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**DEVELOPING THE SOURCING FUNCTION:
TOWARDS GLOBAL SOURCING**

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Strategic Management

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ABSTRACT

The study relates to the development of the sourcing function from international purchasing towards integrated global sourcing. Global sourcing is examined through the managerial and operational functions that can promote an organization's efforts in pursuing common sourcing and purchasing procedures. The objective is first, to build a conceptual theoretical framework from the existing literature and previous studies for understanding and analyzing the global sourcing operations in multinational corporations. The theoretical findings will then be reflected to the empirical information collected from the case company. Through these findings the current sourcing systems and processes of the case company are modelled, as well as the targeted systems and processes. Development ideas are presented in order to achieve the company's future goal of sourcing operations. Sourcing is presented as an important part of the value chain and supply chain management, which can significantly improve the company's competitive advantage.

Purchasing process and activities are examined from the global sourcing point of view. This study emphasizes the importance of consistent purchasing procedures in pursuing successful global sourcing in the corporate level. The prevailing conditions of purchasing are reflected against the objective state and further development ideas are presented. The supplier selection and negotiations are made by global sourcing committee, as the agreements are corporation wide, long term contracts. The supply chain management is examined in general, so that the link between the whole supply chain and the procurement operations becomes evident. The make or buy decision is considered as an integral part of the sourcing process as well as the supply chain management. Notes about the importance of forecasting and intraorganizational communications are made from both operational and managerial point of view.

KEYWORDS: sourcing, global sourcing, purchasing, supplier, supply chain management

1. INTRODUCTION

Sourcing as a subject in today's organizations is more common than ever. It has been widely realized that the concept of sourcing and purchasing can be a significant factor in a company's efforts to gain competitive advantage. Especially, the concept of global sourcing has received increasing attention in multinational corporations. Due to the globalization of business, companies are increasingly adopting global sourcing strategies to support their global business strategy (Petersen, Prayer & Scannel 2000: 29). An extensive literature relating to sourcing, purchasing and supply chain management is available, and several earlier studies can be found focusing on these issues. The earlier research is mostly concentrated on issues relating to the outsourcing of components or services to be further used in the company's own production. This study makes an exception by examining the sourcing issues from a view in which a finished product is purchased to be sold as such to the end user.

As mentioned, the concept of sourcing usually occurs in situations where a company is outsourcing materials, services or components to be used in producing the finished product. In this research, sourcing is regarded as the procurement of a finished product from a third party supplier, that can be sold straight or via warehouse to the end user, aiming to increase the volumes and profits of the case company.

Definitions of sourcing, buying, purchasing, procurement, and supply management are used interchangeably in the literature and in practice, as there is no general agreement in the definitions of these concepts. Even if these terms and definitions are used interchangeably, the core of all these concepts is the purchasing function. The concept of sourcing in this research refers to the whole process of acquiring items, managing and guiding the purchasing processes and strategies. The purchasing process is something to be considered as the execution of sourcing strategy and decisions. Sourcing is a significant part of the supply chain management.

The sourcing concept in this study is described from a global sourcing perspective, which includes the international purchasing process as an operative function. The global sourcing concept has been widely recognized in multinational corporations due to the continuous globalization of the markets. Sourcing from low-price countries has become more and more common, although these operations rarely exist without any problems and requires a significant amount of resources. Through sourcing, companies aim to increase competitive advantage by improving flexibility, customer service, completing

own production and gaining price advantages. *“As organizations think about the best way to respond to competitive demands, the development of global strategies and approaches, including global sourcing strategies, will become an increasingly attractive option”* (Trent & Monczka 2003: 26).

As the sourcing related terms are interchangeably used in the literature and earlier research, it is important to define the meaning of these concepts in this study. Short definitions of the main concepts used in this study are gathered into table 1.

Table 1. Definition of the key concepts.

Concept	Definition
Global sourcing	Coordination of the purchasing procedures of individual business units globally, so that the purchasing is made from the suppliers that the sourcing committee recommend. Negotiations of annual contracts, development of supplier relations and supplier evaluation. Communicating the mutual goals regarding the products from third party supplier. Gathering the forecasting information from sales units, and compiling it together.
Strategic purchasing	Strategic purchasing works between the sourcing function and the operational purchasing. Strategic purchasing refers to the information about purchasing volumes, specifications e.g. from the business units, and informing them to the global sourcing committee.
Operational purchasing	Purchasing process is executed by the buyers of individual business units. The purchasing of sourced products follows the instructions and coordination of global sourcing strategy and guidelines. The purchasing orders are made on the operational level of purchasing organization. Operational purchasing also involves following the deliveries, every day transactions with the supplier etc.
Supplier	A third party supplier which supplies the sourced products to the case company. The suppliers are selected and evaluated by the global sourcing committee.
Supply chain	Consists from the activities that occur between the supplier and customer. Sourcing and purchasing are a significant part of the supply chain, which have an impact on every other activity of the supply chain.

The definitions in table 1 refer to concepts that are repeatedly used in this study. It is important to note that these are researchers own conceptions, based on findings from sourcing-related literature and earlier research. These concepts are also reworked to correspond better with the purpose and content of this particular research.

This study concentrates on clarifying and modeling the current sourcing and purchasing structures and processes of the case company and reflects them to the intended, ideal structures and processes. As Monczka (2008: 48) has stated: “*A well-defined and rigorously enforced sourcing process is the foundation of integrated global sourcing and one of the most important predictors of success.*” The aim is to develop the case company’s sourcing towards the intended state by presenting different models and suggestions of what should be done in order to achieve the set objectives.

These models and suggestions are partially developed in cooperation with the top management of the case company and then shaped by the researcher and presented to the company’s representatives. This study is conducted in cooperation with a worldwide manufacturing company, operating globally in its industry. In addition to its own production, significant volumes of complementary products are sourced from outside the company. The background of the case company is presented in chapter 6.1.

1.1 Objectives and limitations of the study

This study is executed on assignment by the case company, an industrial manufacturing company, which operates globally in its industry. The purpose of this thesis is to develop the case company’s sourcing function by concentrating on the following questions: “*What are the current purchasing structures and processes? How can these processes be developed in order to achieve the intended state of sourcing?*” The presumption for the research problem is that the case company has a mixed field of diverse purchasing procedures, depending on the country where a business unit operates. Modeling the main sourcing and purchasing processes gives an idea of what are the biggest problems of these kinds of procedures. After modeling the current processes, the intended structures and processes are modeled. The purpose of modeling intended state is to reveal a gap between the prevailing conditions and the intended state of sourcing. For this gap, this study will present developing ideas and suggestions to the case company.

This study emphasizes the sourcing function and processes through which the coordination and decisions concerning the purchasing procedures and supplier selection are made. The study is limited to cover only one product category, though keeping in mind the comprehensive analysis of sourcing, so that the results of this study can be extended case-specifically to any other finished product group as well. The nature and processes between sourcing components etc. and finished products are very similar, thus the same definitions can be used in both cases. Some rework is needed when using outsourcing literature, mainly concentrated on components and services, on issues relating to sourcing of finished products.

The empirical material is based on conversations and meetings held with the top management of the case company. The limitations of this study arise from the fact that it is based on empirical data collected from one company only. As the company has one individual problem to be solved, no generalization can be made on the basis of the results received. This study will propose a solution on this specific problem, which will then be used in developing the operations of the case company.

The contribution of this study relates to the fact that a limited number of earlier research has been made on an item that is sourced as a finished product to complete the company's own production. The supply chain and the sourcing process of finished products have some differences compared to the outsourcing of components or materials to be used in manufacturing a product.

1.2 Background to the research subject

Some of the main reference research related to the sourcing and purchasing issues is compiled into table 2. The review of the prior studies made in this table provides an insight into the different aspects of earlier global sourcing research. These studies are used in this research to build a comprehensive theoretical review about sourcing and purchasing related issues. Most of the earlier studies are about outsourcing a component or a service, rather than a finished product ready to be sold. As this study includes both theoretical and empirical implications, the type of studies taken into account in this study are both conceptual and survey studies.

Table 2. Main reference studies relating to sourcing and purchasing.

Author and year	Type of study	Main focus of the study
Anderson & Katz 1998	Conceptual	Development and tools in strategic sourcing. Evaluating the impact of sourcing to business operations.
Carter & Narasimhan 1996	Case study	Finding a link between purchasing and corporate performance.
Dumond, Ellen J. 1991	Survey (240)	Measuring the performance and decision making in purchasing environment.
Ellram 1993	Survey (103)	Issues relating to Total Cost of Ownership (TCO).
Ellram & Pearson 1993	Survey (210)	Purchasing personnel in decision making. Purchasing as a member of team in decision making.
Kraljic 1983	Conceptual	How to recognize the supply weakness and treat it with a comprehensive strategy. Categorizing the products.
Spekman, Kamauff & Myhr 1998	Survey (161)	Supply chain management.
Trent 1996	Conceptual	Cross-functional sourcing teams and the team leadership.
Trent & Monczka 2005	Survey (162)	Success factors in global sourcing.

As can be seen from the table, there are several variables relating to sourcing and purchasing issues. However, successful global sourcing operations require a comprehensive understanding of these different aspects. One of the most used researches is made by Kraljic (1983), which relates to the categorization of supplied products and suppliers. Another highly relevant study about global sourcing issues is made by Trent & Monczka (2005), which compiles the success factors of global sourcing together. These factors are based on 162 responses received from several different companies. The studies compiled in table 2 represent the different phases of sourcing operations, from coordinated sourcing to operational purchasing activities. These operations are linked to the supply chain, which presents the whole supply to delivery process.

1.3 Structure of the study

This study is divided into five sections: **introduction and objectives, theoretical literature review, the research methods, empirical results, and conclusions.**

Chapter one is an **introduction chapter**. It constitutes the goals and objectives of the study, and a general introduction to the concept of sourcing. The purpose of the study is clarified by defining the research problem.

The theoretical literature review presents the key aspects of the research subject from the literature and earlier research relating to the subject of this research. The purpose of this section is to illustrate the function of sourcing, global sourcing, purchasing process and supplier selection. This section is divided into three parts: first, it covers the concept of sourcing and global sourcing, second, it concentrates on the purchasing processes within global sourcing, and third, the supplier selection, evaluation and supply chain management is presented.

The research methods include the issues relating to the study implementation process. Furthermore, the nature of the study is presented and the method of analysis is introduced. The empirical material has been gathered through observations and notes made in meetings and conversations with the top management of the case company.

The empirical research results introduce the analysis process and the results of the empirical study. It also introduces the case company, and the background of the reasons to start the sourcing function in the case company.

Conclusions summarize the results of the study and compare the results to the literature review made in the beginning of the research. Suggestions for further studies and general comments on the issues of the study are made.

2. SOURCING

In this research sourcing is studied from the global sourcing view, keeping in mind that the international purchasing exists as an operational part of the global sourcing process. Although some of the literature uses the terms international purchasing and global sourcing interchangeably, there are differences between them. International purchasing involves a commercial transaction between buyer and supplier located in different countries. Global sourcing, on the other hand, involves integrating and coordinating common items, materials, processes, technologies, designs and suppliers across worldwide buying, design and operating locations. (Trent & Monczka 2005: 24.) Overall, global sourcing is a guiding function of purchasing activities in multinational corporations. This definition brings the sourcing function closer to the management level, and keeps the purchasing process as a more operational function.

When an organization is purchasing products or materials from one or more external suppliers, aiming to significantly improve the business performance of the organization, it is called strategic sourcing. Strategic sourcing is something that might sound simple; however, successful strategic sourcing is an in-depth and difficult process to execute. Only if the management is willing to approve a new perspective on management control, it is possible that strategic sourcing becomes effective. (Gay 2000: 27.) Sourcing should be recognized as an integrated function of the organization, which can significantly improve the competitive advantage of the company.

2.1 Scope of sourcing activities

Leinonen (1999: 34) has compiled a table from several literature sources that bring together the main sourcing activities (table 3).

Table 3. Scope of sourcing activities (Leinonen 1999: 34).

-
- **Information and purchasing research activities**
 - Supply market research
 - Price and availability forecasting
 - Value, price and cost analysis
 - Make or buy analysis
 - Material studies
 - New technology studying
 - Supplier audits and qualifications
 - Maintenance of purchasing records

 - **Sourcing management activities**
 - Development of objectives, strategies, policies and control and coordination mechanisms
 - Budgeting
 - Supply base strategies
 - Supplier development and early supplier involvement
 - Consolidation
 - Negotiation of long term and company-wide contracts
 - Management of unique supplier or material problems
 - Material specifications and standardization
 - Development of operating and information systems
 - Process, skill and competence development

 - **Operative sourcing activities**
 - Material buying process
 - Order administration and expediting
 - Supplier performance monitoring
 - Daily communications with suppliers
 - Communication and cooperation with users
 - (Materials management activities)

 - **Sourcing control activities**
 - Measurement of purchasing performance
 - Total cost analysis
-

Sourcing activities according to Leinonen's study (1999) are divided to four different areas, *information and purchasing research activities*, *sourcing management activities*, *operative sourcing activities* and *sourcing control activities*. The global sourcing and

purchasing function in this study is related to the activities presented in this table. Most of the sourcing activities presented in table 1 are closely related to each other, and thus successfully operated individual action can have a positive influence on another activity. Successful global sourcing needs detailed and well managed processes thorough the corporation. Through integration and coordination, the activities of sourcing can be standardized, which will enable the measurement and monitoring of the processes and results of global sourcing.

2.2 Sourcing strategy

Creating a well planned, comprehensive sourcing strategy will enable an effective and profitable business through the purchased items. The best result is reached, when the sourcing strategy is closely linked to the company's business strategy. At its best, sourcing strategy means a comprehensive understanding of suppliers, markets and competitive situation. (Laseter 1998: 7–10.) The greatest benefit of global sourcing derives from the cost savings. Cost savings arise from the aggregation of the worldwide purchase volumes, the active searches for the best-in-class suppliers, the coordination of resources and the consolidation of multiple regional agreements into single agreements. (Trent & Monczka 2002: 70.) Strategic sourcing is a key component of supply chain management, which continuously evaluates the purchasing activities and aims to improve them.

Laseter (1998: 60) has formed a seven step list for creating an effective sourcing strategy. The steps should be carefully examined, and the strongest emphasis placed on the objectives where a lack of knowledge exists. These steps are discussed in the following chapters.

(1.) *View supply- base rationalization as a result, no the objective.* This first step is to evaluate the supply-base, in order to decide whether the base is too large or not. Reduction should not be an automatic operation, although it might bring some short-term advantages in costs. After the rationalization, the supply-base needs to be adequate to situations, where the lack of production from one supplier needs to be compensated by another. (Laseter 1998: 60.) The outcome is that operating with only one supplier might not be the best way in ensuring the constant flow of incoming materials.

- (2.) *Use multifunctional teams.* Using multifunctional teams in creating a sourcing strategy will give a wider diversity of opinions. When using multifunctional teams, the implementation of sourcing strategy will become easier, as there are various different parts of the organization involved in the planning process. Sourcing is something that should be considered as an organizational capability, not a purchasing task, and this is the biggest supportive factor for the using of multifunctional teams. (Laseter 1998: 61.)
- (3.) *Coordinate across regions and business units where necessary.* In the third step the necessity of coordination across regions and business units should be considered. What is the right amount of units, people and regions, that should taken into the process of creating the sourcing strategy? Coordinating the tasks will be easier when there are less units and people in the process, but on the other hand, the bigger the number of units and people, the wider is the range of ideas and suggestions. (Laseter 1998: 62–63.)
- (4.) *Conduct rigorous global research.* The fourth step is to conduct rigorous global research in order to find new, more efficient suppliers globally. With help of these researches, it is possible to discover new, advantaged suppliers that have not been previously known to exist. These researches should include multiple interviews and careful observation, so that the key practices of every supplier can be defined. (Laseter 1998: 63–64.) Supplier selection process is taken into closer examination in chapter four.
- (5.) *Examine total cost of ownership.* Step five is to examine the total cost of ownership (TCO). This means a thorough examination of the costs of each supplier. Although some short-term price reduction might exist by some suppliers, the cheapest option is not always the best option. Examination of the total costs takes also into account the incremental costs, such as shipping, duties and inventory-carrying costs. After all these costs, it is possible that the company have not achieved any savings by using the supplier who gives the lowest price level for the product itself. (Laseter 1998: 65.) A more comprehensive view of Total Cost of Ownership is made in chapter 3.3.5.
- (6.) *Segment the spend for focus and to break compromises.* In phase six the key drivers are recognized and compromises are broken through the segmentation of supplier roles and items that are purchased. This stage helps the decision maker in choosing

the right suppliers for the right items. For example a product that has a predictable demand in the markets, can be purchased from a low-cost supplier. On the other hand, a product with high risk should be purchased from more liable supplier, even if the costs are higher. (Laseter 1998: 67.)

(7.) *Quantify the benefits.* The last step is to quantify the benefits that different suppliers have to offer. It is necessary to quantify all costs and benefits, so that they can be compared to the value of action by the supplier. If the costs are higher than the value of the action, it should be seriously considered whether to pay from it or not. The decision making will become easier through quantification of qualitative values. This gives an opportunity to base the decision on comparison between the qualitative value and the quantification of costs. The common situation is for example the high quality service that the supplier is offering. The decision should be made on the basis of the costs of the quality, does the additional value really compensate with the money spend. (Laseter 1998: 67.)

In the same way as business strategy, sourcing strategy has its own goals and objectives, as well as principle and policies in order to achieve the objectives. Sourcing strategy as a part of the business strategy is modified according to the goals and objectives of business strategy. It should be recognized as an integrated function that can positively influence to the results of the business strategy.

2.3 Global sourcing

International sourcing, multinational sourcing, and foreign sourcing have long been used under the same meaning. Although, there are distinctive factors recognized between these concepts, and strategic global sourcing. International, multinational and foreign sourcing can be defined as buying outside the firm's country in a way that does not coordinate the requirements among worldwide business units of the company. Strategic global sourcing refers to the integration and coordination of procurement requirements across worldwide business units, looking at common items, processes, technologies and suppliers. (Birou & Fawcett 1993: 29.)

Kotabe (1992: 6) defines global sourcing strategy as: "*Management of the interfaces among R&D, manufacturing and marketing on a global basis and of logistics identifying which production units will serve which particular markets and how*

components will be supplied for production, such that the firm can exploit both its own competitive advantages and the advantages of various countries.”

The development from domestic purchasing to global sourcing is presented in figure 1:

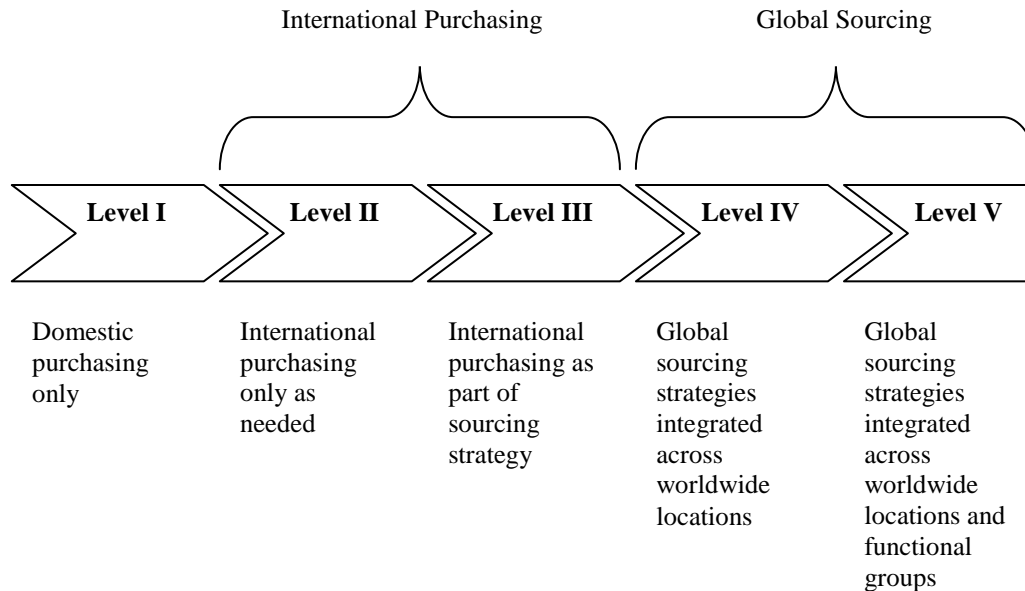


Figure 1. Five levels of sourcing (Trent & Monczka 2005: 28).

