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Supply chain management and logistics issues in retail industry

Case study: Company X, Sweden

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The globalization of the commodity market for goods and services, as well as revolutionary changes in information technologies require clarity of material flow as the main requirement for mandatory continuity of business processes.

As practice shows, there is a significant reduction in economic effects observed of supply chain management (up to 30% of the annual turnover) due to such disturbances as the product damage and theft of goods, transportation systems collapse, breaches in the financial flows, as well as lack of coordination in supply chains (range demand mismatch in production and procurement). The current trend of understanding the effectiveness of supply chains characterizes by a high level of economic efficiency and the necessary level of stability.

Inventory management and transportation are key logistics functions, which constitute approximately of 80 to 95% of the total logistics costs. The main reason of the high logistic expenses is slow development of infrastructure, backlog in application of up to date transportation technologies, storage and packing of the goods. Need of these problems solution defines the importance of carrying out research in this direction.

Nowadays there are significant untapped reserves for increasing the efficiency of supply chains and transportation and inventory management. With the help of this paper, author tries to uncover hidden nuances of SCM and logistics and describe how their efficient integration into the Company X activity affects the level of profit and customer satisfaction.

Thus, the purpose of this thesis is the justification of methodical provision and development of recommendations on SCM and logistic chains management which allow raising their efficiency.

Key words: Supply Chain Management (SCM), Logistics, Retail, Vertical integration, Warehousing, Warehouse Management System (WMS).

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1 Introduction

In the conditions of market economy any enterprise is compelled to take care of the competitiveness. The one, who constantly aspires, can achieve success in a competitive fight only by satisfying inquiries of the consumer as much as possible. The enterprise main task becomes: steady production quality improvement and maintenance of reasonable price level.

Despite many commendable rationalization efforts over the past decades in order to keep distribution costs at the same level, they are still rising. There are several rational reasons for this undesirable trend. The whole distribution system has become more complex. Through internationalization, distances between manufacturers and consumers increasing. Product range has been expanded. The products have become more short-lived. Goods distribution costs and service requirements at this background are most actual problems nowadays.

Relevance of the chosen theme lies in the fact that the quantity and quality of products and services is a key to the competitiveness of enterprises. This means that resource savings and improved production efficiency, guarantees secure products and services to human and the environment.

Strengthening of positions in the competitive fight depends today not only on the quality of production, but also on the quality of supply chain management (SCM). The improvement of SCM is one of the main factors of increase of the company's sales levels. In order to gain and hold the place in the market, companies have to be constantly concerned about raising product supplements while reducing the price. This can be achieved only by introducing modern methods of delivery chain improvement. All this determines the relevance of the chosen research topic.

In addition, increased claims on the distribution system from below: Consumers have become more powerful. Their needs and will change faster than before. This requires that the companies to find the exact product they want at the right time and in the right amounts.

In order to satisfy customers and at the same time manage finances companies put at a high price to availability - neither too little nor too much. This means that the distribution system must operate both more flexible and more efficient.

1.1 The aims and purposes of the study

The purpose of this project is to analyze and identify a development of Supply Chain Management in the Company X as well as the emphasize theoretical frameworks, which could develop supply chain presentation particularly in terms of delivery level and logistics costs in the prospect.

To achieve the goal it is necessary to solve in the following tasks:

- To expand the theoretical foundations of SCM in the company;
- To provide the general description of the company;
- To examine concepts such as product as supplier choice and delivery methods;
- To define the problem of the SCM in the current case and the factors influencing its formation;
- To analyze the logistic processes within the company;
- To analyze the external environment of the enterprise to obtain the best results of the planning process;
- To settle and develop a proposal on improvements in SCM in the present company
- To estimate possible results from implementation of the proposal.

The eventual goal of this thesis is to provide the management of the Company X with the suggestions and proposals regarding weak points in the SCM and where is it necessary to concentrate efforts with the aim to reach preferred performance of the supply chain.

1.2 Study design

This paper consists four chapters. The first chapter answers the question “Why this paper is written” and “Which topics must be examined to aim the goal of the study?”

The second chapter presents theoretical bases of Supply chain management in Retail business. This chapter based of relevant studies of leading scientist in economy, finance, marketing and management areas.

The third chapter describes the key components of Retail and Logistics. The main components identified are: transportation and warehousing.

Chapter four deals with the practical part of the work and consists seven subsections: first and second briefly introduces to the Company X, its background and organizational structure.

Third and fourth parts deal with description and analysis of Company X supply department.

