the following courses (hand over list of courses). Is the list complete?
16. What did you expect from the courses?
17. Which effects did you see from the courses?
 - a. In terms of employees' competency or ways of working?
 - b. Other effects?
18. How could the managers' course supply be improved?

GM Interview Guide

Introductory questions

1. Please tell us about you and your job.
2. How long have you had this position?
3. How many employees are there within your group?

Question 4 asked if DP or IDP interviewee:

4. What type of purchasing does your section make?

RQ1-related questions

Question 5-8 asked if DP or IDP interviewee:

5. What criteria do you consider when you make a supplier selection?
 - a. Order winners?
 - b. Order qualifiers?
6. What kind of supplier relationships do you want to have within your section?
7. How often do you introduce new suppliers?
8. Describe a typical purchasing process.

Question 9-10 asked if CE interviewee:

9. In what phases of the purchasing process does cost estimator participate?
10. What characteristics make a great cost estimator?
11. What are the goals for your section?
 - a. Short-term goals?
 - b. Long-term goals?
 - c. What is your approach to reach the goals?
12. How well have you achieved the goals lately?
 - a. What was the key to your success/failure?

RQ2-related questions

13. What do you lack within your section in order to achieve your goal?
 - a. Concerning competency and ways of working for your employees?
 - b. Concerning activities that Purchasing Academy could offer?

RQ3-related questions

14. Your section has taken the following courses (hand over list of courses). Is the list complete?
15. What did you expect from the courses?
16. Which effects did you see from the courses?
 - a. In terms of employees' competency or ways of working?
 - b. Other effects?
17. Which courses have had the most positive effects on your group?
18. Which courses have had the most negative effects on your group?
 - a. If no negative courses: which courses have had the least effect on your group?

Appendix 3: PA Course List and Description

The course summaries are extracted from Volvo Cars' Internet, thus some information is in Swedish.

Course Name	Summary
Negotiation skills (Mindset)	<p>Avancerad förhandlingsteknik programmet tar avstamp ifrån och bygger vidare på de kunskaper och färdigheter som deltagarna fått med sig ifrån Förhandlingsteknik grund kursen PRO00018 . Det sker genom att programmet börjar med en grundlig tillbakablick på vad som fungerat bra respektive mindre bra, samt hur det gått med tillämpningen av de verktyg och metoder som deltagarna fått med sig. Därefter fokuseras träningen till övning och problemlösande i verklighetsnära case. Vi fördjupar oss också inom områdena kommunikation och förmågan att leda och styra processen, vilket leder till att deltagarna ytterligare stärker sin förmåga att framgångsrikt hantera upplevt svåra förhandlingssituationer. Erfarenhetsutbyte och spridning av best practice är den röda tråden genom hela programmet.</p>
Purchasing Techniques, advanced	<p>Kursen genomförs i föreläsningsform där teoretiska genomgångar och exempel varvas med diskussioner och frågestunder. Deltagarna har också möjlighet att ställa frågor i syfte att skapa utveckling utifrån de utmaningar och mål som gäller för den egna rollen som inköpare. Leveransprocessen, leveransbevakning och kvalitet</p> <ul style="list-style-type: none"> • Flödeskartläggning • Logistikens verktygslåda • Produktionsstyrning • Lagerhantering och materialstyrning • Uppföljningsprocessen • Transport och informationssystem
Purchasing Techniques & Law, basic	<p>Kursen genomförs i föreläsningsform där teoretiska genomgångar och exempel varvas med diskussioner och frågestunder. Deltagarna har också möjlighet att ställa frågor i syfte att skapa utveckling utifrån de utmaningar och mål som gäller för den egna rollen som inköpare. Inköpsteknik 1 dag</p> <ul style="list-style-type: none"> • Inköpsfunktionens syfte och mål • Inköpsprocessen – från behovsanalys till leverans och uppföljning • Behovsanalysprocessen • Marknadsanalysprocessen och leverantörsbedömning <p>Inköpsjuridik 2 dagar</p> <ul style="list-style-type: none"> • Avtalslagen och köplagen • Internationella köplagen • Konsumentköplagen • Räntelagen • Avtalsprocessen • Fullmakter • Incoterms