Companies pursuing towards global sourcing must contend with the operational issues that affect the purchasing activities while also managing a higher level of cross-functional and cross-locational coordination. When operating on the level five of global sourcing, integration and coordination occur not only among worldwide buying locations, but also across functional groups, including operations, marketing and engineering. This integration also includes the coordination of purchasing activities. In addition to developing global agreements or contracts, companies that pursue to global sourcing also work to standardize their supply chain management processes and practices worldwide. (Trent & Monczka 2005: 26.)

The main competitive advantage achieved through global sourcing, is the reduction of costs. As the contracts are negotiated for bigger, annual contracts by the company's purchasing professionals, this gives an edge to the negotiations for the buyer. Longer and bigger contracts are beneficial not only from the buyer's view, but also to the supplier, who is assured that a certain capacity from its production is sold for the

coming months or even a year. It is more than likely that this kind of settlement will also generate some improvements in payment and delivery terms from the purchasing point of view. Overall, global sourcing will create stability and long-term buyer-supplier relationships.

Trent and Monczka (2005: 27–32) have identified seven key factors based on their research, which can be found from the leading global sourcing organizations. These factors will help the executives to understand what an effective global organization looks like, and compare their progress and processes against the best practices of global sourcing. These factors are presented in table 4.

Table 4. Characteristics of Global Sourcing Excellence (Trent & Monczka 2005: 30).

-
1. *Executive Commitment to Global Sourcing*
 2. *Rigorous and Well- Defined Processes*
 3. *Availability of Needed Resources*
 4. *Integration Through Information Technology*
 5. *Supportive Organizational Design*
 6. *Structured Approaches to Communication*
 7. *Methodologies for Measuring Savings*
-

Executive commitment to global sourcing refers to multiple different management tasks and levels in organization. It is important that the cross functional leaders participate on a global sourcing steering or committee. Designated executives need to have the authority to translate a global vision into reality. Executive leaders should work to gain support for global agreements and processes from cross-functional groups and buying locations. The global sourcing leaders make strategy presentations to the executive committee and to the board of directors, and also report periodically from the progress achieved. Executive leaders have the responsibility in recruiting qualified participants to join global sourcing project teams. (Trent & Monczka 2005: 30.)

Rigorous and well-defined processes correctly adhered to, are the global sourcing best practices. A well-defined process is in a place that requires the participants to establish goals, meet milestones and report from the progress to the executives. With contribution

and help by the participants, executive leader or steering committee reviews and proposes process improvements. At the end of each project, “lessons learned” sessions are conducted and the results are distributed to the worldwide participants. (Trent & Monczka 2005: 30.)

Availability of Needed Resources has the potential to separate marginally performing from exceptionally performing global-sourcing organizations. Executives should make critical resources, such as budgets and qualified participants, available to support global initiatives. The process involves individuals who have the ability to take global sourcing perspective, rather than a local or regional perspective. The relevant information should be made accessible to project teams and participants. (Trent & Monczka 2005: 28, 30.)

Integration through information technology refers to creating data warehouses, which provide the access to required data and information on a real-time basis. For example a companywide intranet, that makes the global sourcing support documents, guidelines, templates and progress updates cross-functionally available. There should also be contract repositories, which include the global agreements, and provide warning of expiring contracts. (Trent & Monczka 2005: 30.)

Supportive organizational design is the process of assessing and selecting the best possible structure that is required to achieve an organization’s goals. A formal executive steering committee or council oversees the global sourcing process, which also includes the identification of global sourcing opportunities. Detailed analysis of global opportunities and the development of sourcing agreements are on the responsibility of cross-functional sourcing teams. Organizational design includes the separation of strategic activities, such as global sourcing and operational activities, e.g. placing a routine purchasing order. It is ensured, that the international purchasing offices are supporting the global sourcing requirements. (Trent & Monczka 2005: 30.)

Structured Approaches to Communication is critical factor to worldwide sourcing success, as the participants in global sourcing initiatives are often located around the world. Project teams should meet regularly to coordinate efforts. These sessions are to ensure the understanding of global initiatives and buy-in for them. Project teams also report to the executive leaders from the progress achieved, and the necessary information is posted to the company intranet. Advanced tools of communicating and coordinating, such as Web- based collaboration tools, should be made available. (Trent & Monczka 2005: 30.)

Methodologies for Measuring Savings from the global activities and reporting them to the executive and site-base manager is one of the hardest, but also an essential process of successful global sourcing. Finance representatives should agree on the methods of validating savings from the global initiatives, and the global sourcing participants should meet regularly with executive leaders to review the savings from existing agreements and expected savings from in-process activities. Measurement systems support the calculation of companywide savings realized and expected to be realized from global agreements. Systems also support the impact that sourcing initiatives have on the corporate financial measurement, e.g. return on assets. (Trent & Monczka 2005: 30.)

2.4 Porter's value chain model

Value chain (figure 2) presents all the activities that an organization has to design, produce, market, deliver and support its product. Every activity in the value chain has its own impact on the margin at the end of the value chain. The key source of organization's competitive advantage is arising from the different value chain compared to competitors. The generic value chain consists from two level of activities; *supporting activities* and *primary activities*. (Porter 1985: 36.)

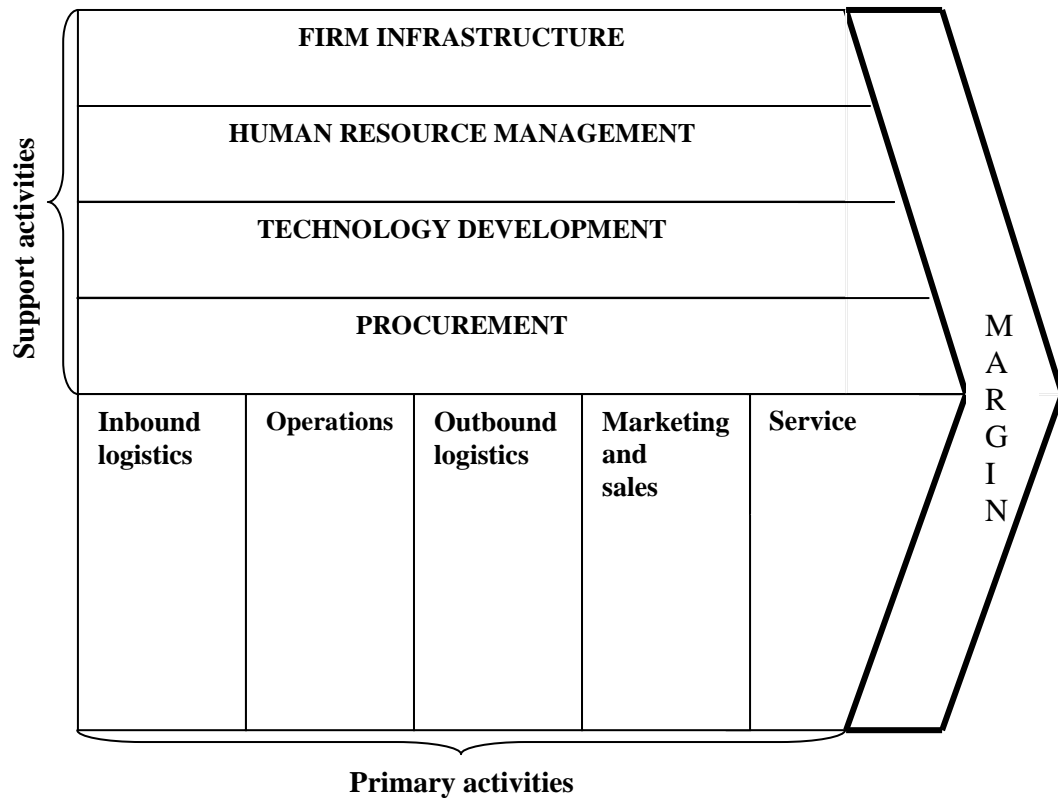


Figure 2. The Generic Value Chain (Porter 1985: 37).

In *primary activities* there are five categories:

- *Inbound Logistics*; Concentrates on activities such as receiving, storing, and disseminating inputs to the product. These include material handling, warehousing, inventory control, vehicle scheduling and returns to supplier.
- *Operations*; Transforming the inputs into the final product form.
- *Outbound Logistics*; Collecting, storing and distributing the product to buyers.
- *Marketing and sales*; Includes advertising, promotion, sales force, quoting, channel selection, channel relations, and pricing.
- *Service*; Providing service to enhance or maintain the value of the product.

In *supporting activities* there are four categories:

- *Procurement*; The procurement activity refers to the function of purchasing items that are used in the organization's value chain. Procurement activities tend

to spread throughout the organization, and they have a significant impact on the firm's overall cost and differentiation.

- *Technology development*; Consists from different activities which are aiming to improve the product and the process. Technology development occurs in every part of the value chain, whether it is linked to the end product, or to primary and support activities.
- *Human Resource Management*; Includes activities involved in recruiting, hiring, training, development, and compensation of all types of personnel. Human resource management can be found in every part of the organization, which can lead to inconsistent policies. Human resource management is a significant factor in building organization's competitive advantage.
- *Firm Infrastructure*; Supports the entire value chain instead of individual activities. Consisting activities such as general management, planning, finance, accounting, legal, government affairs, and quality management.

Sourcing in Porter's value chain model is a supportive activity; *procurement*. Properly organized, procurement activities can significantly add value to the end-user, and increase the margin at the end of the value chain. The purchased products are present in every value activity including support activities. Procurement includes actions, besides the actual purchasing process, such as dealing with vendors, procedures for qualification rules and information systems. Even if the procurement activities themselves represent an insignificant share of total costs, they often have a large impact on the firm's overall costs and differentiation. This is the reason why companies are nowadays putting a significant effort on improving their sourcing and purchasing activities. Improved practices in purchasing can strongly affect the costs and quality of purchased inputs. Through these affects, procurement will also improve the other activities relating to the receiving and using of purchased items. (Porter 1985: 41.) The procurement function should also be able in meeting the requirements related to inbound and outbound logistics, as well as the operations (van Weele 2005: 11).

Firm infrastructure as a supportive activity usually concerns the entire chain. As a successful procurement function is highly dependable from such firm infrastructural factors as planning, finance and quality management, the effect of firm's infrastructure should be taken into account when developing the procurement and sourcing functions. Firm's infrastructure is one of the key elements in enabling and setting the financial limits to procurement function.

Procurement is also in a close relationship with the inbound logistics, which includes the primary activities of material handling, warehousing, inventory control, vehicle scheduling and returns to supplier. The cooperation between sales and marketing improves the customer service, and on the other hand, makes the purchasing and sales actions more efficient. The importance and meaning of the cooperation between purchasing and sales is more comprehensively viewed in later chapters.

2.4.1 Sourcing value chain

Sourcing value chain is the set of processes, through which the sourcing decisions are made and value is created for the organization. Sourcing value chain includes the activities of creating annual plan, developing requirements, developing sourcing strategy, evaluating and selecting suppliers, procuring materials, and managing supplier relationships. Value analysis is becoming an increasingly important approach to ensuring that specifications exactly meet the business need. (Anderson & Katz 1998: 7–8.)

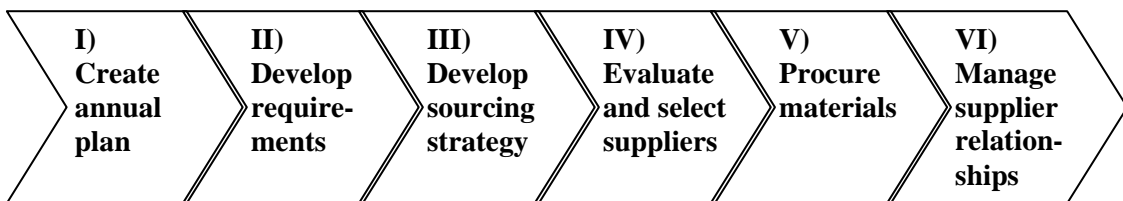


Figure 3. Sourcing value chain (Anderson & Katz 1998: 7).

I) Create Annual Plan; Relates to setting goals and objectives for purchasing activities. Planning should include key targets such as cost savings, or acquirement of new suppliers. Tying up the personnel to the goals and objectives is critical

II) Develop Requirements; Specifications for products needed is a critical element of the sourcing value chain. Forecasting the demand and need for oncoming year is essential, in order to provide the volume requirements to the supplier. This will ensure the incoming flow of materials as wanted and improve the supplier delivery performance.

III) Develop Sourcing Strategy; The sourcing strategy should answer to the question of how to buy. It's strongly confined to the development of requirement, which will

have a big impact on the aspects of sourcing strategy. The process of developing sourcing strategy is described in chapter 2.2.

IV) Evaluate and Select Suppliers; Supplier evaluation and selecting process is discussed in chapter 4.

V) Procure Materials; This step is the execution of actual purchasing process. Purchasing process and actions will be discussed in chapter 3.

VI) Manage Supplier Relationships; Strategic sourcing should lead the company to view supplier relationships as assets, not just sources of low-cost materials. Supplier should be considered as an asset that can complement the core competencies of the company, and produce competitive advantage in the markets.

(Anderson & Katz 1998: 7–9.)

Before implementing the activities of sourcing value chain, it is the management's responsibility to define the roles and functions of each department and personnel involved in purchasing and sourcing. Some of the sourcing actions can be conducted in the operational level of the organization and on the other hand, there are actions which need to be operated by the management level. Developing linkages to communicate effectively with suppliers, sales, marketing and production, and support systems that enable sourcing decisions are prerequisites in fully exploiting value-added procurement (Anderson & Katz 1998: 11).

2.5 Cross- functional sourcing team

There are several cases where cross- functional teams can prove to be an efficient and most productive way in problem solving and decision making. Using teams in organizations is a quite popular method, although in sourcing and purchasing it has not yet achieved the same status as it has in other operations and projects in companies'. Leenders, Fearon, Flynn and Johnson (2002: 63) have listed five general reasons in using cross- functional sourcing teams:

1. To achieve time-reduction targets
2. To get cross-boundary ownership of tasks and problems
3. Promote innovation and synergy
4. Improve organizational goal achievement
5. To promote professional development of team members

(Leenders et al. 2002: 63.)

Using cross-functional sourcing teams is becoming more and more general among companies. The goal is to achieve better cross-functional and cross-company communication, coordination and collaboration. Through cross-functional sourcing teams, companies are trying to develop leading-edge sourcing strategies and practices. When these teams succeed in working efficiently, it can bring together the knowledge and resources required for new sourcing demands. This is an aspect that a normal, traditional structure is often incapable of achieving. (Trent 1996: 29.)

When creating cross-functional sourcing teams, personnel from at least three different functions should be involved in the assignment. Cross-functional sourcing teams should include the availability of key organizational resources, participation and involvement of selected suppliers when needed, high level of decision-making authority, powerful team leadership, and demanding team assignments. An important way to promote the efforts of cross-functional sourcing team is to design the assignments so that the member participation is encouraged. This means that the team's assignment should (1) require members to use a variety of higher level skills, (2) is meaningful with visible performance outcomes, (3) provides the team with autonomy and ownership, and (4) has significant positive consequences on others within the organization. (Trent & Monczka 1994: 3–4.)

Significant value should be on leading the cross-functional sourcing team. There is a strong relationship between effective leadership and sourcing team performance. A positive influence on team's effort, cohesion, goal selection and goal attainment can be achieved through effective team leadership. This highlights the importance in selecting the qualified individuals for leadership.

Anderson and Katz (1998: 9) emphasize that the team approach in defining the sourcing strategy works effectively in many cases. Using cross-functional teams in creating the sourcing strategy will ensure the consensus and support as an on-going process. It should be understood that using the cross-functional team will bring aspects from many different parts of the company, thus the more external interest groups are taken into account in decision making.

3. PURCHASING PROCESS

The purchasing process is the operative function of sourcing, which includes the required activities in pursuing towards the goals and objectives of sourcing strategy. It should be an integral part of the sourcing function, and have sufficient resources and information to successfully operate towards the planned goals. International purchasing offices are one of the key elements in supporting the global sourcing requirements. Purchasing process and operations are examined in this chapter aiming to create an understanding about the successful execution of global sourcing objectives.

Company's purchasing process consists from many different phases from perceiving the need to the receiving, storing and using the product. As the purchasing function can be one of the biggest expenses in a company, all the decision and choices relating to it, should be thoroughly considered. The basic purchasing process can be divided into four different phases; *recognition of need, description of the need, selection of sources, price determination, placing the order, follow-up of the order, verifying invoices, and maintenance of records.* (Zenz 1981: 9–13.)

3.1 Purchasing operations

There are four basic functions for purchasing; *acquiring the right quantity of the right items, at the right time and at the right price.* These basic functions of purchasing are the core of purchasing strategy, and they also are consistent with the other corporate strategies. As the main role of purchasing is to support the organization's own production and assuring the constant flow of materials, purchasing operations have to be able to support the corporate level competitive strategy. Purchasing operations must support organization's own production, therefore, a link between organization's manufacturing strategy and purchasing strategy must exist. (Watts, Kim & Hahn 1995: 5–7.)

Van Weele (2005: 12) classifies the four basic functions listed above as operational activities, and defines the concept of purchasing 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.*”

According to van Weele's (2005: 12–13) definition of the purchasing concept, a list from purchasing activities is presented as:

- Determining the quality and volume of needed items.
- Evaluating and selecting the best possible supplier for the required items.
- Preparing to negotiations with the supplier, in order to establish an agreement and to write up the contract.
- Giving an order to the supplier, and developing efficient purchase order/handling systems.
- Monitoring the situation of purchase order to secure the delivery.
- Follow up and evaluation of the purchasing process (handling claims, updating the product/ supplier files, rating and ranking the supplier).

There is a one important factor to be added to the van Weele's (2005) definition of the purchasing concept; forecasting. Estimations about the quantity of each product that needs to be purchased are made by forecasting the demand and recognizing the peak seasons of each product. High quality forecasting will improve the level of service to end users, and it will also shorten the cycle-time of products from the warehouse. (Gattorna & Walters 1996: 133–134.) Forecasting and analyzing the consumption of products will be studied later in this research.

The objectives of purchasing activities have been listed by Bailey, Farmer, Jessop & Jones (1994: 17):

1. (a) To ensure a steady flow of materials and services needed by the organization
(b) To maintain effective relationships with current suppliers, and finding optional sources when needed
2. Efficient and wise buying, value of the product should meet the value of money spent
3. Controlling the stock so that the best possible service can be provided to end users
4. Sharing information with other departments and advising when necessary in order to keep up the efficiency of activities
5. Developing staff, policies, procedures and organization, so that the above mentioned objectives can be achieved

A particularly important role for personnel responsible from the purchasing actions is in the supplier selection process. This means a higher level of involvement in the company's decision-making, and also an open information flow about the strategies and

other key issues to the personnel in purchasing operations. (Ellram & Pearson 1993: 3–4.)

3.1.1 Strategic purchasing

Carr and Smeltzer (1997: 199–207) have defined the strategic purchasing as “*The process of planning, implementing, evaluating, and controlling strategic and operating purchasing decisions for directing all activities of the purchasing function toward opportunities consistent with the firm’s capabilities to achieve its long- term goals.*”

The strategic purchasing is an integral part of the global sourcing process. Strategic purchasing operates in the middle of global sourcing and operational purchasing, and its function is to direct the purchasing operations towards the goals and objectives set by the global sourcing strategy. Strategic purchasing is close to the every day purchasing actions and involves in the information gathering and sharing to both ways of the organization.

Strategic purchasing is concerned with the entire process of supply management, and its relation and interaction with other functional areas of the organization. Strategic purchasing concentrates also to external relations with suppliers and the needs and wants of the end customer. The concept of strategic purchasing is closely linked to strategic sourcing, and they are often used interchangeably in the literature and in action. (Leenders et al. 2002: 16–17.)The main difference between strategic purchasing and strategic sourcing is, that the strategic sourcing decisions are made in the top management level.

Strategic purchasing also emphasizes the cross-functional problem solving, in issues relating for example to reducing total system costs, and not just the unit costs of purchased items. Cross-functional teams usually include also key suppliers to the problem solving. Involving the key suppliers into problem solving will develop the relationship of buyer and supplier closer to strategic partnership. (Lysons 1996: 44)

3.1.2 Operational purchasing

Operational purchasing is related to the transactional, day-to-day operations associated with purchasing. The operational purchasing is usually organized so that many of the transactions become routine and partly automated. This will intensify the actions, and

free up some extra time to the purchasing manager to concentrate on the issues relating to strategic purchasing. (Leenders et al. 2002: 11.)