A fifth and sixth part identifies the main problems of the supply chain and improvement suggestions on Company X's development activities are given. They are based on the analysis and evaluation of findings in previous chapters.

In part seven, on the final stage, a concluding review and summarized results are presented.

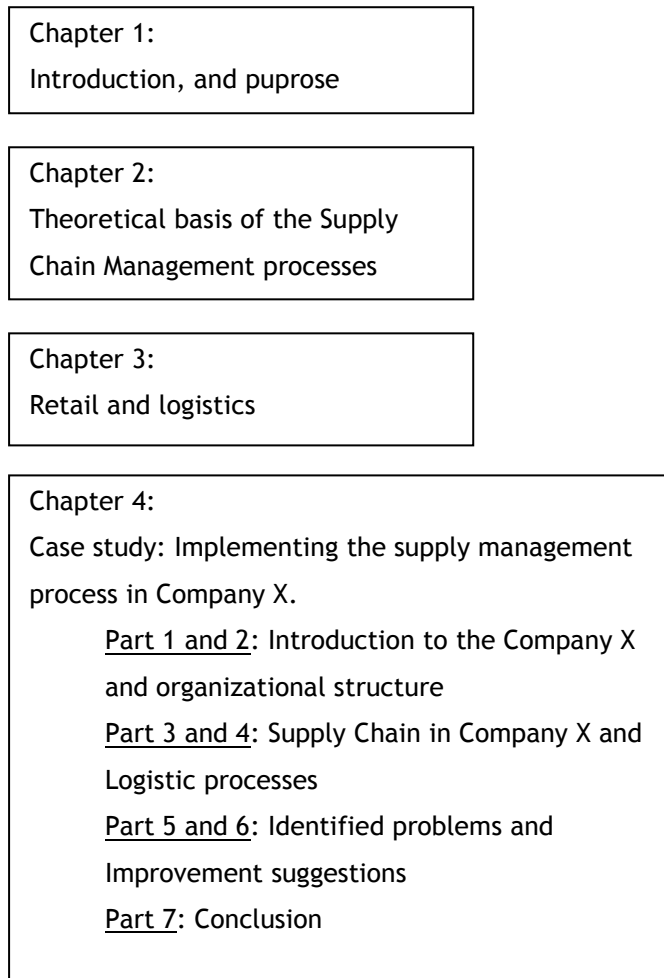


Figure 1: Outline of the thesis

1.3 Scope and delimitation of the study

In order to delimitate the study of the topic there is a need to set up a clear focus of research. Even though the Company X is one of the leading providers of materials for building and auto details with competitive prices in the whole Nordic region, the coverage of this thesis is Sweden. Sweden is the country of origin of Company X and it has its headquarter located in Linköping, where the product assortment policies were created and implemented.

The logistical part of this work concentrates on the logistics activities from Main warehouse in Sweden in Halmstad to the stores with concentration on transportation and warehousing. Only those issues of development which the author believes to be most important for the topic investigation are considered for thesis. Though there are plenty of factors that control the SCM development, only those that author believe will affect Company X's future are mentioned.

It is important to mention that this work will not result in any outcome but only gives a proposal and suggestion to the Company X the way of possible treatment of identified problems and gaps in Supply chain management.

1.4 Methodology

To help to answer the raised questions the extensive literature review in the specific area has been made. Articles, books and textbooks within Supply Chain Management and Logistics area had been the primary focus of the literature search but the author also broadened her knowledge by reading books and other sources from another field, for example marketing, Business to Business Commerce and internal policies of Company X.

To obtain a real and practical view of Company X today, as well as to outweigh the theoretical sections of this project author has exemplified a Company X-flow in practice. The final tendencies, which might affect the current company in the future are identified and later on implemented in practical example. Studies of how this particular material flow will be affected by future requirements and conditions are described in the thesis.

Workflow shown in Figure 2 is based the three parts: identification, analysis and conclusion in which the analysis consists in seeing how Company X will be affected by future trends.