Course Name	Summary
Light CQDC	1. Introduction 2. Background - experiences 3. 8D Presentation - Checklist 4. Review example of 8D report 5. "5xWHY" 6. Practical 7. Lessons learnt
Volvo Museum	Visit the Volvo Museum and get a close look at historical Volvo vehicles, from cars and concept vehicles to fighter jets. At the museum you can follow the development of Volvo from the very first car built in 1927 to today's modern cars and trucks. What is more, you can see historic rally cars, models from Volvo Aero, Volvo Penta and much more.
China Growth Step 2 for Approvers	As a part of China growth and shape 2020 Strategy, the Organization changes affects Business Processes and Purchasing system SI PLUS. This education is about changed Business rules and modified or new screens in SI PLUS due to Global or Split Business.
Product knowledge basic - individual booking	En genomgång av områdena Säkerhet och Miljö på Volvo Cars Brand Experience Centre samt en demokörning av hela modellprogrammet (utvalda motoralternativ) inklusive en genomgång/demonstration utav utvalda tillbehör på Volvo Cars Demo Centre
Training in Aftermarket Business knowledge for Purchasing	Training in Aftermarket Business knowledge for Purchasing
Manufacturing Site Assessment – Audit technique	The focus will be on interview technics both theoretical and practical
Product knowledge follow-up - individuell booking	En fortsättningskurs på produktkännedomsutbildningen vilken innefattar information om aktuellt modellprogram samt demokörning (utvalda motoralternativ). Kort genomgång/demonstration av utvalda tillbehör på Volvo Cars Demo Centre.
CBP - Commodity business Plan - kurs nybörjare	* Filosofi - Varför? * Verkyget - Upplägg * Grafer * Exempel ur verkyget * Var skall olika saker ligga?
CBP - Commodity business Plan - kurs refreshers	* Filosofi - Varför? * Verkyget - Upplägg * Grafer * Exempel ur verkyget * Var skall olika saker ligga?
CBP Benchmarking	Benchmarkfilosofi, upplägg, tidsplan, vilka bilar 2012, genomgång av benchmarkmall
Corporate Social Responsibility training Purchaing	Corporate Soacial Responsibility training Purchasing. Inform the Purchasing organisation employees about Corporate Social Responsibility and initiatives within Purchasing.
Bought Capacity	Obtain knowledge about the new Bought capacity functionality in SI Plus and also the process that Purchasing will use when working with both new agreements and change management.
Clean sheet analysis training	<ul style="list-style-type: none"> • What are clean sheets? • When to use clean sheets? • Why use clean sheets? • How to build a clean sheet – Step by step guide • How and where to get information to complete a clean sheet analysis • How to use clean sheets in a negotiation • Supplier negotiation simulation/role-play

Course Name	Summary
Fact based negotiation	<ul style="list-style-type: none"> • Ensure fact-based preparations and effective negotiations by utilizing built up capabilities and elements of good negotiation practice for your commodity • Build a fact base by utilizing competence within the field of Product/service/value creation to construct a visual representation of a product tree, production process & Value Chain for your commodity. • Develop a "should cost" model for your commodity and use deviations to cost estimates to identify negotiation variables and levers • Develop a negotiation "tool box" of useful analysis for your commodity to be applied in future negotiations • Optimize the benefit on how different factors impact negotiations within your area and how different circumstances impact the negotiation approach, to use this to your advantage
LCC/China sourcing training	<ul style="list-style-type: none"> • LCC/China sourcing overview • VCC's strategy for LCC sourcing and reverse globalization • Challenges and key success factors for LCC/China sourcing • Screening and identifying commodities • Developing a LCC/China sourcing strategy for a commodity • Decision criteria in LCC/China sourcing • Identifying, qualifying and developing global suppliers • Supplier meeting simulation/role-play
China Growth Step 2 for Buyers (and the role Admin in SI Plus)	<p>As a part of China growth and shape 2020 Strategy, the Organization changes affects Business Processes and Purchasing system SI PLUS. This education is about changed Business rules and modified or new screens in SI PLUS due to Global or Split Business.</p>

Appendix 4: Opinion Details and Count

Explanation of table columns:

Opinion: The opinion expressed by the interviewees.

Country: The interviewees' office country, i.e. Sweden or China.

Group Name: Similar opinions are clustered under the same group name. These are the group analyzed in Chapter 5.