Operational purchasing includes activities such as:

- Expediting
- Records and systems maintenance
- Invoice clearance
- Requisition handling
- Enquiries
- Price determination
- Returns/ reclamation handling

(Bailey et al. 1994: 19.)

As it was presented in Leinonen's classification (table 1), the operational sourcing activities include several transactional activities. Material buying process is one of the routine and basic process of operational purchasing. Buying process should be efficient and it is important that the order placing process is kept as simple as possible. Order administration is one of the key actions in operational purchasing, as the right time delivery is especially important to the marketing and sales department, and most importantly to the end-user of the product. Based on the on-time delivery and quality of the received products, operational buyer will make one's own evaluation of the supplier performance, report it forward and make notes to the records. Daily communications with suppliers involve price enquiries, stages of the incoming deliveries and other daily matters. Communication and cooperation with users is the exchange of information with own manufacturing, sales and marketing related to the purchased products. Materials management belongs partially to the operational purchasing function, as the purchasing activities have a major influence on the incoming volumes of products. Materials management is covered more comprehensively in the following chapters of this study.

3.1.3 Materials management

The basic function of materials management are anticipating material requirements, sourcing and obtaining materials, introducing materials into the organization and monitoring the status of materials as current asset. All these functions are closely linked to the activities and process of purchasing. It means managing the contract after it is signed and directing the materials from the supplier into the warehouse. It also relates to the tracking of the deliveries and possible quality comments arising after the receiving

of products. This means a regular communication with suppliers concerning requirements, such as order quantities and delivery dates. (van Weele 2005: 7, 52.)

As the extent of purchasing's responsibilities are defined as a large scale of different activities, it also includes some factors from materials management. Purchasing is responsibly through its own actions from the ordering quantities, which also means that purchasing personnel has a responsibility of the inventory level controlling. Planning and defining budgets by management will give the guidelines for the purchasing personnel in their efforts of controlling the stock levels. From the administrative point of view, materials management contributes to the performance measurement through two aspects, evaluation of materials-management budget target versus the actual, and ratio of materials budget to sales and purchases. These two aspects have a great influence on the inventory level, and the overall turnover of the company. They can also be used in evaluating the performance of the personnel. (Heinritz, Farrell, Giunipiero & Kolchin 1991: 260, 268.)

Purchasing is seen as one of the key elements from the materials management view, as purchasing the right items at the right time, will increase the level of service to the end-user. Materials management is controlling the incoming materials until they are either consumed in the process of production, or distributed to the end-user. When purchasing function is seen as a profit-oriented function, materials management becomes even more important aspect to be considered. (Lysons 1996: 61–63.)

3.2 Purchasing in organization

Purchasing is an important part of the bigger materials management concept. Purchasing function can not operate independently, on the contrary, its purpose is to ease and enable the action of other functions in organization. As the purchasing function is working in a close relationship with organization's other operations and on the other hand with a wide and diverse supplier base, purchasing department should be able to create new ideas and possibilities to the other functions. (Ericsson 1974: 138–139.)

Purchasing function is a constituent function beside of company's marketing, finance, administration, product development and manufacturing and it occurs in every trade- and industrial companies. As purchasing function often exceeds half of the company's revenue, it has a significant influence to the company's profitability. Down to this, the

purchasing function should be modified according to the organization's long-term business goals and objectives. (Sakki 1982: 11.)

Organizing the purchasing will clarify the roles of each employee working with purchasing activities. Alternative structures for organizing the purchasing are decentralized purchasing structure, centralized purchasing structure, line-management organization, pooling structure and cross functional sourcing teams (van Weele 2005: 233–234). In next chapters, a more complete review is made from centralized and decentralized purchasing structure.

The way company organizes the purchasing activities, depends greatly from the managements attitude towards the purchasing functions. When purchasing is seen as an operational activity, it will result a relatively low position in the organization levels. On the other hand, if management believes that the purchasing function is an important competitive and strategic function, the position in organization can be close to the board of directors. (van Weele 2005: 231.) The status and role of purchasing in organization is determined by the amount of support throughout the company. If the purchasing function is recognized as a strategic asset instead of just an operational function, it can generate competitive advantage to the company. (Carter & Narasimhan 1996: 21.)

3.2.1 Centralized versus decentralized purchasing

A decision between centralized and decentralized organizational structure of the purchasing function is made in order to clarify the roles of personnel and departments in the organization. The choice is always a compromise, and the purchasing personnel have to put effort on eliminating the disadvantages of chosen structure, and getting the best qualities out of it. (Gadde & Håkansson: 123–124.) There are some arguments for both structures presented in the following chapters.

Centralization has a favorable argument which suggests that the concentration of purchasing can increase the effectiveness of resource utilization. Centralization will increase the purchasing volumes with certain suppliers, which will lead to a stronger negotiating position. Centralization also enables the coordination of purchasing actions between departments of the buying company and the supplier. (Gadde & Håkansson: 123–124.)

In centralized structure, the purchasing department is located to the strategic level. Decisions on purchasing, products and suppliers are made centrally. Decisions and contracts are usually multi-year agreements, with certain suppliers, and they also include the specific purchasing conditions. Centralized structure does not involve in operational purchasing, it remains in the responsibility of business-units. The advantage will result as better coordination of purchasing and also better conditions referring to prices, payment terms and quality from suppliers. The drawback might be the lack of responsibility of business units' managers when it comes to purchasing decisions. This might arouse a situation where the manager believes he can make better decisions, and end up negotiating straightly with suppliers. Centralized structure is most suitable in situations where the purchased product has the same strategic meaning to several business-units, or even to the whole corporation. (van Weele 2005: 234–235.)

Decentralization of the purchasing function bases on the idea that purchasing is an integral part of the company's operations and there is no point carrying it out centrally. Decentralization of purchasing activities leads to a situation where different units in the company will tend to use different suppliers. The supporters of decentralization claim, that in a centralized purchasing structure, the distance between purchasing and other functions of company becomes too big to handle. And on the other hand, in decentralized structure, every unit can make its own purchasing decisions, which can be evaluated and accepted by the other functions of the individual unit. (Gadde & Håkansson: 123–124.)

Decentralized structure is generally found from companies that have a business- unit structure. Every unit manager is responsible from the results of the unit, and at the same time responsible from the purchase functions of the unit. When belonging to the same corporation, it is possible that the units might negotiate with the same supplier at the same time, from the same product. This will actually generate a competitive situation between the different units, and as a result, every unit will come out with different purchase condition. Decentralized model will work in corporations, where every unit is dealing with different products from each other. (van Weele 2005: 234.)

3.3 Purchasing management

After defining and planning the purchasing process and objectives, the basic expectations by management are the competent performance of purchasing duties and

the accomplishment of the basic purchasing activities. Management also expects that the purchasing department can operate as an information center in issues relating to product availability and costs. (Heinritz et al. 1991:15–16.) These objectives and results can only be required if the purchasing function is managed such a way, that it enables the sufficient resources for the purchasing personnel in fulfilling these expectations.

The management process developed by Van Weele (2005: 87) is presented in figure 4.

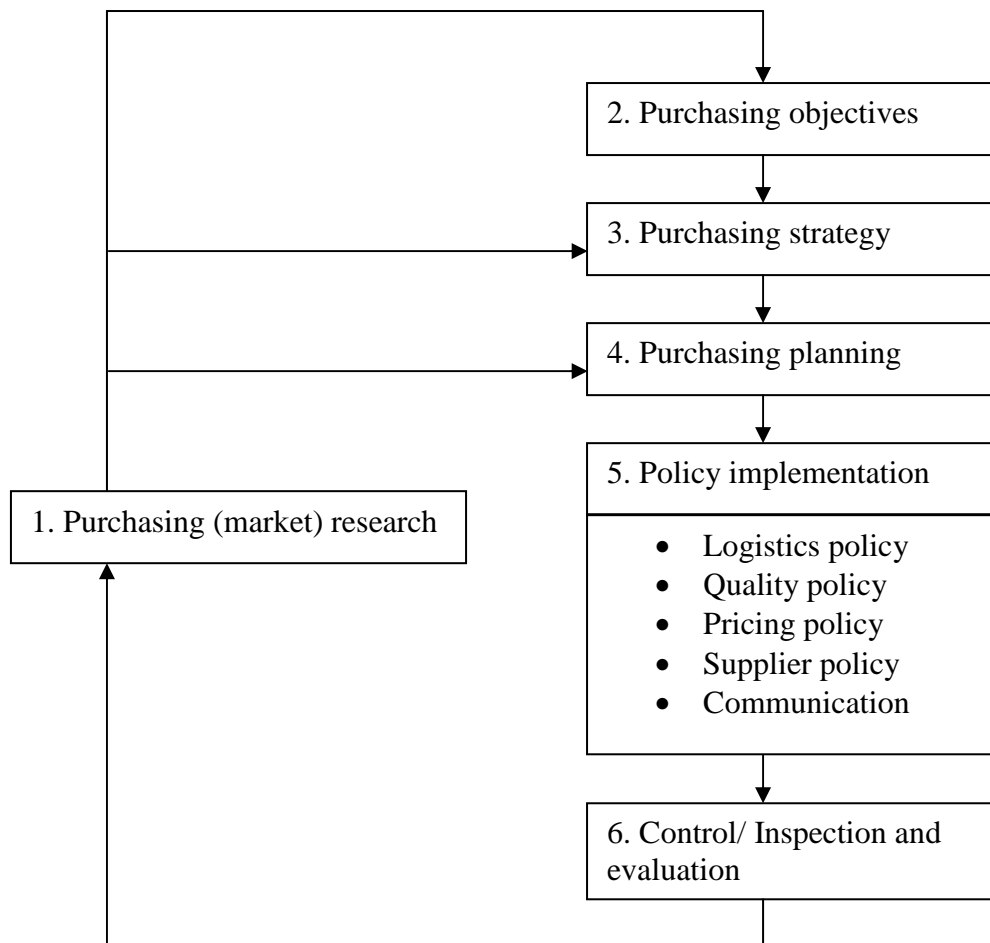


Figure 4. The purchasing management process (van Weele 2005: 87).

1. Purchasing (market) research; This stage includes the studying of the significant factors, external or internal, that might have an influence on the supply and demand of items. A thorough examination of the relevant factors, such as supplier studies, supply market studies, material and inventory holding related cost analyses, will help the company in securing the company's requirements. Purchasing research should

produce data that can be used as an instrument in making better purchasing decisions. (van Weele 2005: 87–90.)

2. Purchasing objectives; The main objectives of purchasing relates to actions such as cost- reduction, evaluation of the supply base (e.g. reduction of suppliers), improvement of product quality, and shortening the lead time. These objectives will support the management of the company's purchasing activities and relationships with suppliers. (van Weele 2005: 87–90.)
3. Purchasing strategy; The purchasing research will support the establishment of purchasing strategy. In purchasing strategy planning, decisions referring to issues such as supplier quantity per one product group, the depth of the relationship with supplier, and global or local purchasing needs to be made. (van Weele 2005: 87–90.)
4. Purchasing planning; Purchasing research is supporting the purchasing planning in clarifying the external long-term factors that might affect company's purchasing activities. Planning is important in preparing the purchases to the future needs of the company. Planning provides long-term future requirements, so that the purchasing activities can be planned with the best possible accuracy. (Leenders et al. 2002: 109.)
5. Policy implementation; A short explanation of the stages in policy implementation is made below:
 - Logistics policy is the optimization of ordering process and the flow of incoming materials. Includes the establishment of schedules to suppliers, solving any delivery problems, and evaluating the supplier delivery performance.
 - Quality policy refers to the standardization of product specifications, concentration on the life-cycle of the products, stating specific areas of quality improvements needed to the suppliers, striving for an agreement of continuous warranty with suppliers, starting a program with value analysis in order to reducing the costs of the product.
 - Pricing policy aims to achieve a control of the costs, so that the supplier can not present any unjustified price increases. A thorough knowledge from the structure of markets and the general price level is crucial. Pricing policy also includes the building of cost-models, monitoring the cost factors, and budget estimates.
 - Supplier policy refers to an overall management of the supplier base. Decisions whether to use multiple or single sourcing strategy is made. Making an

evaluation of the supplier performance, and on the grounds of the results, decide which suppliers deserve to be rewarded with more business, and which suppliers are not performing efficiently enough.

- Internal and external communication about the company's purchasing policies is essential to the efficient operations in the organization and between the buyer and supplier.

(van Weele 2005: 87–90.)

6. Control/ inspection and evaluation; When evaluating the purchasing results and activities, it is important that the management can reflect the results to the financial resources planned for purchasing operations. A periodical examination of the purchasing activities through the reports from the costs and stock value is made. The reports also include information about the performance of the suppliers. The formula used in reporting to the management, should be standardized so that the comparison between different periods is possible. (van Weele 2005: 87–90.)

A similar model for the purchasing management process has been developed by Lee and Dobler (1977: 380):

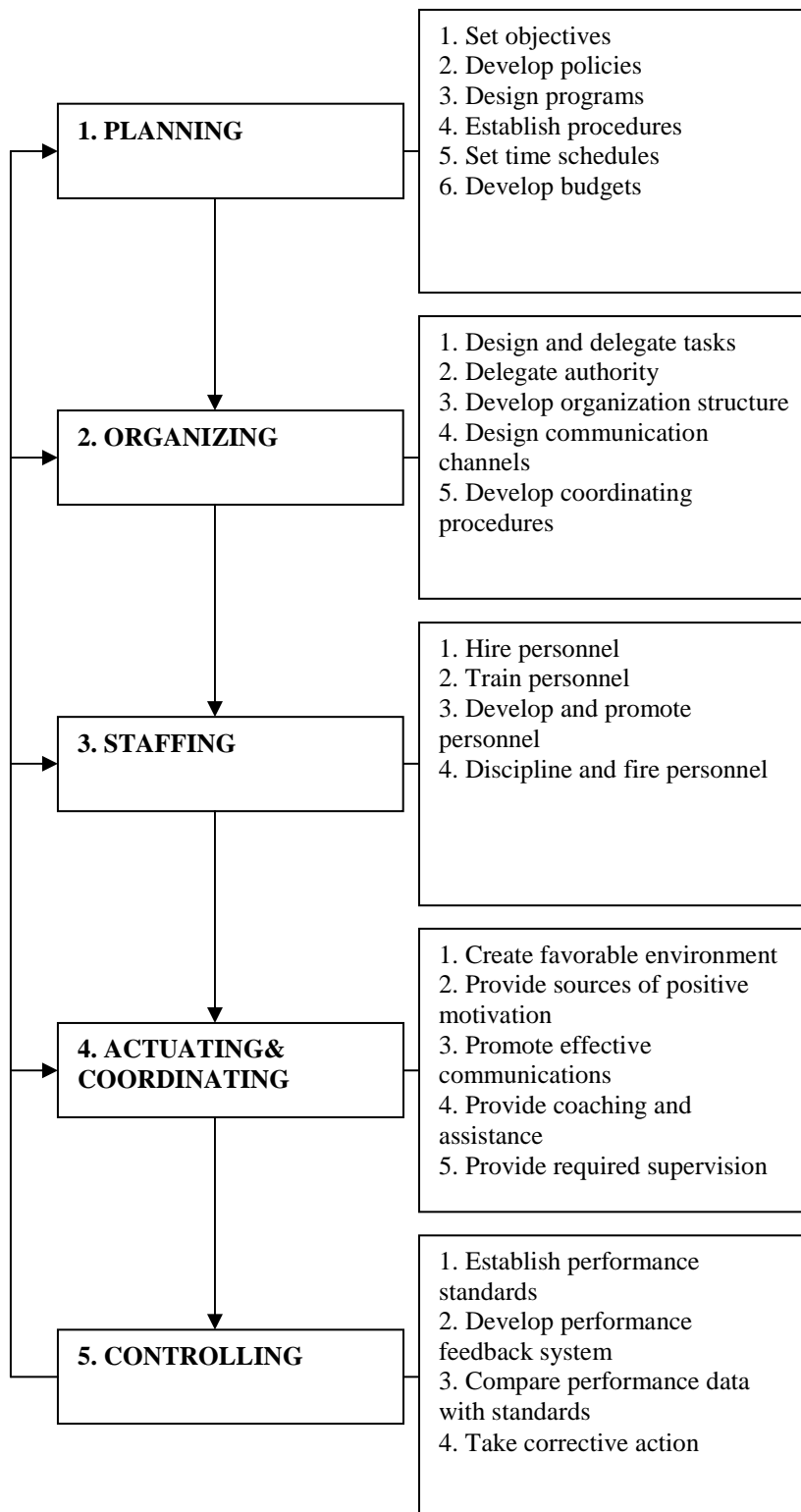


Figure 5. Purchasing management process (Lee & Dobler 1977: 380).

Different situations might require different emphasis on the phases. Although the phases are interrelated with each other, so even if some phase is emphasized, other phases have to be taken into account as well. In Lee and Dobbler's model (1977: 380), the purchasing management consists from five different phases:

1. Planning sets the goals and objectives for the future, and also defines the procedures in order to successfully achieve the set objectives.
2. Organizing defines the position and function of purchasing in organization. The position of personnel in the purchasing organization should also be clarified. The purpose is to optimize the satisfaction and behavior of personnel.
3. Staffing includes all the activities that enables successful purchasing function through competitive personnel.
4. Actuating & Coordinating aims to elicit voluntary dedication and high quality performance from personnel. Key factor is to provide such an environment and necessary supervision which will motivate the personnel to work efficiently towards the common goals.
5. Controlling the activities and measuring the performance will ensure that the output is satisfactory. Through controlling it is possible to improve the purchasing personnel's efficiency and decision making.

(Lee & Dobler 1977: 379–381.)

The purchasing management processes presented above, are both continuous evaluation of personnel and business performance. These processes also enable the management to critically evaluate their own working methods, and take corrective actions when needed. These models can be considered as guidelines, facilitating an efficient purchasing function that will support the global sourcing strategy.

In addition to controlling and measuring the current performance and processes, Kraljic (1984: 3–4) suggests that managers must learn how to make things happen to its own advantage. This requires a change of perspective from managing the purchasing as operative function to managing the bigger concept, supply chain. Especially when critical items are purchased, the management of the whole supply chain becomes essential. (Kraljic 1984: 3–4.) Supply chain management is examined in chapter 4.4.

3.3.1 Performance measurement

The purchasing performance measurement can be generally defined as the quantitative or qualitative evaluation of how well the purchasing function and the personnel employed achieve the objectives assigned to them (Lysons 1996: 395). Purchasing performance consists from two elements: (1) purchasing effectiveness and (2) purchasing efficiency. Purchasing effectiveness is the extent to which the planned goal or standard is reached. It can be described as the relationship between actual and planned performance of human activity. The purchasing efficiency relates to the resources required to meet the objectives which have been set for the purchasing function. Purchasing efficiency is the relationship between planned and actual efforts made, so that the goal agreed can be realized. (van Weele 2005: 254–255.)

When setting the goals and performance measurement systems it should be noted that individual's actions can be highly influenced by them. The motivation and commitment can be improved when these systems and goals set to evaluate the performance, are thoroughly planned. The measurement system needs to be clearly stated, and the focus areas should be emphasized so that the individual won't get confused in one's actions and decisions. Clearly stated system will also ensure that the individual will work towards the common goals of the company set by the management. (Dumond 1991: 21–22.) There are four different dimensions on which the measurement and evaluation of purchasing can be based:

1. *A price/ cost dimension*; Price/ cost dimension refers to the continuous monitoring of prices, and possible price increases. Using measures such as ROI (Return On Investment), material budgets, and price inflation reports. It also means a continuous monitoring and development of activities which can reduce the costs of materials. Budget establishment is an important part of performance planning and monitoring. (van Weele 2005: 255.)
2. *A product/ quality dimension*; The dimension of product/ quality refers to the role of purchasing in total quality control of the product. Controlling the quality will ensure that the product delivered, will perform the quality requirements set by the purchasing organization. The evaluation of the product quality can be made with measurements such as the reject rates on incoming goods, number of certified suppliers, and number of reject reports handled. These measures can be used as indicators of the company's capability in flawless incoming material flow from suppliers. The flawless incoming

material flow can also be used in measuring the purchasing personnel's success in their actions. (van Weele 2005: 256–257.)