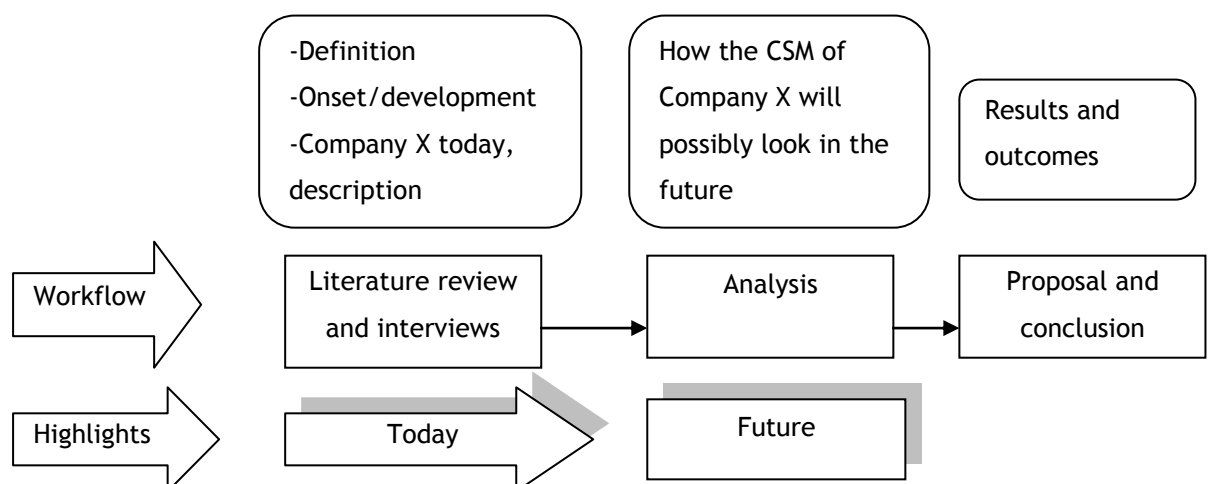


Figure 2: Outline of the methodology process

In other words, the methodology of the work includes:

- an extensive literature review,
- interviews with company's management
- search archive of the company's documentation
- observation

For the process of writing this thesis, the financial and statistical reporting of the Company X, as well as books, internet resources and articles (written by Swedish and international authors) which are accessible in Örebro University Library (Sweden) were used.

The author of this thesis worked in the Company X so she could observe and analyze the company on a daily basis.

2 Theoretical basis of the Supply Chain Management processes

Supply chain management (SCM) remains a topic of considerable interest among supply practitioners and academicians. Academic journals are being created or renamed; business schools are offering SCM programs; professors are altering their titles and research interests. This flurry of activity, across multiple business disciplines, makes the scope of SCM unclear. Author of this paper, guided by the literature and careful academic journals review, trying to find the real meaning and SCM and its importance in retail and logistic on an example of chosen company.

2.1 Background

About fifty years ago it was obvious that if the company produces some item, it would be purchased and consumed eventually. But times have changed. The information technology accelerated, markets globalize, political economies stabilized, boundaries opened and the world suddenly became smaller. Consequently, increasing number of world-class companies appeared and started competing on a global basis. The products change quickly, following the trends in technology. Consequently, the habits of consumers are changing quickly. This caused the companies to be very careful in planning, since the products are becoming obsolete very quickly. In that situation it is very important to stay innovative, lean and responsive to change in the market. (Biz-development, 2011)

Production and logistic processes undergo changes. Evolution of concepts occurs from late 60th. During this period there was a transition from non-saturated «market of the producer» to satiated "market of the consumer». After initial saturation of the market there were re-

quirements to quality of the goods, the concept of general quality of the goods. Expenses were compensated by quality.

“Modern production and logistics develops according to three main tendencies: orientation to the client, specialization on key competences and increasing in value of information technologies. The main principle of business in the modern high-growth market condition is to cooperate to be competitive.” (Gattorna 1996, 1-23)

Here are some definitions of Supply Chain Management:

Christopher (1998, 5) defines SCM as:

“The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole”

Current definition focuses on achieving better results for all members of this chain. In Christopher’s opinion term “supply” chain management should be replaced with “demand” chain management to bring satisfaction to all sides of the deal, not only to supply side.

Another definition given by Cooper, Lambert and Pagh (1998, 1)

“Supply Chain Management is the integration of the key processes from end user through original suppliers that provides products, services and information that add value to customers”