Group Topic: Refers to the note color in the KJ-Method sorting. Can be of five types:

- Skills Desired (interviewees expressed an opinion of a desired skill)
- Courses Desired (interviewees expressed an opinion of a desired course)
- Issues Regarding Course Supply and Structure (interviewees expressed an opinion of a how the course supply should be structured)
- Issues Regarding the Purchasing Unit (interviewees expressed an opinion of a something that the purchasing unit has to supply, i.e. not Purchasing Academy)
- Issues Regarding Context and Content of Training (interviewees expressed an opinion of a how a specific training should be setup in terms of context and content)

Count: The number of interviewees that have expressed the opinion divided by purchasing type (DP, IDP and CE) and a total for all three purchasing types.

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
Behavioral training	Sweden	Behavioral Skills	Courses Desired	2			2
Motivation training	Sweden	Behavioral Skills	Courses Desired	1			1
Psychology training	Sweden	Behavioral Skills	Courses Desired		1		1
Self awareness	Sweden	Behavioral Skills	Skills Desired	1			1
Self-knowing & Conflict management	Sweden	Behavioral Skills	Courses Desired	4			4
Stress management	Sweden	Behavioral Skills	Courses Desired	1			1
Business acumen	Sweden	Business Acumen	Skills Desired	1		1	2
LNA Frequency	Sweden	Coaching and Support from PA	Issues Regarding Course Supply and Structure	2		1	3
More follow-up & coaching from PA	Sweden	Coaching and Support from PA	Issues Regarding Course Supply and Structure	1		1	2
Communication skill for managers	Sweden	Communication Skills	Skills Desired	1	1		2
Presentation & Rhetoric	Sweden	Communication Skills	Courses Desired	3	1		4
Soft skill, communication presentation	Sweden	Communication Skills	Skills Desired			2	2
Technical English	Sweden	Communication Skills	Courses Desired		1		1

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
Presentation & Communication skills	China	Communication Skills	Skills Desired	2	2		4
Better introduction for new employees	China	Course Packages	Issues Regarding the Purchasing Unit	1			1
Seminar info/knowledge sharing from China. Tell, present, culture	Sweden	Cultural Understanding	Courses Desired	2			2
Seminars on different cultures such as China and other countries	Sweden	Cultural Understanding	Courses Desired	1			1
Differentiation of mandatory courses	Sweden	Differentiation of Mandatory Trainings	Issues Regarding Course Supply and Structure		1		1
External influences from other firms	Sweden	External Influences	Issues Regarding the Purchasing Unit	3		1	4
Recruitment of external managers/employees	Sweden	External Influences	Issues Regarding the Purchasing Unit	1	1		2
Focus study & share knowledge to others	Sweden	Focus Study	Courses Desired	1			1
Continuity of courses	Sweden	Frequency of Trainings	Issues Regarding Course Supply and Structure	6		1	7
Update of courses	Sweden	Frequency of Trainings	Issues Regarding Course Supply and Structure	1			1
Capability trainings continuation	Sweden	Further Training within Existing Training Subjects	Courses Desired	1		1	2
Clean sheet in general	Sweden	Further Training within Existing Training Subjects	Skills Desired		2	1	3
Continuation of ITM courses for managers	Sweden	Further Training within Existing Training Subjects	Courses Desired	1		1	2
Capability trainings continued	China	Further Training within Existing Training Subjects	Courses Desired		1		1
Cost break-down	China	Further Training within Existing Training Subjects	Skills Desired	1			1
Negotiation skills	China	Further Training within Existing Training Subjects	Skills Desired	1			1
Change management (e.g. Convince of switch from supplier A to supplier B)	Sweden	Internal Interface Understanding	Courses Desired		1		1
Employee rotation in Volvo and with Volvo China	Sweden	Internal Interface Understanding	Courses Desired	3		1	4
Holistic understanding	Sweden	Internal Interface Understanding	Skills Desired	2			2
Mentor/shadowing training for managers	Sweden	Internal Interface Understanding	Courses Desired	2	1		3
Networking to get better info	Sweden	Internal Interface Understanding	Skills Desired	1		1	2
Understanding of support functions, e.g. SQM	Sweden	Internal Interface Understanding	Courses Desired	1			1
Understanding stakeholders	Sweden	Internal Interface Understanding	Skills Desired	1			1
Employee rotation	China	Internal Interface Understanding	Courses Desired	2	1		3