3. *A logistics dimension*; In the dimension of logistics, purchasing is evaluated from its contribution to efficient incoming flow of materials. Controlling the timely requisitions, include factors such as number of orders issued and order backlogs. Logistics dimension also relates to the control of timely deliveries from suppliers. Measures such as supplier delivery reliability, product shortages and over/under delivery can be used. Purchasing personnel also has the responsibility to determine and control the inventory levels, and measures such as inventory turnover ratio and average order size can be used to evaluate the logistics dimension. (van Weele 2005: 258.)
4. *An organizational dimension*; Organizational dimension includes the major resources, which are used in order to achieve the goals and objectives of purchasing function. The organizational dimension consists from purchasing staff, purchasing management, purchasing procedures, and purchasing information systems. These four aspects include e.g. training and development of personnel, available purchasing strategies and action plans, availability of procedures and instructions, and efforts made to improve the information systems. (van Weele 2005: 258.)

The measurement of these four dimensions can be made from line-item level, individual supplier level, level of the individual buyer, departmental level or overall level. Measuring the performance doesn't necessarily need to be made from one point of view, it can be an aggregate from all of the five presented levels. (van Weele 2005: 258–259.)

One of the most concrete measures in evaluation of performance is the inventory level. As too large inventory levels will increase the cost of doing business, by tying up capital and requires physical space, which composes a significant cost to the company. (Heinritz et al. 1991: 271.) Giving accurate budgets about the wanted levels of inventory, and regularly comparing the planned to the actual, management can easily and in a quantifiable way measure the performance of the purchasing function and personnel. This will also give information about the success of forecasting done in cooperation between sales and purchasing.

3.3.2 Classifying purchasing materials

Kraljic (1983: 112–113) has formed a classification for the purchased materials and products based on their strategic significance and the risk they possess (table 5). Through this classification it is possible to evaluate the risks relating to the purchasing of materials and products, such as the influence of chosen strategy on deliveries. The classification is divided into four different categories: (1) Noncritical items, (2) Bottleneck items, (3) Leverage items and (4) Strategic items.

Table 5. Classifying purchasing materials requirements (Kraljic 1983: 112).

Procurement focus	Main tasks	Required information	Decision level
Strategic items	Accurate demand forecasting. Detailed market research. Development of long- term supply relationships. Make- or buy decisions. Contract staggering Risk analysis. Contingency planning. Logistics, inventory, and vendor control.	Highly detailed market data. Long- term supply and demand trend information. Good competitive intelligence. Industry cost curves.	Top level (e.g. vice president, purchasing).
Bottleneck items	Volume insurance (at cost premium if necessary). Control of vendors. Security of inventories. Backup plans.	Medium- term supply/ demand forecasts. Very good market data. Maintenance plans.	Higher level (e.g. department heads).
Leverage items	Exploitation of full purchasing power. Vendor selection. Product substitution. Targeted pricing strategies/ negotiations. Contract/ spot purchasing mix. Order volume optimization.	Good market data. Short- to medium- term demand planning. Accurate vendor data. Price/ transport rate forecasts.	Medium level (e.g. chief buyer).
Noncritical items	Product standardization. Order volume monitoring/ optimization. Efficient processing. Inventory optimization.	Good market overview. Short- term demand forecast. Economic order quantity inventory levels.	Lower level (e.g. buyers).

Noncritical items are materials and products which has a low profit impact and low supply risk. The volume of noncritical items is usually high. Characteristic for these items is that the supply-base is large, and the materials and products are standard items. This enables the reduction of suppliers and relieves controlling the warehouse, which gives an opportunity to concentrate on the actual business. Because of the large supply-base, there is no need for big buffer stock. Short-term forecast is usually made for noncritical items, and the decision making is executed on the operational level of organization. (Kraljic 1983:112–113.)

Materials and products that have a low profit impact and high supply risk are categorized under bottleneck items. The deliveries are uncertain, which means that there is an ongoing pressure for developing the collaboration between buyer and seller. These items usually have only few suppliers, and there is a big distance between the buyer and seller. It also means that optional suppliers are constantly explored, so that the reliability of deliveries can be increased. There needs to be a high volume buffer stock for these kinds of materials and products. Middle-term forecast is made on bottleneck items, and the decision of purchasing is made on the manager level of organization. (Kraljic 1983: 112–113.)

The leverage items are products and materials that have high profit impact and low supply risk. There are several suppliers for these items, but the demand in markets is rather small. This gives an opportunity for the buyer to achieve financial benefit through competitive bidding without any long-term partnership with the supplier. As the cooperation is single minded, a new supplier evaluation can be made every time when leverage items are bought. Medium-term forecast for the demand of leverage products should be made. The decision of purchasing these items is made on the medium level of organization. (Kraljic 1983:112–113.)

Products and materials that have high profit impact and high supply risk are classified as strategic items. These items are narrowly available, which means that the long-term forecast is essential when planning the purchasing of these items. There is a limited supply-base for these products and materials, on the other hand, competition on markets for these items is minor. Long-term cooperation should be build with the suppliers, so that the reliability of deliveries can be assured. Decisions regarding the purchasing of strategic items are made on the top level of organization. (Kraljic 1983: 112–113.)

3.3.3 Intraorganizational communication

Information systems are the basis of an efficient control system. Workable purchasing function requires an efficient and two-way information flow between the other parts of organization. This means that every function in organization is passing the important information to the purchasing department and vice versa. The biggest influences on a successful purchasing function are the demand forecasts. This gives the required time to the purchasing function to balance the situation between market conditions and the organizational needs. Budgeting and calculations are enabling the coordination of resources, and setting the financial limits to the purchasing actions. These limits might affect the policies regarding the inventory levels and purchasing decisions. (Ericsson 1974: 144–145.)

The sharing of information across international organizational boundaries is necessary to achieve improvements in cycle times, inventory positioning, cost, delivery, customer service, and other key performance areas. Because there is a need for closer relationships throughout the global supply chain, effective information sharing between business units is essential. The intraorganizational information systems play a critical role in the successful sharing of many kinds of information that affect to the success or failure of a global sourcing strategy. The information systems that enable the sharing of information across geographical and business unit boundaries should be included in the global sourcing strategies. (Petersen et al. 2000: 33–35.)

There are information flows into and out of the purchasing department and personnel working in it. As the organizations are facing a continuously increasing pressure by the rapidly changing environment in which they operate, joint cooperation between departments has become one of the key factors in successful business operations. The relationships of purchasing and other departments are presented in figure 6. (Heinritz et al. 1991: 17.) Pursuing to the goals and objectives of global sourcing strategy, organizations should establish worldwide information systems, such as single worldwide databases with complete and current technical and commercial data of all available products and preferred suppliers (van Weele & Rozemeijer 1996: 158).

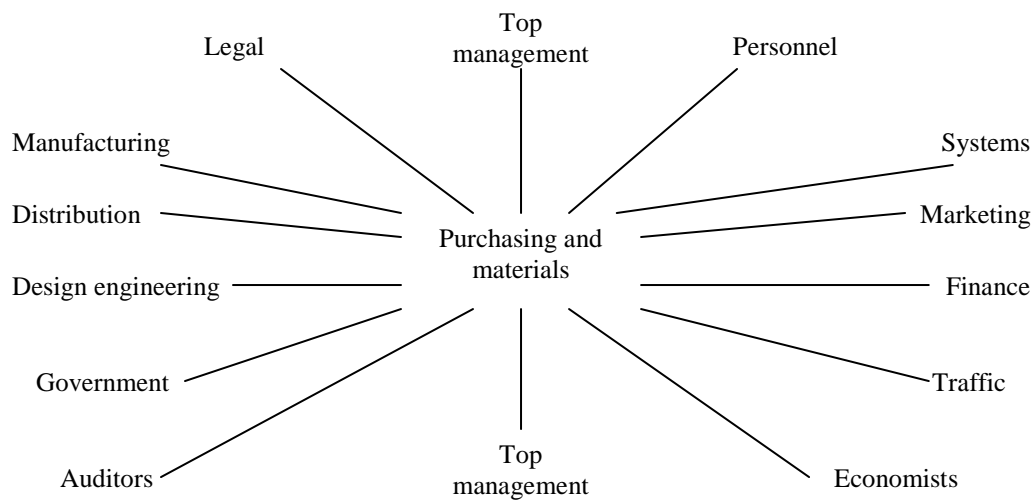


Figure 6. Purchasing/ materials interfaces (Heinritz et al. 1991: 17).

3.3.4 Communication between purchasing and sales

Having a common conception of the situation in markets and understanding the present and future needs of the end-user, is one of the key factors in serving the customers successfully. Making of accurate and well-planned forecasts of the expected development and demand in the markets, will aid the company in achieving competitive advantage. When sales and purchasing personnel are working together in forecasting the markets, there will be a mutual understanding for both sides. Properly made sales forecasting is one of the most helpful tools in planning the purchasing strategies (Leenders et al. 2002: 109).

The cooperation between sales and purchasing will also bring the end-customer closer to the purchasing function. Although the purchasing function is rather distant from the customer, it also has a responsibility of the customer satisfaction. Cooperation with sales will increase the knowledge of the purchasing personnel about the needs and problems of end-users.

Sales expect the purchasing department to buy items at the lowest cost, so that the company can be competitive on the markets. Knowing the costs and delivery times of items, enables the sales personnel to price the products and give estimation about the delivery times to the end-user of the product. (Krotseng 1997: 7–8.)

The sales have their own perceptions of what kind of products is needed, in what time and what quantity. And on the other hand, purchasing personnel have their own conceptions of what kind of product can be delivered, when and what kind of quantity. In combining these assumptions of sales and purchasing personnel in a collective meeting, the forecasting process will have a good start. Cost analysis will be made, taking into account the aspects of both sides, in order to find the price level acceptable. In addition, a specified long term data from customers will be requested. The data required from the end-users can be just an indicative proposal, which will be specified within certain time periods. This helps the long-term planning and forecasting of purchasing the right items, and it also increases the possibility of on-time deliveries.

The result of efficient communication and cooperation will result as scenario planning, a conceptual forecast of the future. Starting with different assumptions will enable several different future scenarios. The assumptions can be based on the examination of trends relating to economic, political and social factors that may affect corporate and purchasing objectives. Planning involves the decision of which scenario is most likely to occur and devising appropriate strategies to it. (Lysons 1996: 27.)

As the forecasting and scenario planning occurs usually in business units in different countries, it is important that all the information is gathered to the same data base, so that the overall situation becomes clear. The information of each business unit is collected to the same table, which is then analyzed by purchasing professionals and management, responsible from the global sourcing function.

3.3.5 Total Cost of Ownership

Total cost of ownership (TCO) gives a better understanding of purchasing decisions, as it takes a long-term, big picture approach. TCO is more than just calculating the price of the product; it explores how the purchasing activity affects to the total costs of the firm. (Ellram 1993: 5.) Broadly defined, total cost of ownership includes all relevant costs, such as purchasing administration, follow-up, expediting, inbound transportation, inspection and testing, rework, storage, scrap, warranty, service, downtime, customer returns, and lost sales. The purchasing price added with these costs constitutes the total cost of ownership. (Leenders et al. 2002: 375–376.) The benefits of total cost ownership are associated with:

1. Performance measurement; improving the quantitative measurement of supplier performance.
 2. Decision making; provides a good basis for supplier selection decisions, because of the complete cost data relating to each supplier.
 3. Communication; the system provides a solid data to communicate with suppliers regarding their performance. It also represents an important way to get other departments/personnel within the company to involve the purchasing decisions.
 4. Insight/understanding; the information developed using TCO regarding the supplier's total costs can be used to track the supplier's costs over time. This can be used to evaluate the cost development of the supplier over time, or to compare the costs with other suppliers.
 5. The support of continuous improvement efforts; total cost of ownership helps purchasing personnel in developing an awareness of the significant non-price factors that affect certain buys. This helps in negotiations and in determining which incremental costs can be obtained more economically from different supplier.
- (Ellram 1993: 4–5.)

When beginning the implementation of a TCO approach, the company should categorize all the major costs relating to the product under observation. A wise approach is to focus on a small, easily controlled group of items, or selecting just one item to observe. For example a flow chart of the costs is a useful tool in modeling the costs, so that they become more understandable and quantifiable. According to Ellram (1993: 8–9) before the implementation of TCO, the next actions should be performed:

- Developing a process flow chart, to sharpen the focus on firm's pretransaction, transaction, and post transaction cost elements relating to the observed product.
- Determine which cost components are significant to warrant tracking. There are probably a few key cost components that make up the majority of TCO expenses for a given item.
- Determine how those significant cost components will be tracked.
- Gather and summarize the relevant cost component data.
- Analyze the results.

4. SUPPLIER SELECTION

The procedure of supplier selection begins with a comprehensive list of prospective suppliers and during the rating and evaluation of suppliers, the number of the prospective suppliers will be reduced to one or few to be favored in the business. The procedure basically means searching and sorting. (Zenz 1981: 130.) In the following chapters, the main steps of successful supplier selection are presented.

4.1 Supplier evaluation

A detailed evaluation of supplier is especially important when purchasing key items. The evaluation should consider the supplier's probable capability in fulfilling the objectives required. (Barker 1989: 89.) Sakki (1982: 158) suggests that before any business relations with supplier is established, an evaluation should be made of the supplier's ability to deliver in time, and compare the quality to the price of the product. The main focus should be in finding any risk factors, mainly relating to the deliveries and quality of the product.

According to van Weele (2005: 77), there are six criteria for selecting the right supplier:

- Production: What is the experience of supplier in materials that are purchased?
- Organization: What is the state of the quality and experience of the staff that will be employed? What is the extent of products that the supplier can deliver?
- Financial Status: What is the situation with supplier's financial reliability? And how strong is his need for work?
- Design and manufacturing capacity: How is the supplier monitoring his costs? Earlier experience in manufacturing required items?
- Quality assurance: Is there any guarantees by the supplier referring to design specification and technical specifications? What are his quality standards?
- Experience and references: Any information from other client organizations referring to the work done by the supplier?

Barker (1989: 99) has listed some characteristics for a good supplier; supplier meets the requirements of buyer, provides good documentation, problems are handled efficiently when they occur, supplier is flexible with the changing environment, and supplier is a specialist in his own field. After a critical evaluation between supplier options has been

executed, the suppliers who lack the critical evaluation criteria will be eliminated from the list of potential options.

To improve the selection of the best suppliers, a simple supplier-evaluation model (table 4) has been developed by Kotler and Keller (2006: 225).

Table 6. An Example of Vendor Analysis (Kotler & Keller 2006: 225).

Attributes	Rating Scale				
	Importance Weights	Poor (1)	Fair (2)	Good (3)	Excellent (4)
Price	.30				x
Supplier reputation	.20			x	
Product reliability	.30				x
Service reliability	.10		x		
Supplier flexibility	.10			x	
Total Score: $.30(4) + .20(3) + .30(4) + .10(2) + .10(3) = 3.5$					

The attributes presented in this model, are only indicative, and can be modified by the buyer, so that the attributes are individually suitable for each buying situation. The model can be used in the supplier selection process, but it also can be a helpful tool in evaluating the supplier performance after the first deliveries. Changing the attributes and importance weights will enable the diversified use of this model.

When choosing the supplier, there arises a question referring to the number of suppliers. The classic problem is whether to choose single-sourcing (one supplier per product) or multiple sourcing (several suppliers per product). (Gadde & Håkansson 1993: 41.) Earlier notes in this research about the size of supply base was made in chapter 2.1, where the seven step list in creating an effective sourcing strategy by Laseter (1998) was presented.

When a company chooses to operate through the single-sourcing, the advantage is gained from the involvement of the supplier. As there is no competition from the same product, it is easier for the supplier to open up to the buyer. On the other hand, it makes the buyer very dependent on the supplier, and this can lead into losing contact with the

supply market. (van Weele 2005: 162.) There also lies a risk that the supplier might have lengthy stoppages in their production, such as maintenance stops. These drawbacks require a periodical audition of the supplier, to ensure that customer expectations have been heard and implemented. (Hutchins 1992: 72.)

When preferring multiple sourcing, the buyer has several suppliers which can deliver the certain product. Having several supplier for certain product will reduce any breaks in the flow of materials. (Weele 2005: 162) Using several suppliers will probably generate a short-term price decreases, but the improvement or development of products and services is very unlikely to occur. Other drawbacks in preferring multiple sourcing are such as variations in quality, high overall costs, loss of volume discounts, and increased travel costs to visit supplier facilities. (Hutchins 1992: 72.)

It should be noted that increasing the annual volume from a certain supplier will probably reduce the purchasing prices and overall costs. This leads to a significant competitive advantage. (Kraljic 1984: 9.) This advantage can be reached for example by combining the purchases of corporation's different units to a certain supplier through global sourcing activities.

In Laseter's (1998) seven step list, the step one was to view the supply-base rationalization as a result, not the objective. When it comes to selecting between single-sourcing and multiple sourcing, it should be handled case by case. The probable result is that company will end up using both, depending on the product and market situation, as well as the quality and quantity of suppliers.

Lysons (1996: 250) has stated a comparison between single and multiple sourcing: *“Aggregating your business with one supplier should give you better prices, reduce any unnecessary tooling costs and should improve the service you receive. Alternatively, the resulting competition from dividing up your business between two or three suppliers could give you a better deal. A well- motivated single source supplier may be a more secure one in difficult trading conditions. Alternatively, a second source could give you greater security in the event of an accident or other upheaval at your main supplier.”*

4.2 Supplier performance evaluation

Supplier performance evaluation is a critical phase in sourcing materials and products. Evaluation of the supplier performance is made after or during the deliveries of purchased items, and then compared to the expected value estimated at the supplier selecting stage. The comparison should be made on the key areas such as quality, delivery, after-sales, service and price. (Barker 1989: 103.)

As a continuous task, the evaluation process should include the present suppliers, and the potential, new suppliers. The present suppliers are usually proven to be reliable and good sources, and the evaluation easily is forgotten by the purchasing organization. Evaluation of current suppliers should concentrate on quality, quantity, price, delivery and service objectives. The new, potential suppliers are observed with extra attention, as there is not yet a complete picture consisted from their performance. (Leenders et al. 2002: 254–259)

Supplier performance evaluation of potential suppliers should provide information of whether the supplier is included into the future planning of supply base. A trial order has usually been set to a potential supplier, and the performance will be measured with technical capability, manufacturing strength, financial strength and management capability. Two questions can be presented when evaluating a potential supplier:

1. Can the supplier meet the purchaser's requirements in short and long term?
2. What is the supplier's motivation in delivering items in short and long term, following the requirements of purchaser?

(Leenders et al. 2002: 254–259)

Hutchins (1992: 94) has listed some of the common supplier performance measures. The list includes measures such as process capability, service levels, defects per product, late or early shipments, final customer complaints, and customer satisfaction level. When evaluating the supplier performance, these measures will give a general conception of whether the supplier is on the level that was expected when selecting the supplier.

This process should be considered as the key factor when it comes to improving the financial benefits of sourcing, and the reliability of deliveries. Global sourcing always

has its wild cards, and the better methods an organization has for evaluating its suppliers, the better are the chances in succeeding with its purchasing activities.

Evaluation that is done after the delivery, gives an opportunity to reassess the chosen suppliers, and decide whether to continue the co-operation or not. It also provides a good learning process for the new, upcoming supplier selection processes. The evaluation should be documented so that the possible mistakes made, can be avoided in the future.

4.3 Categorizing the suppliers

Based on the evaluation of suppliers, it is possible to categorize suppliers into four different kinds of suppliers groups. The first group, "*Acceptable Suppliers*", can execute the present operational needs of organization. The performance of these suppliers is easily overtaken, thus no competitive edge can be achieved. (Leenders et al. 2002: 317.)

Group of "*Good Suppliers*" perform better than the "*Acceptable Suppliers*", as they offer value-adding services in addition to the products delivered. The development from acceptable to good supplier requires a significant amount of purchaser and supplier effort. (Leenders et al. 2002: 317.)

The next group is named as "*Preferred Suppliers*". There are system or process orientation between the purchaser and preferred suppliers. Unnecessary duplication is avoided, and the transactions become more efficient. Supplier and purchaser have a mutual goal to eliminate all nonvalue-adding operations. "*Preferred Suppliers*" can deliver all operational needs and some of the strategic needs of the purchasing organization. (Leenders et al. 2002: 317.)

The last group that is called "*Exceptional Suppliers*", can bring significant competitive edge to the buying organization through anticipating the operational and strategic need of the purchaser. "*Exceptional Suppliers*" can exceed the expectations of the buying organization, and there is no need in saying that these suppliers need to be treasured. These suppliers can act as an example of what can be achieved through accurate supplier selection. (Leenders et al. 2002: 317.)

The categorization of suppliers into four groups will help the organization in their future supply base planning. It also enables to keep clear records of every supplier in different categories, so that the supplier selection, development and possible rejection of supplier become more efficient. One option is to base the categorization on the supplier's delivery performance. The delivery performance is usually very easy to track, if good records exist of delivery promises and actual reception. The delivery performance can be divided into four different performance levels. *Top rating* performance occurs when supplier meets delivery dates without expediting and the requested delivery dates are usually accepted. *Good* performance means that the delivery usually meets shipping dates without substantial follow-up and the supplier is often able to accept the requested delivery dates. *Fair* performance is considered when shipments are sometimes late and substantial amount of follow-up is required. *Unsatisfactory* relates to delivery performance when the shipments are usually late, delivery promises are rarely met and constant expediting is required. (Leenders et al. 2002: 256.) These performance levels are very similar with the attributes in the Kotler and Keller's (2006) supplier rating model. The delivery performance evaluation can be used as part of that rating model, or as a separate evaluation tool.

All together, it is important that all the data is collected to the same place, and that the data is easily available when needed. There should be an individual supplier evaluation from all the aspects presented. This is part of the global sourcing process, where the coherent way of actions is reached through supplier selection processes. This also enables the situation, where different units will all use the preferred suppliers, with whom the corporation wide contracts have been negotiated.

4.4 Supply chain management

First of all, it is important to separate the supply management from supply chain management. Supply management emphasizes the buyer-supplier relationship, which is discussed separately in later chapters. The supply chain management is the whole process beginning from the supplier and purchasing of the product, and ending to the delivery of products to end users. (Leenders et al. 2002: 11.) As the supply chain consists from of several partners or components, such as suppliers, manufacturers, distributors and customers, the effective supply chain management requires integration of information and material flow through these partners from source to users

(Samaranayake 2005: 47). A basic model of manufacturing company's supply chain is illustrated in figure 7.

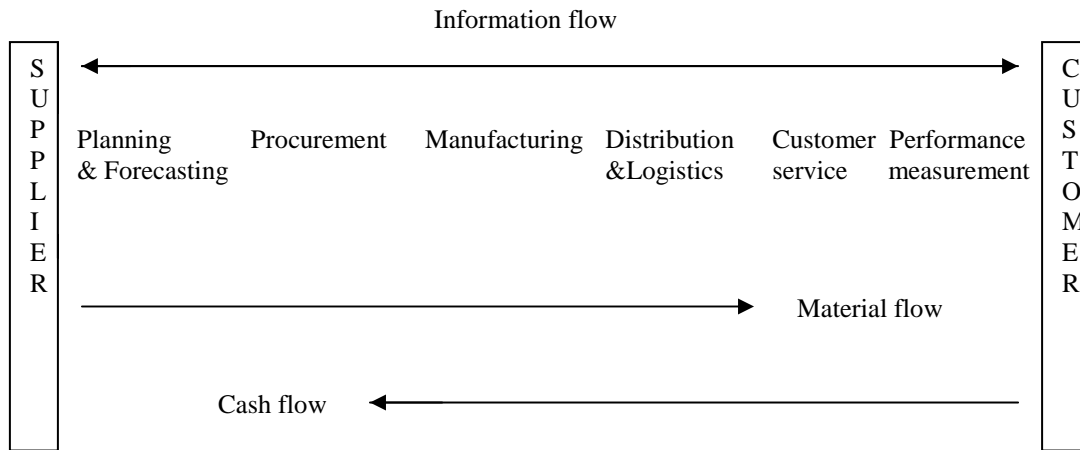


Figure 7. An Illustration of a manufacturing company's supply chain (Spekman, Kamauff & Myhr 1998: 55).

The objective of supply chain management is to improve the efficiency of the product delivery process starting from the supplier all the way to the end customer. The process efficiency improvement relates to delivering the right product, at the right time, with a minimum of handling and inventory costs. The focus of improvement is in coordinating the distribution and purchasing across organizational units. Supply chain management integrates the purchasing, production and distribution of the organization and ensures that there is a sufficient service level to the end customer. (Hoover, Eloranta, Holmström & Huttunen 2001: 9, 15.) Supply chain management includes all value-adding activities that occur between the supplier and end user of the product. The long-term goal of supply chain management is to increase customer satisfaction, market share and profits of the organization. (Wisner & Choon Tan 2000: 33–34.)

Sourcing and purchasing has an important position in the supply chain management. The main activities in the supply chain management relate to implementing and managing key supplier relationships and supplier partnerships, including supplier development and participation on cross-functional teams. Activities also include developing strategies that use the supply network to provide value to end customers and contribute to organizational goals. (Leenders et al. 2002: 55.) *“Developing a supply chain strategy is predicated on understanding the elements of sourcing strategy,*

information flows (internal and external), new product co-ordination, concurrent procurement, teaming arrangements, commodity/component strategies, long-term requirements planning, industry collaboration and staff development” (Spekman et al. 1998: 54). There are many similarities between the development of supply chain management strategy and sourcing/purchasing management and processes. This inevitably links the function and management of procurement to successful supply chain management. In successful global sourcing, these concepts need to be planned hand in hand.

As the supply chain management is responsible in developing the product delivery process from the supplier to the customer, SCM is also responsible from the make or buy decision making. The customer is efficiently served when the make or buy decision takes the end users needs into consideration and the decision is made on a hasty schedule. Gadde & Håkansson (1993: 36) highlight the make or buy decision as one of the key issues in supply strategy for the purchasing company. This decision relates to the question of whether to use company’s own production, or to source the products from a third party supplier. As the decision is highly dependable from the changing nature of internal and external factors, the decision should be made on the managerial or top management level of the organization. It is an ever-present consideration regardless of the previous practices (Heinritz et al. 1991: 161). The standardization of the decision making is rather impossible due to the facts presented above.

The make or buy decision is a very complex task in organizations as it requires a decision that will balance between the short and long term needs of the company. As the requirements and market situations change, a decision that has been made in the past might not be appropriate in the future and a completely different decision making process has to occur. (McIvor & Humphreys 2000: 296.)

4.5 Supplier relations

Managing the supplier relationships successfully is one of the top agendas in today’s organizations. In this study the management of cooperation with suppliers is held as an activity belonging to the sourcing committee. It is an important part of the supplier selection and evaluation process, as well as supply chain management. It has been emphasized that the buying corporations tend more and more to establish close

partnership relationships with suppliers and reduce as well as trim their supplier base (Gadde & Snehota 2000: 305–306).

The supplier relationship process is usually called as supplier partnering, which means establishing and maintaining an ongoing process between the two partners. This process includes information sharing, joint problem-solving activities, and mutual dependency. Partnerships are strong, long-term relationships with selected suppliers. (Stuart 1993: 23.) There are two major objectives underlying in this type of cooperation with the supplier, *logistics* and *quality*. The logistics aspect derives from the forecasting of the needs for the coming months, so that the supplier can anticipate the future requirements in their production. This will lead to a higher level of service and lower logistics costs. The improvement of quality is based on the mutual agreement of the quality requirements, which will enable fewer defects of deliveries. This will result in a reduction of quality costs for the supplier. (van Weele 2005: 165.)

In order to evaluate the costs and benefits of supplier relationships, broad categories are presented in table 7.

Table 7. Economic consequences of supplier relationships. (Gadde & Snehota 2000: 308).

Relationship costs	Relationship benefits
- Direct procurement costs	- Cost benefits
- Direct transaction costs	- Revenue benefits
- Relationship handling costs	
- Supply handling costs	

Relationship costs

Direct procurement costs are the most obvious costs that show up on the invoice from the supplier. These costs have always been the focus of purchasing attention, as they are easily identified and measured. *Direct transaction costs* consist from the expenses that every purchasing transaction is associated with. These costs are such as costs of transportation, goods handling, ordering, and so on. The direct transaction costs might

be difficult to measure, but usually they can be quite easily traced from the data base. The *relationship handling costs* are dependable from the existing relationship with the supplier. Some suppliers require a lot of continuous interaction for maintaining the relationship, which means costs as well. These costs depend on the extent of involvement with individual suppliers. Costs that cannot be attributed to particular suppliers or specific transactions are called as *supply handling costs*. These costs are structural and common costs for the purchasing organization as whole and they include costs such as communication and administrative systems, warehousing operations, process adaptations etc. (Gadde & Snehota 2000: 308.) These costs should all be recognized and taken into account when using the Total Cost of Ownership concept (TCO). TCO was comprehensively handled in earlier chapter of this study.

Relationship benefits

Cost benefits are usually more difficult to measure than the costs, as the benefits show up less clearly in company accounts. Despite this fact, two different categories of relationship benefits can be distinguished. *Cost benefits* refer to the savings in various costs of operations that can be related to the cooperation with suppliers. These cost benefits derive from efficiency improvements with supplier, such as joint efforts in product development and integrated logistics operations. *Revenue benefits* represent the economic consequences of supplier relationships that are related to the income side of the financial statement. When a solution in a relationship increases the revenues of buying company, it can called revenue benefits. These benefits are difficult to quantify, as the revenue benefits are usually indirect and linked to improvements in product quality or performance. These improvements show up in the end user of the purchased product, which has an affect to the competitiveness of the company. The improvement of competitiveness might not be directly seen in the account of the buying company. (Gadde & Snehota 2000: 308.)

Van Weele (2005: 153) has categorized four different supplier strategies based on the categorization of products which was presented in chapter 3.3.2. In table 8 the partnership strategy is presented as well as the characteristics for partnership supplier strategy.

Table 8. Characteristics for supplier partnership strategy (van Weele 2005: 153).

Characteristics \ Strategy	Partnership
• Objective	• Create mutual commitment in long-term relationship
• Suitable for	• Strategic products
• Activities	<ul style="list-style-type: none"> • Accurate forecasts of future requirements • Supply-risk analysis • Careful supplier selection • 'Should cost' analysis • Rolling materials schedules • Effective change-order procedure • Vendor rating
• Decision level	<ul style="list-style-type: none"> • Board level • Cross-functional approach

This level of supplier relationship is the kind of relation that the sourcing committee should aim when selecting and negotiating with suppliers. When the relation becomes partnership, it means mutual agreements of how the relation benefits both sides. When supplying strategic products, it is important that the supplier is reliable when it comes to the quality of the products and the delivery accuracy by the supplier. The forecasts need to be accurate, as well as the cost analysis of the products in order to serve the customer as agreed. Decision making occurs on the top level of organization, in this case, the sourcing committee in cooperation with supply chain managers.

According to Gadde & Håkansson (2001: 135–136), it is justified to the buying organization to have different types of supplier relations. The depth and nature of the supplier relation is dependent on what kind of capabilities and resources the supplier has to offer to the buying organization. The buyer-seller relationship can be divided into high-involvement and low-involvement relationships, depending on the occurrence of activity links, resource ties and actor bonds. The partnership strategy presented by van Weele (2005) can be categorized as a high-involvement relationship. Gadde &

Håkansson (2001) remind that the buyer-seller relations tend to be long term relationships on the industrial markets.

4.6 Theoretical framework

On the basis of theoretical review presented in this study, a theoretical framework is described in figure 8. This framework will be used as a tool in evaluating and examining the case company and its sourcing operations in the empirical stage of the study. Firstly, the emphasis is on the existing processes and structural components, which will formulate the current state of sourcing activities in the case company. The framework gathers together the ideal picture of how the global sourcing function should reflect to purchasing, supplier selection and supply chain management of the company. Through the coordination of purchasing operations, organizations will gain competitive advantage in the end user markets. On the basis of the framework, the intended sourcing and purchasing state and processes are modeled. Information should be shared in both ways, instructions and guidelines coming from the global sourcing function, and the information of operational activities and market situations should be informed from the operational level to the global sourcing committee.

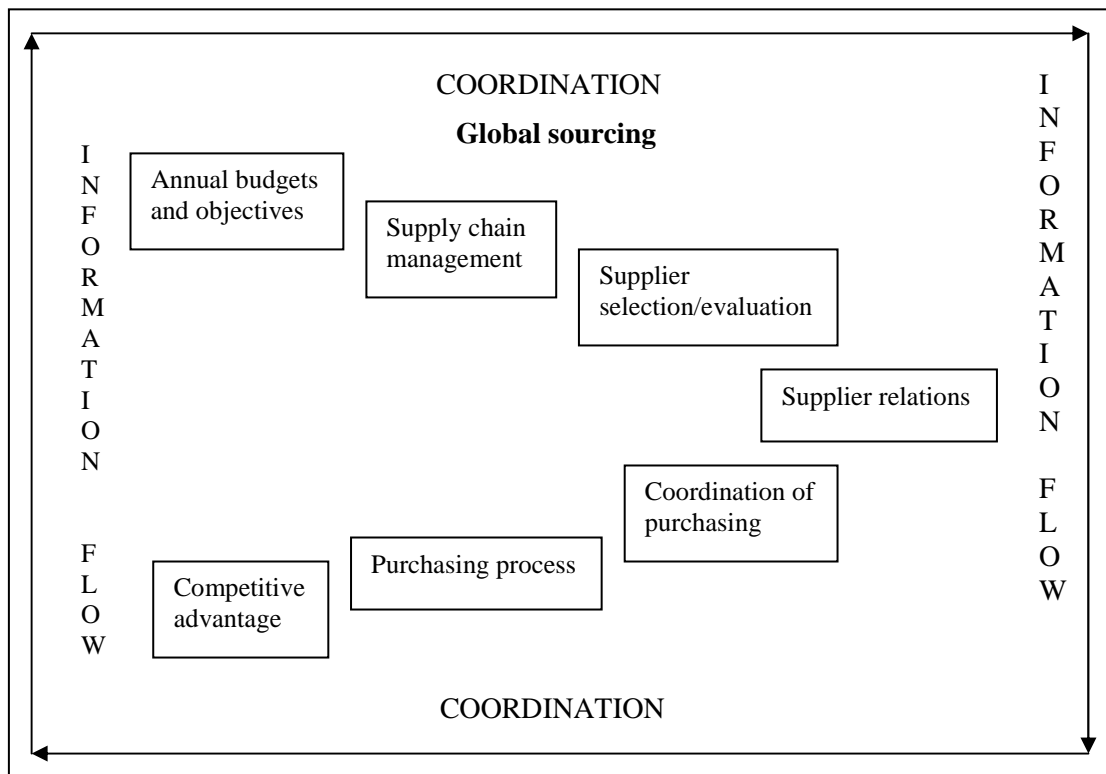


Figure 8. Theoretical framework

5. RESEARCH METHODS

This chapter presents the research methods and the empirical material collection methods. The research is performed by using qualitative research method, and it is implemented by the principle of action research. As the research problem was proposed by the case company, there was a need to take a practical perspective into account in addition to the scientific methods. The practical perspective was especially important, as the case company wanted the results of the study to give both, theoretical and practical implications which can further be used in developing the sourcing function of the company. The study was executed as an action research and the information relating to the problem studied, was collected in meetings and conversations with the top level management responsible for the sourcing function. In these meetings, there were no interviews made and no prompting of participants by the researcher of this study. Complementary questions and notes were made in order to discover the relevant information of the current situation of the sourcing function in the case company. The data collection was executed during the spring 2008 through participant observation. The total sample was gathered from six company x's employees operating in the top management level.

Characteristic for a case study is detailed, intensive information of an individual case or small group of interrelated cases. Focus is on an individual, a group or a community (organization), and the interest is often on the processes ongoing in the context. The empirical material is usually collected by using several methods, such as observation, interviews and by examining documents. The usual objective is to describe different phenomena. (Hirsjärvi, Remes & Sajavaara 2000: 123.) The nature of this study is descriptive, as the purpose is first to describe the ongoing processes in the company and then constitute the desired models and processes. After describing these two different stages, the study aims to establish development ideas in order to narrow the gap between the current and the intended structures and processes.

5.1 Qualitative study

The starting point for a qualitative study is the exposition of real life. This includes the idea that reality is diverse, and actions are shaping simultaneously each other, thus various differently directed relations can be found. The objective in qualitative research is to study the target as comprehensive as possible. There is no possibility to achieve

objectivity in its traditional meaning, as the researcher and what is already known are closely tight up together. Qualitative research is more about finding or revealing the facts, than verifying the already existing statements. (Hirsjärvi et al. 2000: 152.)

The nature of qualitative studies includes comprehensive information gathering from natural and real life situations. The preferred instrument of information gathering is people, and the researcher trusts more to one's own observations and conversations with the studied target, than to the information gathered with quantitative measuring devices. In qualitative research, the information gathering is conducted through qualitative methods, such as theme interviews, participant observation, group interviews and discursive analysis of documents and texts. The studied target is selected expediently, not through random samples. (Hirsjärvi et al. 2000: 155.) In qualitative research, the research material is verbal or visual, which allows the researcher to use one's own discretion when translating the results into understandable and readable form.

In this study, qualitative methodology is used because of the practicality of the research problem. Qualitative study gives much more freedom in interpreting the results and solution propositions compared to quantitative research. As this study aims at solving the specific problems of the case company, the changing nature of situations requires the freedom of interpreting the results by the researcher.

5.2 Action research

Action research begins from a certain practical problem, thus action research is closely linked to situational and environmental factors, and the problem solving occurs between several participants. Action research is a gradual process that advances through continuous considerations, conversations and negotiations. The researcher is inside the problem, working with the other participants to find the solutions. (Syrjälä, Ahonen, Syrjäläinen & Saari 1995: 30–33.)

Action research is situational, collaborative, participatory and self-evaluative. Action research strives to solve problems perceived in real life operations, or to develop the existing practices into better ones. (Metsämuuronen 2005: 217.) The action research is a suitable strategy in the acquisition of information in this research, because it concentrates on different real life problems and tries to understand them in different contexts, in this case, the working community.

The empirical stage of this study follows a somewhat traditional pattern of action research. The progress of this study is presented in figure 9.

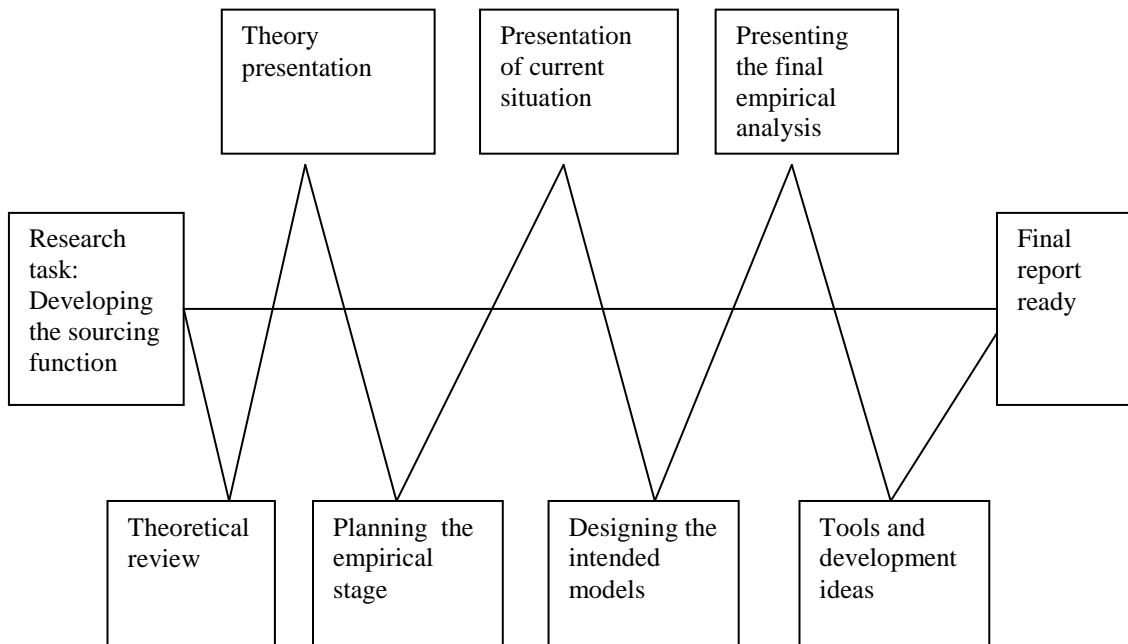


Figure 9. The progress of the study.

The research process began by making a theoretical review of the sourcing issues relevant to the coming empirical research. The theory was then presented and approved by the case company. The next stage was to define the current sourcing and purchasing processes in the case company. At this stage, the information received through participant observation was used in analyzing the situation. After the approval of the current situation by the case company, the research proceeded to modeling the ideal, intended sourcing system. In this process, the researcher participated in a few meetings, where the future strategy was examined. After modeling the ideal structures and processes, the results were once more approved by the case company and the research was finished up by making further suggestions and development ideas to the case company about how to proceed from the current situation towards the wanted stage of sourcing systems and processes.