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
External trainers	Sweden	Internal or External Trainer	Issues Regarding Context and Content of Trainings	2			2
Internal trainers	Sweden	Internal or External Trainer	Issues Regarding Context and Content of Trainings	3			3
Exchanges trainers/people EU & CN	China	Internal or External Trainer	Issues Regarding Context and Content of Trainings	1	1	1	3
Internal & External trainers	China	Internal or External Trainer	Issues Regarding Context and Content of Trainings	1			1
Adjust, IDP context	Sweden	Internal or External Training Content	Issues Regarding Context and Content of Trainings	4			4
External trainings	Sweden	Internal or External Training Content	Issues Regarding Context and Content of Trainings	4		3	7
Volvo context good	Sweden	Internal or External Training Content	Issues Regarding Context and Content of Trainings	1			1
Adjust, IDP context	China	Internal or External Training Content	Issues Regarding Context and Content of Trainings	1			1
Classes in Chinese	China	Internal or External Training Content	Issues Regarding Context and Content of Trainings	1			1
External trainings	China	Internal or External Training Content	Issues Regarding Context and Content of Trainings	1			1
Better IT Procurement system	Sweden	IT	Issues Regarding the Purchasing Unit	3	2		5
Database over existing & potential suppliers	Sweden	IT	Issues Regarding the Purchasing Unit	1			1
LEQM & SI+ trainings	Sweden	IT and Microsoft Office	Courses Desired	1			1
Microsoft Excel	Sweden	IT and Microsoft Office	Courses Desired	2	2		4
Microsoft Excel skills	Sweden	IT and Microsoft Office	Skills Desired	4	1		5
Microsoft Office Package (incl. Training on New versions)	Sweden	IT and Microsoft Office	Courses Desired	1	1	1	3
Microsoft PowerPoint	Sweden	IT and Microsoft Office	Courses Desired	1	1		2
Office Package	Sweden	IT and Microsoft Office	Skills Desired	1			1
Excel skills	China	IT and Microsoft Office	Skills Desired		1		1
Convey goals & goal break-down	Sweden	KPI & Goals	Issues Regarding the Purchasing Unit	2			2
KPI coherence between CE & Purchasing	Sweden	KPI & Goals	Issues Regarding the Purchasing Unit			2	2
Relevant KPI measurement	Sweden	KPI & Goals	Issues Regarding the Purchasing Unit			1	1
KPI linked to training	China	KPI & Goals	Issues Regarding the Purchasing Unit	1	1		2
Understanding KPIs and how decisions affect financials and bottom line	Sweden	KPI Understanding	Courses Desired	3			3

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
Guidelines for leadership & development	Sweden	Leadership	Issues Regarding the Purchasing Unit	1			1
Invest in potential leadership talents	Sweden	Leadership	Issues Regarding the Purchasing Unit	1			1
Managers' role to make sure employees change their behavior	Sweden	Leadership	Issues Regarding the Purchasing Unit	1			1
Coaching manager skills	Sweden	Leadership Skills	Skills Desired	1	2		3
Leadership trainings	Sweden	Leadership Skills	Courses Desired	7	2	2	11
Leadership	China	Leadership Skills	Skills Desired	1			1
Lean at the office (e.g. 5S)	Sweden	Lean at the Office	Courses Desired	2			2
Legal course on terms and conditions	Sweden	Legal Knowledge	Courses Desired		1		1
Legal terms & conditions skills	Sweden	Legal Knowledge	Skills Desired		1		1
Avoid many training days	Sweden	Length of Trainings	Issues Regarding Context and Content of Trainings	1	2		3
Off-site trainings	Sweden	Location of Training	Issues Regarding Context and Content of Trainings	1			1
On-site trainings	Sweden	Location of Training	Issues Regarding Context and Content of Trainings	1			1
Market analysis (e.g. Identify trends)	Sweden	Market Analysis	Courses Desired		1		1
Market analysis (e.g. Identify trends) skill	Sweden	Market Analysis	Skills Desired	4	3	1	8
Market analysis (e.g. Identify trends)	China	Market Analysis	Skills Desired	1			1
Time planning for trainings need to be improved	Sweden	Miscellaneous	Issues Regarding the Purchasing Unit	1	1		2
Training opportunities for consultants	Sweden	Miscellaneous	Issues Regarding the Purchasing Unit		1		1
Better PR of PA	China	Miscellaneous	Issues Regarding the Purchasing Unit		1		1
Mixed course participant groups DP/IDP/SE	Sweden	Mixed of Training Participants	Issues Regarding Context and Content of Trainings	1	1	1	3
More time for negotiation preparation	Sweden	Negotiation	Issues Regarding the Purchasing Unit	1			1
Improve preparation before negotiation	Sweden	Negotiation Skills	Skills Desired	2	1		3
Negotiation skills before, under & after	Sweden	Negotiation Skills	Skills Desired	5	2	1	8
Sale courses (understanding of suppliers in negotiation)	Sweden	Negotiation Skills	Courses Desired	2			2
SILF courses	Sweden	Negotiation Skills	Courses Desired	1			1
Specialist competence in negotiation skills	Sweden	Negotiation Skills	Skills Desired	2			2
Closer collaboration between CE & Purchasing	Sweden	Network & Information sharing	Issues Regarding the Purchasing Unit			1	1