5.3 Participant observation

Participant observation is one type of scientific observation, which is adjusted to the natural operations occurring in the studied object. Through observation it is possible to gather information about whether people act according to what they are saying. The biggest benefit of the observation method is the immediate, direct information about the behavior of the individuals, groups or organizations. Observation refers to the studying of real world, avoiding the artificiality as much as possible. Observation can be divided into two different types; systematic observation and participant observation. (Hirsjärvi et al. 2000: 199–201.)

Characteristic for participant observation is that the researcher is a participant in the target group's actions. Usually the researcher receives some kind of role in the group, when empathizing to the roles of other participants. The degree of participation can be *complete participation*, or *participant as an observer*. When the degree of participation leads to *complete participation*, the researcher is aiming to be a full member of the group. This might cause some disadvantages, as on one hand the researcher should act normally and naturally and on the other hand the researcher should collect the information for scientific purposes. When the degree of participation leads to a situation where the researcher is a *participant as an observer*, the first thing to do is to inform the other participants of the group about his role as an observer. After this the researcher tries to create good relations with the other members of the group. In addition to participating in the activities of the group, the researcher presents complementary questions to the observed targets. When using observation as a method, it is important to isolate the observations from the interpretations of the observations. (Hirsjärvi et al. 2000: 203–204.)

For the basis of information gathering, a table with different aspects of the structures and processes was used (see table 9). The issues in this table were designed on the basis of the theoretical review and the nature of the research problem. The purpose of this table was to act as a supplementary tool in the meetings, in case the wanted issues and answers did not arise from the conversations. The aspects in table 9 were presented to the participants in the meetings, in order to create a conception to the studied group from the significant factors relevant to this study. In this study, participant observation is used because it gives more freedom to the researcher in interpreting the real world situations and activities. The information based on the more detailed notes is later in this

research gathered into bigger entities. These notes made in the meetings are partially completed by the company's business strategy.

Table 9. Aspects for information gathering.

	Global sourcing committee	Supply management	Purchasing process
Structure	<ul style="list-style-type: none"> • Roles • Responsibilities • Place in the organization • Who belongs to the team? 	<ul style="list-style-type: none"> • Roles • Status • Who is in charge? 	<ul style="list-style-type: none"> • Buyer roles • Responsibilities • Place in the organization
Process	<ul style="list-style-type: none"> • Supplier selection, grounds and evaluation • Supplier performance evaluation • Setting annual targets • Quality demands • Specifications with suppliers • Negotiations with suppliers • Total cost calculation • Strategy planning, establishing, implementing, monitoring • Market research • Coordinating the purchasing in business units 	<ul style="list-style-type: none"> • Supplier relations • Supplier performance measurement • Developing the relation • Single vs. multiple sourcing • Quality requirements • Supplier commitment • Business unit commitment 	<ul style="list-style-type: none"> • Placing the orders • Information flow between sales • Forecasting methods • Evaluation of supplier • Reporting to whom? • Annual targets, e.g. cost savings • Enough information, e.g. budgets? • Materials management • Market research

This table consists of questions and notes from two different aspects; structure and process. The purpose is first to solve the structure of the different functions and operations in the case company. After clarifying their roles and place in organization, this study models the processes these structures include, such as the purchasing and sourcing process. The empirical information was partially collected with help of issues presented in this table.

6. DEVELOPING THE SOURCING FUNCTION: ACTION RESEARCH

This chapter presents the empirical research results, beginning from the introduction of the case company. After the basic information and background of the problem are presented, the current sourcing structures and processes are modeled. These structures and processes are reflected to the intended state of sourcing function and developing ideas are presented to be used by the case company in pursuing towards the objectives.

6.1 Introduction to the case company

The case company operates globally in the manufacturing industry, using sourcing in completing the company's own production. The product group x is one of the key products of the company and as their own production is insufficient to correspond with the demand, some of the products are sourced from third party suppliers. The main suppliers are located in Russia and China. The purpose of the sourced products is to support the company's own production and also to increase the overall sales by searching new markets and customers for the sourced products. The product category x in the case company is categorized as a strategic item according to the classification presented earlier in this research.

There has not been any coordination or controlling over the purchasing of the individual business units, thus every unit has purchased the needed items from different suppliers, with different prices and different quality requirements. A sourcing committee has been created, in order to coordinate the overall purchasing of the product x throughout all the business units in different countries. The goal of the common purchasing procedures, when sourcing product x, is to ensure that the products are bought at the right price from reliable, common suppliers. The centralized, top management sourcing decisions will ease the controlling and monitoring of the corporation wide sourcing. The purpose is to combine the volumes of different business units into one controllable entity.

The coordination of sourcing activities has long been one of the main topics in the company. The company has already attempted the coordination of sourced products in the past. These attempts have been unsuccessful, firstly because of a lack of proper planning, and secondly due to an over-intensive process which has included too many product categories at the same time. With the help of this study, the planning process will get new perspective and depth regarding the sourcing issues. The purpose of the

company is first to concentrate merely on the product group x items, and depending on the success, to expand the coordinated sourcing to other products as well.

There is a lack of common data systems in the case company, although an intranet web system is accessible in every business unit. The data system used is SAP R/3, but there are different versions in use, which makes the coordination and control even more difficult. Every business unit has access to the SAP tool called Advanced Planner and Optimizer (APO) regardless of the version in use. APO has a significant role in designing, forecasting and overlapping the company's own production and the sourced products. The APO system is controlled by the supply chain management. The information fed into this system provides monthly information of the forecasts and the actual deliveries and how the capacity of the company's own production is allocated. The APO system has been developed so that the sourced products are visible alongside the case company's own production. This allows the sourcing committee to evaluate the monthly need of sourced products and to conduct required actions.

The supply chain management will be considered as the whole supply to delivery process, where the supply chain manager in cooperation with the sourcing committee and top management have the responsibility for the make or buy decision. The make or buy decision is made case by case, depending on the customer classification and the end user's needs. In the case company's strategy for the product group x, the customers have been divided into three different segments: segment A, segment B and segment C. The main target is on the segment A and segment B customers, who are offered high quality products mainly from the company's own production. The reason for this is that the segment A and B customers have very demanding end targets for the products, and on the other hand, the best price is received from these customers. Some complementary deliveries are made from the sourced products when the company's own production is insufficient in fulfilling their needs. The focus of the sourced products is on the segment C customers, who operate in the retailing business, with a less demanding end user markets. The goal is to increase the total sales of sourced products to 60% from the overall sales in the segment C customers. In addition to the segmentation of customers, a more specific customer classification is made on the basis of different customer characteristics. The classification includes four categories, which are:

- Category 1; Best class customers with full product portfolio and service.
- Category 2; Customers that will possibly become the best class customers in the future. Full product portfolio is offered.
- Category 3; Customers that are served with limited product portfolio.
- Category 4; Sales depends on the availability of products.

At the moment, the segment categorization and the more specific classification of the customers is rather new in the company. This has led to a situation, where the segments are occasionally competing against each other from the company's own production. This situation is about to change, as the sourced products are positioned to better correspond with the company's own production. The segmentation and categorization of customers have a significant effect to the sourcing and purchasing function. The segments are channeling the sales of the products in cooperation with the supply chain management, which will affect the volumes and procedures of the sourcing function. Comprehensive examination of these procedures is made in the coming chapters. The customer classification is used as a tool when decisions relating to the make or buy are made.

6.2 Current sourcing systems and processes

Current structure

The starting point of the empirical stage is to model the current structures, systems and processes ongoing in the case company and in its sourcing operations. The description of the current sourcing system and processes is based on the meetings and conversations with the top management and the participants in the sourcing committee. The data that will be analyzed is gathered through participant observation and the researcher is involved in the company's sourcing development process. The aim is first to model the current structure of the sourcing and purchasing environment, which is illustrated in figure 10.

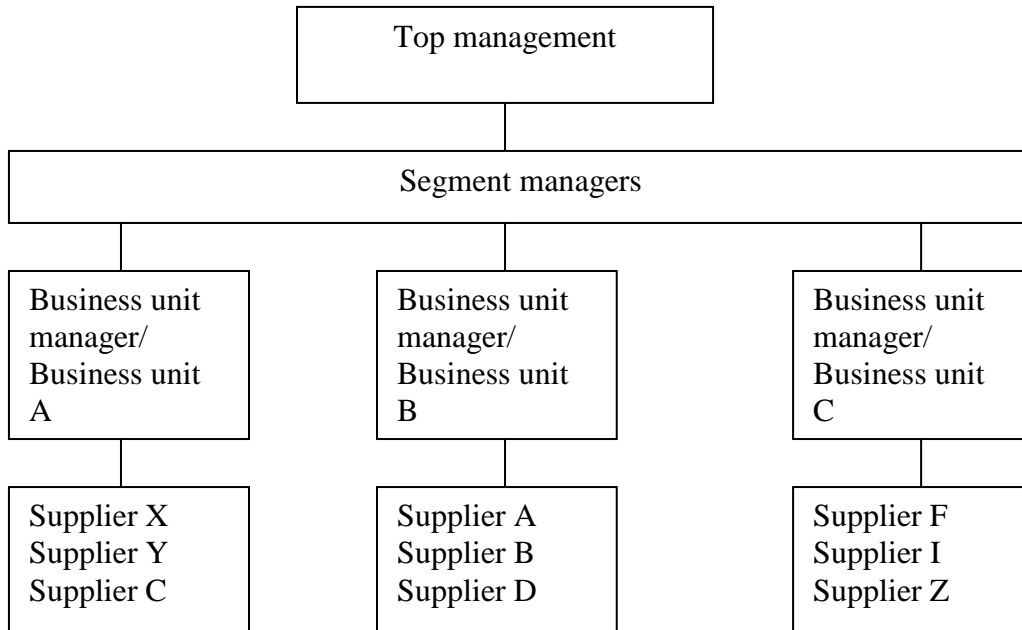


Figure 10. Current sourcing structure.

As can be seen from the figure 10, there is no interaction between the different business units and countries within the company when it comes to purchasing from a third party supplier. The segment managers are responsible for the customer categorization, so that the correct products from own production go to the right customers at the right price, but a comprehensive overlapping of sourcing and the own production is missing. There exists no coordination over the business units' purchasing behavior, which makes the used procedures quite tangled. There is also a lack of information flow from the unit managers and segment managers to the top level management in the sourcing and purchasing issues, which causes the insufficient knowledge of the overall situation of what is bought and where it is bought. Every business unit favors their own, existing suppliers, and they purchase the needed volume individually, unaware of the possibilities in combining the purchasing volumes with other departments which already might be purchasing from the same suppliers. As there is a lack of a common data systems due to the different versions used in the business units, the controlling of purchasing operations becomes very difficult. Gathering the information, that is needed in the top management level of the purchasing behavior, requires a significant amount of time and resources.

In chapter 2.3, the continuum from the domestic purchasing to the integrated global sourcing was presented. At the moment, the case company can be placed on level III,

where the international purchasing exists as part of the sourcing strategy, but there is no overall coordination over the purchasing of the business units. The goal is to achieve the level four in less than a year and level five in two years.

In the current purchasing context, the sourcing function has not achieved its place in the organization. A sourcing committee has been established, and it is placed in the organization chart in the business strategy, but there is a lack of knowledge and commitment in the business units in different countries towards the sourcing function. One important factor enabling successful sourcing is to establish clearly what the goal of the sourcing function is and to present it in measurable and understandable ways to the operational level. This will decrease the resistance in the business units and increase the understanding of the sourcing function's importance.

Sourcing committee

The sourcing committee at the moment includes three individuals and the tasks are divided in three areas. One of the individuals is taking care of the business units' needs in the Eastern Europe and one is taking care of the business units' needs in the Western Europe. Both of the individuals are also responsible of managing the supplier relations, negotiations and the specification making to the suppliers. They also have the responsibility to order the required products and organize the logistics to the stock of a business unit or straight to the customer. The supplier base is rather small, as there are only few suppliers with which the larger, annual contracts are then made. The relation and cooperation with the suppliers is very close, and the case company puts effort on being a reliable partner to the suppliers, and expects the same vice versa. The main focus of the sourced products is to support the own production and also to find new markets in order to increase the overall sales volumes of the product group x. These both individuals are reporting to the vice president of the sourcing committee, who has the overall responsibility for the sourcing operations and is reporting to the top management of the company as shown in the figure 11.

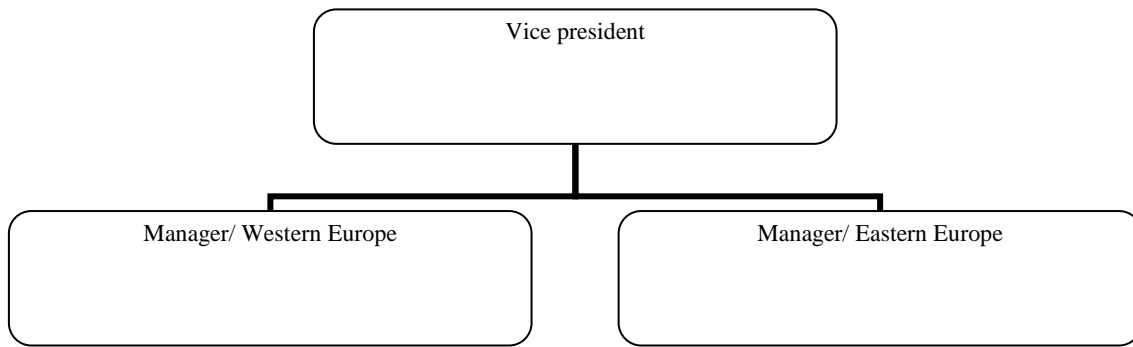


Figure 11. Global sourcing committee.

Current purchasing process

The current purchasing process is performed differently in different units, thus a basic model can be formed that has some similarities between the business units (see figure 12). These processes are planned to be standardized so that the global sourcing committee will carry out the actual ordering from the supplier by gathering the specifications and the requested delivery times from the business units. This process will be presented later in this research. The first impulse always comes from the customer who contacts or is contacted by the sales of a business unit. There is also a possibility that the business unit has a small buffer stock and the impulse comes when the inventory levels drop below the level where the end users cannot be served in the best possible way. The sales then inform the purchasing department and give the specification and the requested delivery time. The buyer makes the purchasing order to the supplier, with requested delivery time and price level. After the delivery and price level is confirmed by the supplier to the purchasing personnel, the information is forwarded back to the sales people who inform the end user. The buyer manages the logistics, material flow and follows up the delivery accuracy. The buyer is also responsible for following the inventory levels so that a good service level is maintained at all times.

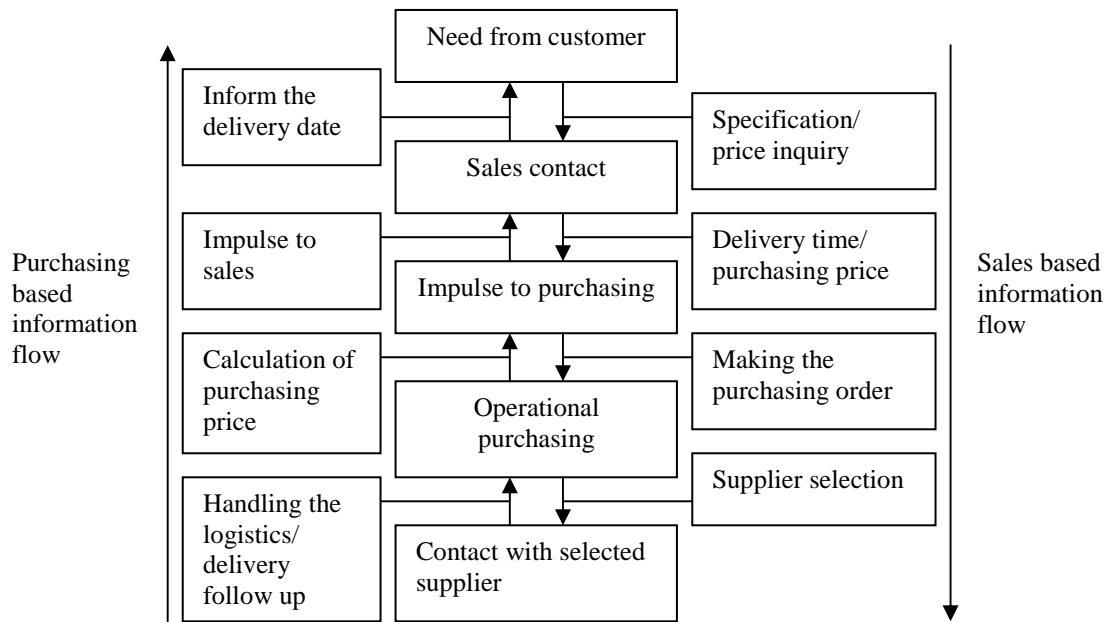


Figure 12. Current purchasing process.

As the purchasing is conducted separately in every business unit, the case company cannot offer the suppliers with big volumes and annual contracts. This will evidently lessen the chances of the company in becoming a reliable and long term partner to the supplier. The benefits of good supplier relationships, with significant purchasing volumes and steady material flow, will result from the coordination and centralization of the supply base management by the sourcing committee. It will also result in better prices and delivery terms, which will ultimately improve the competitive advantage of the company in every market area. In the current process, the decision of purchasing is made inside the business unit. The purpose is to change this so that the decisions made in the supplier selection process and negotiations are conducted by the sourcing committee.

Current supply chain

In the current supply chain, the impulse comes from the end user to the business unit. In spot deals, the buyer of the business unit will make a specification of the need of an end user and make a purchasing order to the supplier. If the impulse is a periodical indicate of the volumes needed for the coming months, a forecasting process is done in cooperation with the end user. After forecasting the needed volumes, a purchasing order is placed to the supplier. The supplier gives the delivery times and manufactures the

products. The delivery is made to the stock of the business unit or straight to the end user. An invoice is placed to the business unit, which will charge the customer at best possible price.

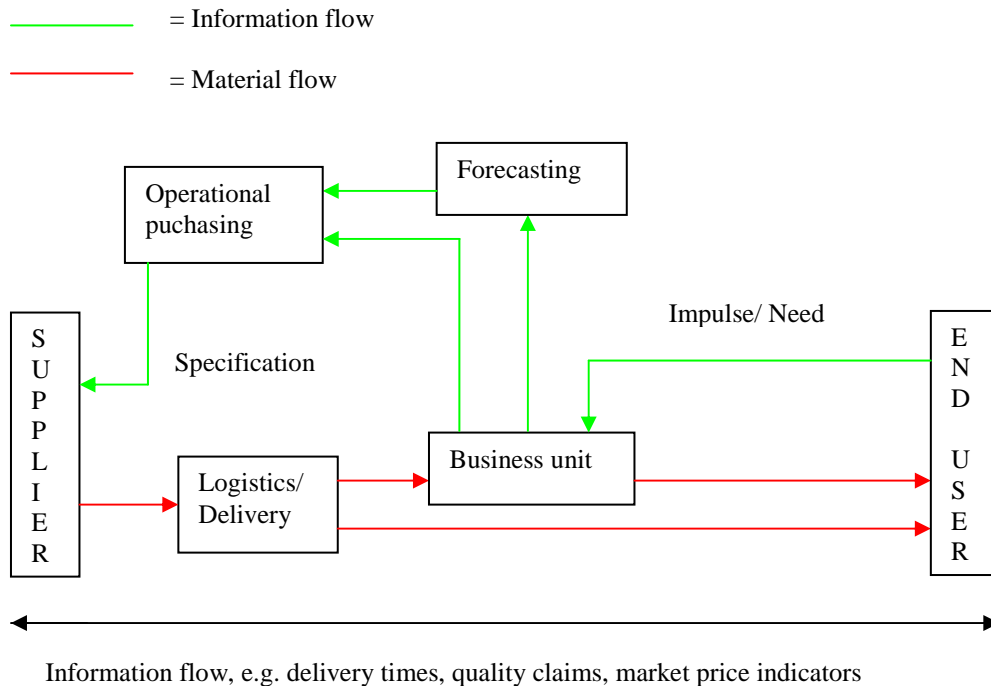


Figure 13. Current supply chain in business units.

The current supply chain does not involve the supply chain management in the process. The supply chain is not organized as wanted, as the decision of sourcing should come from the cooperation of segment managers, the sourcing committee and the supply chain management. In the current supply chain, the sourcing committee is not involved in any stage of the process. The business units operate often with small suppliers, especially when making spot deals. Comprehensive forecasting is missing, as the use of APO is quite minimal. The lack of control over the purchasing behavior of the business units enables varied procedures between the units.