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
Closer collaboration with stakeholders	Sweden	Network & Information sharing	Issues Regarding the Purchasing Unit	2	2		4
Information sharing/communication between departments, sections, and groups	Sweden	Network & Information sharing	Issues Regarding the Purchasing Unit	3	1	1	5
Networking opportunities outside/inside company	Sweden	Network & Information sharing	Issues Regarding the Purchasing Unit	1	1	1	3
Facilitate information/experience sharing Europé/China	China	Network & Information sharing	Issues Regarding the Purchasing Unit	2			2
Information/experience sharing with Europé	China	Network & Information sharing	Issues Regarding the Purchasing Unit	1			1
Introduction for new employees	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	7	2		9
LAD could be improved	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	2	1		3
Negotiation course modularized over several years	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	2	1		3
Purchasing license	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	1			1
Purchasing mini MBA	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	1			1
Purchasing stairs	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	8	1		9
Training plans according to individual needs	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	1	1	1	3
Better supply for seniors	Sweden	Offering Training Packages	Issues Regarding Course Supply and Structure	1			1
Purchasing license	China	Offering Training Packages	Issues Regarding Course Supply and Structure	1			1
Training plans according to individual needs	China	Offering Training Packages	Issues Regarding Course Supply and Structure		1		1
7-step course, education on content in process	Sweden	Process Knowledge	Courses Desired		5		5
Cost in manufacturing <=> Product	Sweden	Process Knowledge	Courses Desired	1			1
Evaluate purchasing process, find gaps to educate within	Sweden	Process Knowledge	Courses Desired	1			1
Technical knowledge	Sweden	Process Knowledge	Courses Desired	1			1
Understanding raw material compensation process	Sweden	Process Knowledge	Courses Desired	1			1
7-step course	China	Process Knowledge	Courses Desired		1		1
Purchasing process adjusted to China & uniform	China	Processes	Issues Regarding the Purchasing Unit		2	1	3
Volvo process skills	China	Processes	Skills Desired	2			2
Product knowledge	Sweden	Product Knowledge	Skills Desired			1	1
Technical knowledge	China	Product Knowledge	Skills Desired	1			1
Project management	Sweden	Project Management	Courses Desired	1	3		4

Opinion Details				Count			
Opinion	Country	Group Name	Group Topic	DP	IDP	CE	TOTAL
Mandate for buyers	Sweden	Purchasing roles	Issues Regarding the Purchasing Unit	1	1		2
Purchasing involved earlier in PD process	Sweden	Purchasing roles	Issues Regarding the Purchasing Unit		1		1
Role distinguishment	Sweden	Purchasing roles	Issues Regarding the Purchasing Unit	1	1		2
Role distinguishment	China	Purchasing roles	Issues Regarding the Purchasing Unit	1			1
Reflection before and after courses	Sweden	Reflection	Issues Regarding Context and Content of Trainings	9	4	3	16
Follow up & reflection guidelines	China	Reflection	Issues Regarding Context and Content of Trainings	2	1		3
Become more strategi	Sweden	Strategic Competence	Skills Desired		1		1
Strategic thinking for managers	Sweden	Strategic Competence	Skills Desired	2	1		3
Strategic skill/competence	China	Strategic Competence	Skills Desired		1		1
Analysis of suppliers	Sweden	Supplier Understanding	Skills Desired	1	2		3
Generic course in supplier analysis	Sweden	Supplier Understanding	Courses Desired	1			1
Understand supplier relationship dynamics	Sweden	Supplier Understanding	Skills Desired	1		1	2
Vendor management skills	Sweden	Supplier Understanding	Skills Desired		1		1
Skill: Tools to optimize costs (e.g. Fact-based negotiation)	Sweden	Tools to Optimize Costs	Skills Desired	1			1
Need better supply for group managers	Sweden	Training Supply for Managers	Issues Regarding Course Supply and Structure	3	1		4
Senior continuous updates (purchasing, leadership)	Sweden	Training Supply for Managers	Skills Desired	1			1
Stairs for all managers	Sweden	Training Supply for Managers	Issues Regarding Course Supply and Structure	7	2		9
Time for training limited	China	Training time	Issues Regarding the Purchasing Unit		1		1
Time planning for trainings need to be improved	China	Training time	Issues Regarding the Purchasing Unit	1			1
Lunch seminars good	Sweden	Type of Training Activities	Issues Regarding Context and Content of Trainings	2			2
Mix of training activities (e.g. Case, role play and lecture)	Sweden	Type of Training Activities	Issues Regarding Context and Content of Trainings	2	1	1	4
Supplier visits	Sweden	Type of Training Activities	Issues Regarding Context and Content of Trainings	1	1		2
Mix of training activities	China	Type of Training Activities	Issues Regarding Context and Content of Trainings	1			1
Supplier visits	China	Type of Training Activities	Issues Regarding Context and Content of Trainings	1			1