The cooperation between the segment managers, the sourcing committee and the supply chain management include the decisions relating to the make or buy decision, the price negotiations, the customer classifications and the overall planning of the business transactions. The intended supply chain of the sourced products, from the business unit view, should only involve the transaction with the sourcing committee who has the

knowledge of the entity in overlapping the own production and sourced products. The sourcing committee has also the best contacts to reliable suppliers.

Main problems of the current systems

In the case company here is a lack of comprehensive forecasting of the estimated demand in the markets. Coordination does not exist in the sourced products, which can be seen in the mixed field of suppliers between the countries and business units. The business units rarely push the end users to buy sourced products, which ultimately is a necessity in increasing the volumes and in finding new markets for the sourced products. The global sourcing committee is quite subconscious on the business unit level, thus the units will not operate in the way wanted.

The biggest problems referring to the sourcing function were the issues relating to the lack of common infrastructures in data systems, which evidently decrease the level of efficient communications between the participants in the sourcing process. There is also a problem with the business units' different sourcing product portfolio, which is complicating the forecasting and negotiations between sourcing committee and the suppliers. The price levels in different markets are making the settling of the purchasing price very difficult, due to the fact that the supplier sees the company as an entity, not the individual business units operating in different countries. The supplier will probably be quite reluctant in selling the same products at different prices to the same company.

There have been some problems also with the business units' reluctance to trust their purchasing issues to the sourcing committee and on the other hand, finding new markets for the sourced products. The lack of participation in the business unit level, e.g. from the market situations, makes the work of the sourcing committee more difficult, as the entirety becomes more difficult to manage and the required time in settling the changing markets of each country significantly increases. There also exists a lack of systematic, periodical reporting about the supplier performance. The information about the quality and delivery accuracy of sourced products should regularly be gathered from the units to be used in the total evaluation of the selected supplier and also in further development of the sourcing function.

6.3 Intended sourcing and purchasing structures and processes

The intended structures and processes of sourcing are described in the following chapters. The purpose is to illustrate an ideal state of sourcing. The case company should pursue towards these goals, by developing its sourcing function. It is mainly the sourcing committee's responsibility to develop the sourcing procedures, in order to achieve efficient and coordinated sourcing throughout the company. In different phases of sourcing, a significant input is required from the segment managers and the supply chain management. Through good communication and cooperation between these parties, the ideal state of sourcing can be achieved.

Operations between top management and business units

The information flow between the top management level and business units is described in figure 16. The top management level sets the annual objectives for the overall operations. The guidelines and targets are presented to the segment managers, who have the responsibility in fulfilling these objectives by setting the objectives and targets forward to the business unit level. The operational level has the responsibility for the sales and the negotiations with the customers. The performance of the units is followed through the successful execution of the budgets and the target. These are quantifiable measures which make the evaluation more understandable and measurable. The segment managers report to the top management level of the success or failure in achieving the objectives, and based on that the top management will restructure the guidelines when necessary.

It is highly important that the information flow is efficient in both ways of the organization. Information from the changing markets enables the re-evaluation of targets when necessary. Segment managers have the responsibility for classifying the customers. These classifications are the basis of the make or buy decision, thus it is an important tool of the sourcing operations as well.

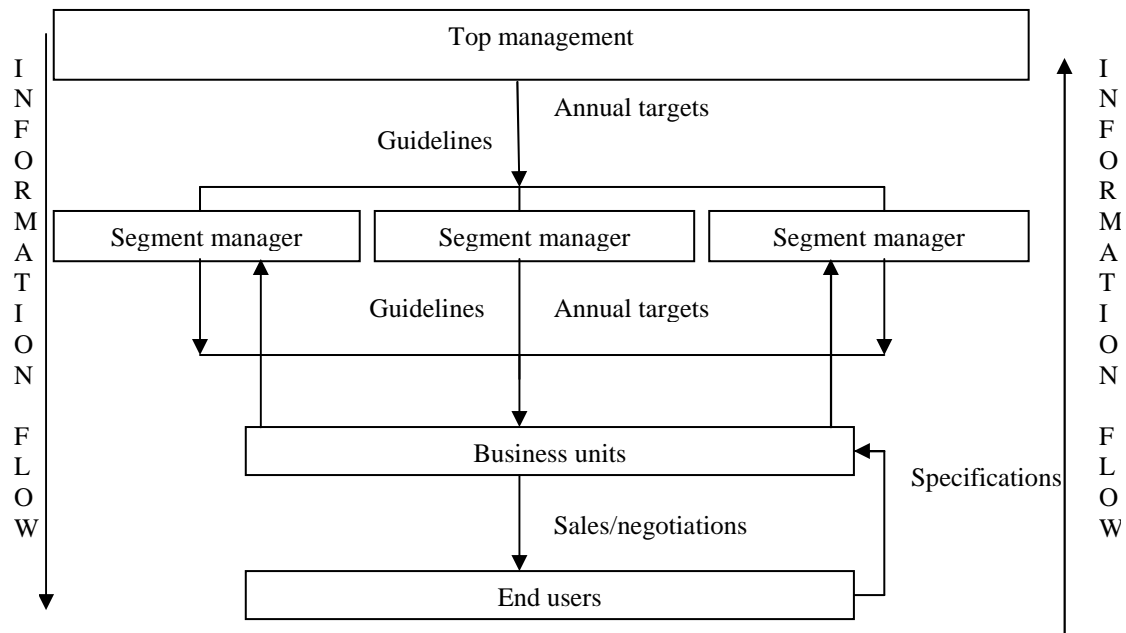


Figure 14. Operations between the top management and business units.

Intended sourcing structure

Based on the customer categorizations presented earlier, the global sourcing committee, the supply chain management and the segment managers of the case company will make the decision between the own production and sourcing, and what kind of products will be offered to certain customers. The structure is described in figure 14. The global sourcing committee should coordinate and cooperate with the supply chain managers, the business units and the suppliers. The purpose is in making all the purchasing operations and related activities more controllable, as the decision making is centralized and all transactions with the suppliers are managed by the sourcing committee. On the basis of the cooperation between the segment managers and the supply chain management, the make or buy decision is made, which then is brought into the knowledge of the business unit who has the need from a customer. The make or buy decision is also informed to the sourcing committee, which in case of the buy decision, will do the necessary operations.

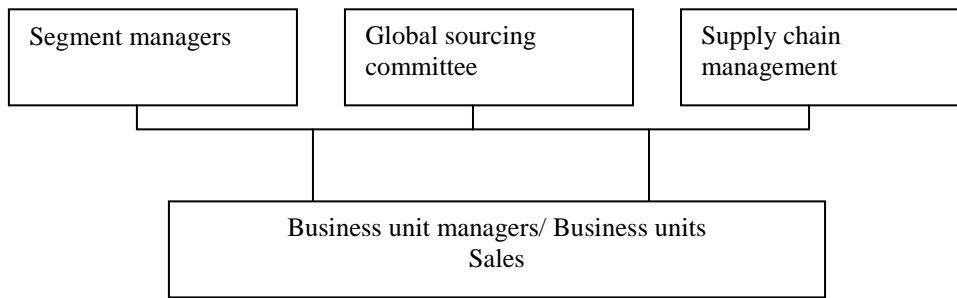


Figure 15. The intended sourcing structure.

Intended sourcing process

The intended sourcing process is presented in figure 15. It is a combination of already existing structures and those operations that will be connected to the sourcing operations in the future. This process can be adapted mainly to the forecasting process as well as to the spot deals made. The difference between the forecasting process and the spot deals is that the APO and the make or buy decisions are not always valid when making spot deals. The forecasting process requires more planning and resources, whereas the spot deals are more rapid processes where the products are purchased to fulfill the contemporary need of the customer. The purchasing process relating to the spot deals is illustrated in figure 18. In the forecasting process, the specifications are made for a longer time period, which will be reworked into more accurate information when the delivery time approaches. The objective is to make as accurate and high quantity forecasts as possible, in order to make the sourcing committee's negotiations with the suppliers easier. It also enables a long term planning of the relation between the own production and the sourced products.

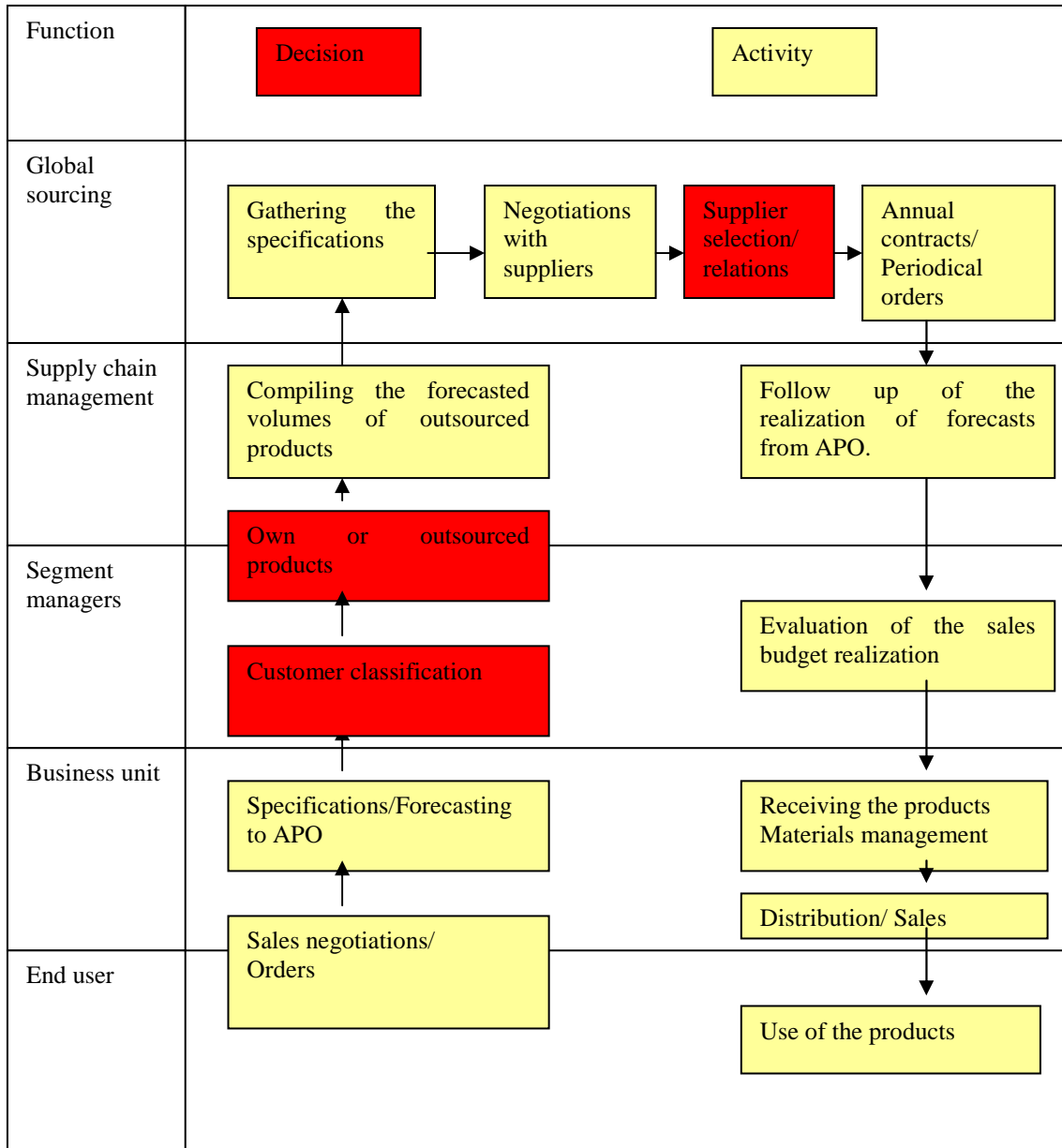


Figure 16. Intended sourcing process.

The sales forecasting is made by the business units in cooperation with the end users of the customers. When the deals of the coming volumes are made, the information is fed to the APO system. The APO system includes e.g. the name of the customer, the product group and quantity. The segment managers classify the customers due to the principle presented earlier in this study, and based on that, the allocation of the volumes between the company's own production and the sourced products are decided with the supply chain management. The make or buy process is taken into closer observation in figure 17. The supply chain management gathers the specifications and volumes of the

sourced products, which are then informed to the sourcing committee. The sourcing committee compiles all the specifications together and based on the information, negotiates with the different supplier options. The best possible suppliers are selected and the agreements include overall annual volumes that will be purchased. The sourcing committee forwards the orders of the business units to the supplier and confirms the delivery times and the price level. The supply chain management continuously follows the realization of the forecasts made by the business units and the segment managers. The segment managers are responsible for following the realization of sales the budgets. The budgets are made separately to the sourced products and the own production. These budgets are compiled together as an overall sales objective. This information is highly relevant when evaluating if any deviances in the volumes of certain customers exist compared to the earlier years. This will obviously alarm the segment managers to examine the reasons of the decreased volumes, thus any surprises e.g. by the competitors can be avoided. These processes will result in a competitive advantage through a better service level and reliability experienced by the end user of the products.

The decision of whether the business unit is selling the company's own products or the sourced products depends from the end user's needs and applications as well as from the classification of the customers. The segment managers in cooperation with the supply chain management are classifying the customers based on the four fields presented earlier in this research. Based on these classifications, the segment managers communicate the decisions relating to the customer classifications to the business unit level as well as to the sourcing committee. When the business units have a complete understanding of the customer classification, substantial savings in time and resources can be achieved as the business units then have the knowledge to make some of the decisions by themselves. The time saving arises especially in the spot deals, where the knowledge of which products, own or sourced, can and should be offered.

The make or buy decision

The make or buy decision is based on the customer classification and on the capacity of own production (see figure 17). In case of the insufficient capacity in company's own production, the priority one is to maintain a good service level to the category one customers. As a result, the customers in other categories are served through sourced products. When the decision of the volumes for the sourced products is made, the specifications and price indicators are discussed between the supply chain management and the sourcing committee.

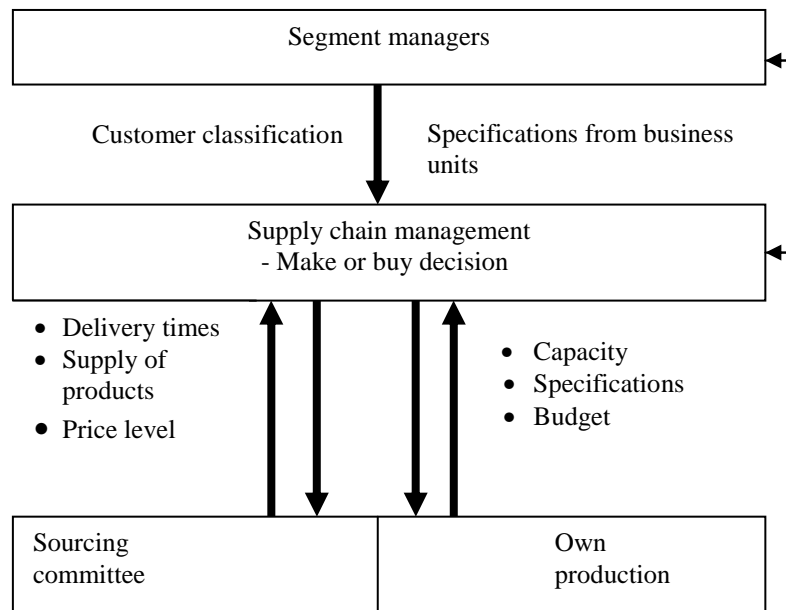


Figure 17. The make or buy decision process.

The make or buy decision is communicated to the business units, which will then have renegotiations with the customers if necessary. The specifications will be tabled and fed to the SAP system, more specifically to the Advanced Planner and Optimizer (APO) system. This will overlap the sales and capacity bookings of both own production and the sourced products. These processes occur mostly when the annual or quarterly forecasting is made, although some of the operations exist also when making spot deals.

Intended purchasing process

When the decision of sourcing is made between the supply chain management, the segment managers and the sourcing committee, the decision is communicated to the business unit level, where the actual purchasing process is then conducted. The process does not involve directly the supplier, as the sourcing committee forwards the specification to the supplier and negotiates the prices and the delivery times (see figure 18). This process occurs in both longer term deals and spot deals.

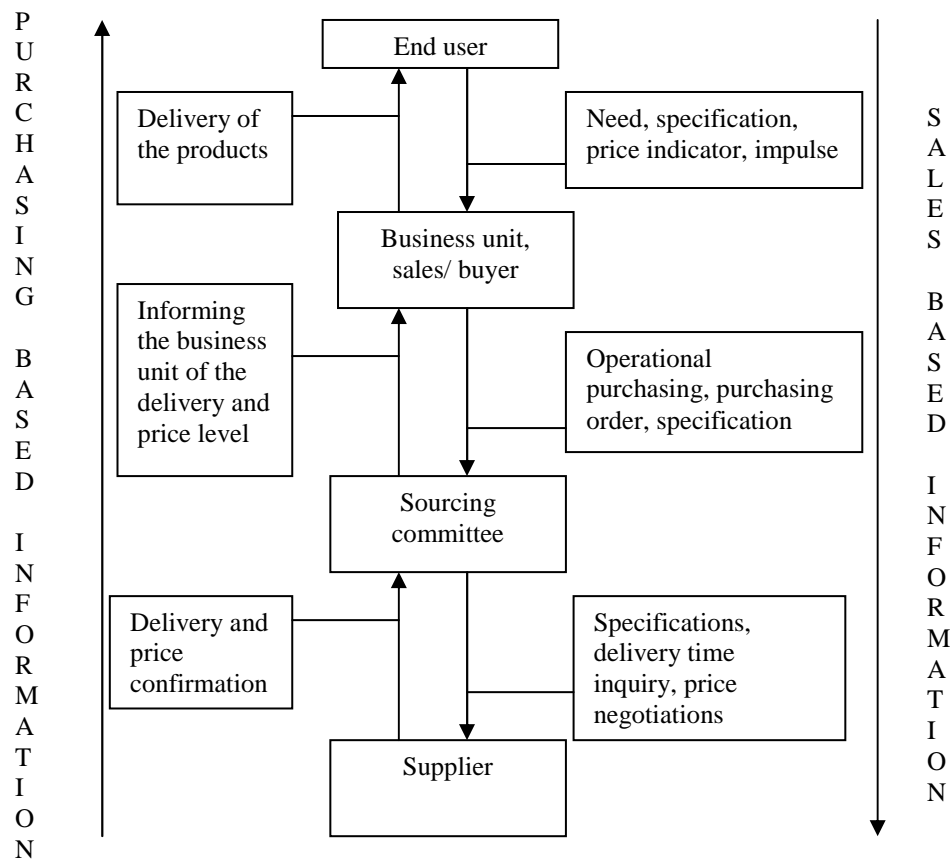


Figure 18. Intended purchasing process.

In the aimed purchasing process, the business unit inquires from the sourcing committee the possibilities to deliver the needs of the customer. This need/impulse can be either a contact from the customer, or a sales deal made by the business unit. The business unit sends the specification in form of a purchasing order to the sourcing committee, which will then contact the supplier and conduct the necessary inquiries and negotiations with the supplier. The information returns back to the business unit with a delivery time and price level agreed with the supplier. The business unit then forwards the information to the customer and makes sure that in case of any inconveniences with the delivery, the end user is always aware of the changes. These processes occur after the make or buy decision, when the decision of sourcing the needed products is made.

The difficulty arises from the fact that the units aspire to adhere with the old procedures and are sometimes quite reluctant to use the sourcing committee in the process of purchasing the needed product. It is still a rather new function in the organization, thus

the old procedures can be obliterated by improving the communications that enable comprehensive information of the reasons and objects of the sourcing function.

Intended supply chain

The intended supply chain starts from the supplier and ends to the customer. The difference between the current and intended supply chain is that the sourcing committee is between the business unit and the supplier. There also exists a common buffer stock, which can be used to storage the sourced products of those countries that do not have their own storage possibility. The cash flow occurs between the sourcing committee and the supplier, which in practice means that a certain country where the sourcing committee is located, makes a written agreement with the supplier and the cash flow takes place between these two parties. The sourcing committee then forwards the invoicing to the business units, who will charge the end user at the best possible price.

A centralized agreement is made in order to improve the negotiations position relating to the price and delivery terms. This general agreement includes the estimated overall volumes, which then can be separately used by the units located in different countries. The logistics is in most cases managed by the sourcing committee, although it also can be handled by the business unit if any cost savings arise from this kind of procedure. The sourced products can either be delivered straight to the customer, or via warehouse from where the distribution is managed by the business unit.