Appendix 5: KJ-Method Sticky Note Grouping



PL. UNDERST.

STANDARD SUPPLY DYNAMICS
IDP CE
IT MANAGEMENT
IDP CE
SYSTEMS OF JOURNALING
IDP CE
CASES IN ANALYSIS
IDP CE

PRODUCT

PRODUCT KNOWLEDGE
IDP CE
TECHNICAL KNOWLEDGE
IDP CE
IN MANUFACTURING PRODUCT
IDP CE

POWER ACQUISITION
IDP CE

FOR ID TO BE

TRAINING

TRAINING

TRAINING

IT

BETTER PROCUREMENT SYSTEM
DM III
IDP II
DATABASE OVER EXISTING & POTENTIAL SUPPLIERS
DM I
IDP
CE

COURSE TRACKS

NEGOTIATION COURSE MODULARIZED OVER SEVERAL YEARS
DM II
IDP I
INTRODUCTION FOR NEW EMPLOYEES
DM III II
IDP II
CE

PURCHASING LICENSE

DM I
IDP

PURCHASING STAIRS

DM III III
IDP I
TRAINING PLANS ACCORDING 2 INDIVIDUAL NEEDS
DM I
IDP I
CE I
LAD AR INTE ⁱⁿ _{CPA} *

DM II
IDP I
STAIRS FOR ALL MANAGERS *
DM III II
IDP II
CE

KPI & GOALS

RELEVANT KPI MEASUREMENT
DM CE I
LONGY GOALS & GOALS BREAKDOWN
DM II
KPI COHERENCE BETWEEN CE & PURCHASING
DM
CE II

EXTERNAL INFLUENCES

RECRUITMENT OF EXTERNAL MANAGERS/EMPLOYEES
DM I
IDP I
EXTERNAL INFLUENCES FROM OTHER FIRMS
DM III
IDP
CE I

CONTINUITY

UPDATE OF COURSES
DM I
CONTINUITY OF COURSES
DM III I
IDP
CE I

MANAGER/SENIOR COURSE SUPPLY

BETTER SUPPLY FOR GM
NEED BETTER
DM II
IDP I
CE

PURCH. ROLES

PURCHASING INVOLVED EARLIER IN PD PROCESS
DM
IDP I
MANDATE FOR BUYERS
DM I
IDP I
~~LESS OPERATIONAL WORK~~
ROLE DISTINGUISHMENT
DM & I
IDP I

LEADERSHIP

GUIDELINES FOR LEADERSHIP & DEVELOPMENT
DM I
INVEST IN POTENTIAL LEADERSHIP TALENTS
DM I
IDP
CE
MORE FOLLOW-UP & COACHING ^{FROM PA} FROM

NETWORK & INFO SH.

UNLEARN CLOSER COLLAB. W. STAKEHOLDERS
DM II
IDP II
CLOSER COLLABORATION BETWEEN CE & PURCH.
DM
IDP
CE I
NETWORKING OPPORTUNITIES OUT/INSIDE COMPANY
IDP I
CE I
EMPLOYEE ROTATION IN VOLVO/W CHINA
DM III
IDP
CE I
INFORMATION SHARING ^{GROUP} BETWEEN DEPARTMENTS/SECTORS
DM III
IDP I
CE I

PURCHASING MINI MBA
DM I

DIFFERENTIATION OF MANDATORY COURSES
DM
IDP I
CE