The impulse and need to the business unit comes from the customer. The make or buy decision is made after this impulse and the decision to buy from a third party supplier is made when necessary. The decision of sourcing the required products is made as described previously in this research and on the basis of that, the business unit will send the inquiry to the sourcing committee. This inquiry includes the specification of the products and questions relating to the delivery time and price level. The sourcing committee negotiates with the supplier, and as a result makes the deal which is then informed to the business unit. The intended supply chain is described in figure 19.

In order to gain competitive advantage and improve the service level from the customer point of view, the information flow needs to be efficient, continuous and work in both ways. The messages sent inside the supply chain need to be clearly stated, so that there is a comprehensive understanding between the different participants in the supply to delivery process.

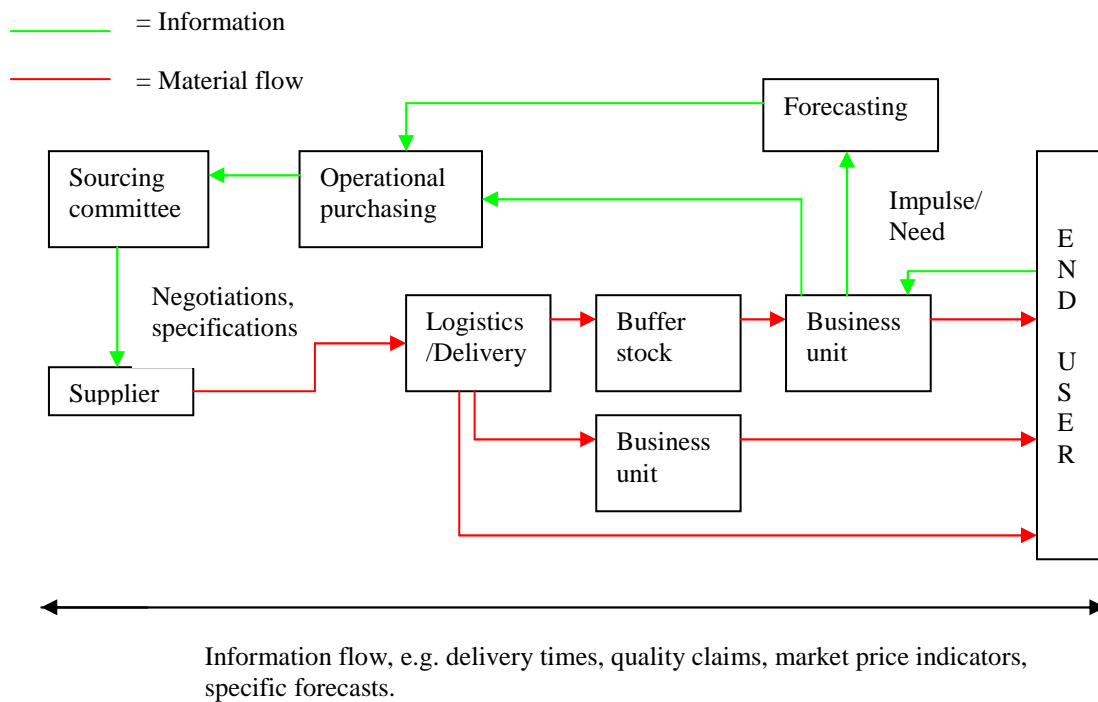


Figure 19. Intended supply chain.

There is also the possibility that the business unit orders the products to their stock in order to keep a good service level for the end users who order smaller volumes, not full truck loads. The inventory levels need to remain on the level that has been budgeted in the beginning of the year. There might be situations where the units overestimate the demand in the markets. In these situations, the cooperation between the business units is important and the inventory lists should be sent to other units in order to transfer the already bought products to the low level inventories. This way the overall capital tied to the products already sourced by the case company does not increase through new purchasing.

What is the difference?

When developing the sourcing operations from the current towards the intended processes, the biggest change arises from the centralized coordination of purchasing. As the sourcing committee is placed in between the business units and the suppliers, transactions with the suppliers are managed by the sourcing committee. The supply chain management, the segment managers and the sourcing committee make the decision of whether the products are delivered from the company's own production or

sourced from a third party supplier. The autonomy of an individual business unit is decreased in order to achieve coordinated, common procedures of purchasing the needed products from certain, predetermined suppliers. When sourcing is centralized, it also enables better monitoring and evaluation of overall purchasing operations.

Larger contracts are made so that the company can be a reliable, long term partner to the suppliers. It is the sourcing committee's responsibility that the needed products are delivered on time, with a competitive price and quality. The business units are pushed to make continuous market research relating to price levels, potential customers and to develop the relations with important end users. The business units are also pushed towards the new procedures of sourcing, by making strict sales budgets for the sourced products. Forecasting is taken into a new level through the APO system which enables an efficient overlapping of the own production and the sourced products. The customers are classified separately, sourced products focusing on the segment C customers. The sourcing committee is involved in every purchasing transaction concerning the product category x.

6.4 Developing the sourcing function

As there is a visible gap between the current and the wanted conditions of the sourcing function in the case company, the purpose is to develop the activities so that the wanted conditions can be achieved. This requires well-defined, practical procedures and processes which are thoroughly understood among the participants involved in this case. The development includes the management level as well as the operational level, which ultimately puts the efforts of planning into the practice and has a significant input to the overall success in the sourcing business. The sourcing function should be presented to the business unit level, so that the personnel in units will become aware of its existence. The individual buying of business units is difficult to close down, if there is no knowledge of the correct and changed procedures of sourcing.

Purchasing product portfolio

Because of the lack in the common data system due to the different versions of it, the first step is to collect the information relating to the purchased items from the business units. This information should include the essential attributes, the average price paid and the name of the used suppliers. The information is then gathered together by the

sourcing committee and the segment managers. This will create comprehensive information from the business units' purchasing behavior, which is then easier to change into the direction of global sourcing where the decision making is centralized. The specifications and volumes received by the global sourcing committee will give guidelines and aid in making the annual agreements with the selected suppliers. Finding similarities in the specifications of different units and the formation of product portfolio of the sourced items, enables the possibility to widen the sourcing operations to other products in the future.

Using the APO in the future regarding sourced products will increase the knowledge of the main products used in different countries. Based on this information, more specific volumes and specifications can be presented to the suppliers when negotiating new contracts. Creating a product portfolio will also aid the supply chain management in evaluating the make or buy decision. Some products are more economic to manufacture in the company's own production than to source from a third party supplier.

Justify the new procedures

Next step is to clearly state the objectives of the sourcing function, with well-defined annual objectives and justifications of the reasons to use the sourcing committee in sourcing the products that have earlier been purchased individually by the business units. When clarifying the objectives, it is important that the personnel in the business units understand the overall meaning of this kind of procedure, so that they are willing to relinquish the old, existing purchasing operations. The importance of forecasting is highlighted by emphasizing the significance of using the Advanced Planner and Optimizer (APO). The wanted process of purchasing is presented to the participants of the purchasing function (see figure 18), so that the inquiry, in case of any needs regarding product group x, is made correctly to the sourcing committee.

As the supply chain managers in cooperation with the segment managers and the sourcing committee make the decision of sourcing the products case by case, the old way of thinking, where the purchasing personnel buys what the sales want to sell, needs to be terminated. It should be recognized by every participant in every country and in every unit that the decision, whether the customer is offered own or sourced products, is decided by the previously mentioned levels. It can be said that the supply chain decides what the sales personnel is selling. Even if this decreases the autonomy of the decisions made in the business unit level, the commitment to the business operations can be

achieved by listening the units' messages and on the other hand, using the cross-functional teams in the decision making process.

Rigorous market research

It is on the business units' responsibility to actively find new markets for the sourced products. At the same time, one significant activity in the business unit should be the continuous research of the market situations, especially the price level changes and the overall demand situation. The information wanted from the markets should include the overall demand conditions, competitors' business operations and the price level investigations. If there is a lack of competence in making comprehensive market research by the business unit, the guidelines and support should be offered by the management level. The information that is collected from the markets should be regularly reported to the sourcing committee.

Use the intranet

As the case company has a common intranet in use, the sourcing committee should establish a page where the current agreements with the selected suppliers are described (see figure 20). This site will be considered as an information bank about the issues related to sourcing. The information should include the focal issues from the contracts. On this page, there are also the prevailing delivery times to each country, the overall availability of the products and some general notes about the price level and quality issues. Establishing a page like this, the access to the essential information is ensured, thus it is easier to the personnel in the business units' to operate more efficiently, and it releases the resources of the sourcing committee from a continuous coordination to other tasks.

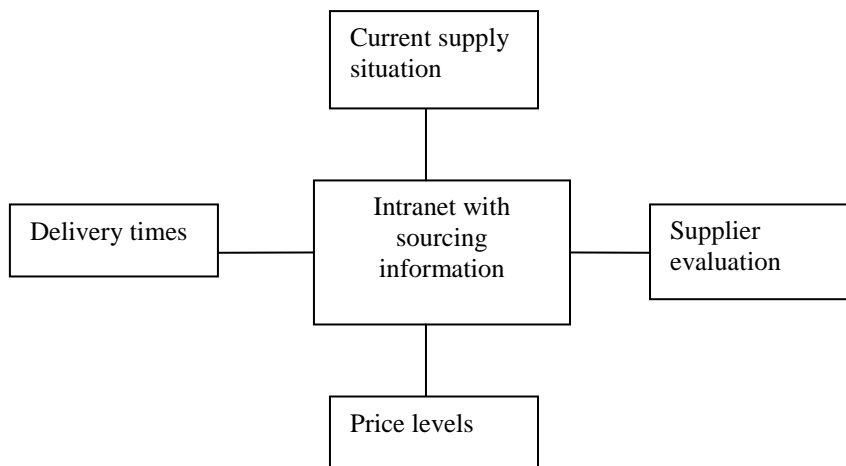


Figure 20. The structure of intranet.

The supplier evaluation forms are in the intranet, available to be used by the units. As the information is collected with a common questionnaire, the data gathering is easily rendered. A table that includes the focal issues, such as the delivery accuracy, the quality of the products, the delivery times and the competitiveness of the price levels, should exist. The table should be filled up periodically, for example twice a year. This information can be used by the sourcing committee in the negotiations with the supplier, as well as in developing the supplier relations. The feedback of the supplier performance is also essential when evaluating the need of searching new, optional suppliers.

Create a well planned sourcing strategy

The global sourcing strategy should be closely linked to the case company's business strategy, as a supportive and complementary asset which can improve the competitive advantage. A comprehensive planning in overlapping the own production with sourced products is a challenge that should result in improved customer service. It should be noted that in the end, the fulfillment of the customer needs is the priority one to be considered. The careful categorization of products and the customers, so that these aspects correspond with each other, is vital to any business. The end user has to be listened and the solution for the need is aspired to by carefully evaluating the decision of whether to make or buy the products offered to the end users.

The sourcing committee should establish a written sourcing strategy, adapted according to the business strategy. A written sourcing strategy will make the operations visible, so

that the understanding of and commitment to the goals and objectives will become more concrete and thus easily achievable. As well as the acceptance of new procedures, the commitment of the business units in different countries will increase the motivation to find new markets and customers.

Well defined targets

Creating well defined targets will ensure that the operational level works towards a common goal of global sourcing. Objectives are set by the top management and presented to all participants of purchasing operations in the company. These objectives need to be measurable, such as cost savings, inventory level budgets, stock turn time, number of new customers and sales budgets. Whenever needed, the top management must be ready to adjust these targets in the changing markets. As successful global sourcing can significantly improve the service level of the case company, the targets should be adjusted accordingly. Targets that are achievable but demanding will result in efficiency and commitment by the personnel involved in purchasing operations.

7. SUMMARY AND CONCLUSIONS

As organizations today are continuously looking for new ways to achieve competitive advantage, global sourcing is becoming a key strategic element to be considered as a part of the business strategies. The development towards an efficient and successful global sourcing function has to be started from the grounds of procurement operations. The foundations are built through consistent global ways of actions, related processes and decision making in purchasing, supplier selection, and supply base and supply chain management. The essential factor in standardizing the methods of work is the top management's commitment, comprehensive planning and monitoring of all sourcing related transactions. The sourcing concept in this study was examined through global sourcing as a significant part of the supply chain. The purchasing process is the execution of the global sourcing decisions which are centralized to the global sourcing committee.

The objective of this study was to examine the existing versus the wanted sourcing and purchasing structures and processes of the case company. The study began with a comprehensive theoretical review based on the earlier research and literature of the issues relating to sourcing and purchasing. The purpose of the theoretical review was to provide a comprehensive framework for analyzing and understanding the empirical findings from the case company. After the theoretical framework was built, the current structures and processes relating to the sourcing and purchasing activities in the case company were modeled. The lack of coordinated sourcing operations was found in the purchasing behavior of individual business units. The information flow is not arranged in a way that enables efficient, controlled supply to delivery process with an accurate forecasting process. The next step was to create the intended models from the structures and processes that can be coordinated by the global sourcing committee in cooperation with other managerial levels. After modeling these two different situations, some suggestions in order to narrow the gap between the states were presented. As a result, these developing suggestions were presented to the top level of the case company, which approved them as workable methods that need to be improved in the future.

It should be noted that this study has a different approach to the sourcing issue than most of the earlier research, as this study concentrated on the sourcing of finished products. As the information used in this study is collected from one company only, it is very difficult to make any generalization from the results received. On the other hand,

the goal was rather to examine this one case and find solutions for the needs of the case company than to create sweeping statements about the issue.

7.1 Critical success factors

Efficient information systems in global coordination and cooperation are critical factors in managing the global sourcing and purchasing activities. The information systems should include high developed technological databases and common operating systems. As the decisions relating to the global negotiations and the agreements with the suppliers are centrally made, the information included in these contracts needs to be clearly communicated thorough the business units on a world wide basis. Even if the decision making is centralized, the operational activities are best managed and executed at the local level. Occasionally using cross-functional teams in the decision making will fasten the flow of information and increase the knowledge of the advantages gained through global sourcing. Efficient information systems will also assist in overlapping the company's own production and the sourced products.

The throughout controlling of the supply chain beginning from the supplier and ending to the distribution of the products, requires substantial amount of fluent information flow from every participant in the supply chain. Sourcing should be recognized as a key function in both the supply chain management and in the company's value chain. It should be recognized as more than just a cost reductive function, as properly organized global sourcing can significantly add value to the organization's other functions and to the end user of the product.

The global sourcing function was suggested to act as a coordinator combining the volumes and products that the different business units are purchasing individually. The global sourcing should be strategically oriented operations and decisions which are made in cooperation with the other managerial levels of the company. The supplier selection and negotiations are the keys to gain competitive advantage with the sourced products through reliable deliveries and the competitiveness of the prices. In the coordination of purchasing operations, cross-functional teams and committees should be used in order to improve the information flow through the business units located in different countries. The choice of global sourcing is not a result of one factor, but a sum of several considerations.

The development from an international purchasing towards coordinated global sourcing is a process with several changes in the procedures and structures of an organization. When the individuals operating in the organization confront changes, there always exists resistance towards the new operation model. In this study, the authority of the business units is decreased when it comes to deciding the purchasing issues. The decision making is centralized in the future, which will evidently cause resistance on the operational level. In order to decrease this resistance, support and commitment from the top management is highly critical. When the top management can justify reasons behind the changes and act accordingly by these statements, it will fasten the implementation of the new procedures.

In the intended model and processes, the business units become internal customers whose needs are served centrally by the sourcing committee. This situation is coordinate to the process that occurs with the products from the case company's own production. The problems that the changes in the structural and procedural operations incur arise from the lack of commitment on the business unit level. These problems are avoidable when the global sourcing committee has clearly expressed goals and objectives, which benefit both the company as a whole and the business units in different countries. It is extremely important to have a well defined sourcing strategy which includes these goals and objectives as well as the steps to be followed in all purchasing related processes. The relation between the sourcing committee and the business unit level can be improved through the continuous dialectics between these two parties. It is extremely important that the expectations and needs of the business units' are heard.

The intended processes, comprehensively modeled in this research, increase the mutual understanding of pursued purchasing procedures. These models help the personnel in business units to understand their function in the context of sourcing and act accordingly. This will increase the efficiency of purchasing process, which will ultimately add value to the end users. The processes can be developed towards right direction when the analysis is first made from the current processes. After finding a possible gap between the current and the intended state of sourcing, problems and deficiencies become visible and thus more concrete to manage.

Customer classification is the basis of sourcing process. It is extremely important to have systematic, comprehensive customer analysis. Based on the analysis, the customers are classified firstly to segments and then more precisely to categories. This

categorization has significant influence on the volumes and products that are sourced from third party suppliers. Customer classifications also affect the make or buy decision. When classifying customers, it is important that the business units are conducting rigorous and continuous market research. As the case company operates in several countries, the personnel operating in these countries have the best conception of market situations, thus they have the knowledge to make comprehensive analysis of existing and potential customers.

Supplier selection process is a highly important part of successful global sourcing. Finding a reliable, long term partner, able to fulfill the needs of the end users and the purchasing company with high quality products and on-time deliveries, is a critical element to gain competitive advantage. The case company should aspire to be a reliable, long term partner by managing the partner relations with the required severity. The transactions with the suppliers are managed by the sourcing committee, which aims to create a confidential relationship with the selected suppliers.

7.2 Final implications and future research suggestions

This study aimed at answering the following questions: *“What are the current purchasing structures and processes? How can these processes be developed in order to achieve the intended state of sourcing?”* As a result, the current state and processes of the sourcing function were described according to the meetings and conversations with the top management. These structures and processes were accepted as correct information by the case company. It was discovered that the current processes and structures need to be changed in order to successfully implement the business strategy made for the coming years.

The confusing purchasing behavior of the business units is standardized through the next step which was to create the intended models and processes on the basis of the information the researcher received from the literature and earlier research and from the meetings with the company's representatives. The models made take also the company's business strategy into account, so that the processes are in line with it. In the intended models, emphasis was on using the sourcing committee when purchasing product x from third party suppliers. Another significant factor was the role of supply chain management responsible for the overlapping of the company's own production

and the sourced products. The supply chain management has also a significant role in the make or buy decision making.

The intended processes include the sourcing committee as a significant factor in coordinating and intensifying the overall purchasing of the company. The competitive advantage through the sourced products is highly dependable in the successful actions carried out by the sourcing committee. As a result, a gap was found between the current and the intended state of the sourcing function. To narrow this gap, the research suggests developmental ideas (see table 10) to be conducted in the future, in order to achieve the ideal, intended stage of the sourcing operations. These developing suggestions can partially be generalized, although these are based on the information and results received from one company only.

Table 10. Developing the sourcing function.

Objective	Implementation
Common product portfolio	Gather the specifications from the products that the business units are purchasing from third party suppliers.
Intense use of Advanced Planner and Optimizer	Requires controlling from the management level in order to receive the forecasts on time. Controlling the realization of forecasts.
Continuous market research	Push the units for rigorous and continuous market research by setting clear objectives and requirements.
Intranet as a tool	Create a section to the intranet with well defined, overall information from the sourcing operations.
Global sourcing	Justify the reasons in using the sourcing committee in sourcing operations rather than the individual business unit purchasing.
Cross-functional teams	Use different parts of the organization in decision making in order to achieve variety to the viewpoints.
Good communications	Improve the information flow through open communications and by using the intranet.

This study has concentrated on the global sourcing issue as a developing process from international purchasing towards integrated global sourcing. As the main point has been to describe and model the current and future processes of one company, it leaves many different suggestions for the future research in the area of global sourcing. It would be interesting to review more precisely the relationship between the global sourcing committee and the business unit level, by for example studying the different conception of the benefits and disadvantages when moving from international purchasing towards global sourcing. It would also be interesting to examine whether the global sourcing operations have resulted in quantifiable measures. The results expected by the companies usually refer to financial savings when making the sourcing decision and it would be interesting to see whether these savings are actually achieved.

Furthermore, it would be useful to examine the effects of global sourcing to the changes in human resources on the business unit level, for example the contribution to the global sourcing efforts. There are several studies that address similar factors required in successful global sourcing. Very limited research has been made on the factors that cause the failure of global sourcing efforts. It would be interesting to study the possible similarities found in unsuccessful global sourcing projects and examine the reasons and answers to these factors.

Most of the earlier studies relate to different guidelines and patterns that should be followed when conducting global sourcing issues. A future research of a comprehensive implementation process with detailed steps of the development towards global sourcing would relieve many organizations' struggles in executing the global sourcing strategy that is continuously increasing its popularity among multinational corporations. It can be said that the sourcing committee in this case is selling sourced products to the business units and thus it would be interesting to study what effects this kind procedure has. It would be interesting to study how does the personnel in business units experience this kind of an arrangement and is it possible to define the units as internal customers.

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