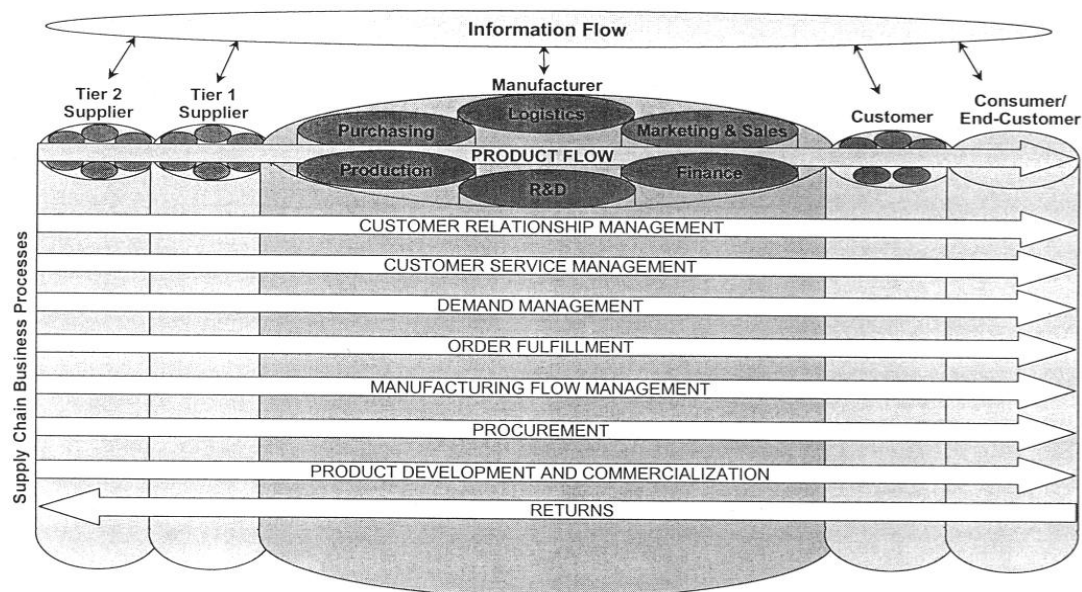


Figure 3: SCM: Integrating and managing processes across the supply (Cooper, Lambert & Pagh, 1998, 1)

This definition is aimed to expand of understanding SCM concept. Business processes become supply chain business processes linked across intra- and intercompany bounders. “The table illustrates simplified supply chain network structure, the information and product flows, and the key supply chain business processes penetrating functional silos within the company and the various silos across the supply chain”. (Cooper, Lambert & Pagh 1998, 2)

Another description of SCM by New & Payne 1995: “the chain linking elements of the manufacturing and supply process from raw materials and ending with the user, encompassing several organizational boundaries”. (New & Payne 1995) According to this definition, SCM covers the whole value chain and addresses material and supply management from the extraction of raw materials to its end of useful life.

Tan, 2001 considers SCM as a tool which manages business activities and relationship internally within a company, with direct suppliers, with first and second level suppliers and customers along the supply chain, and in the entire supply chain.

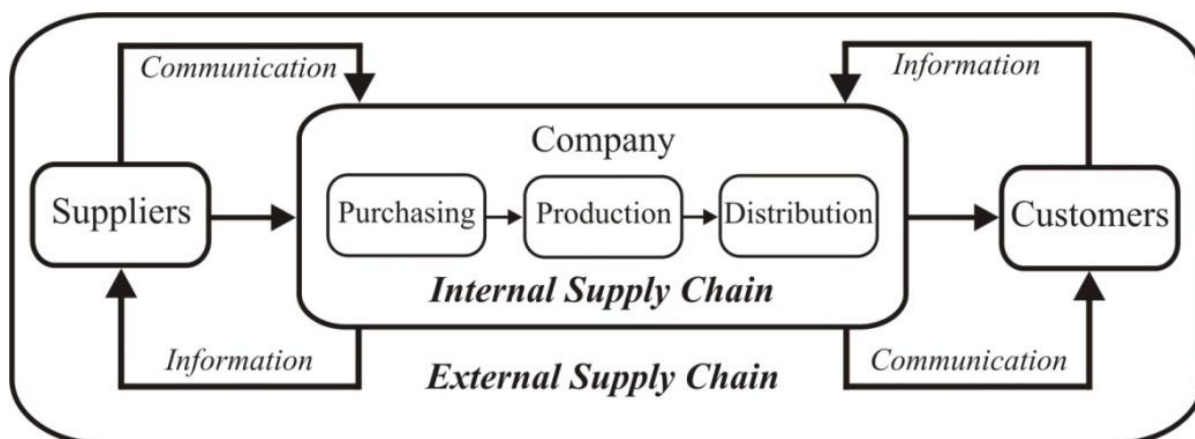


Figure 4: Structure of the supply chain (Tan 2001, 41)

2.2 Difference between supply chain management and logistics

At a boundary of the XX-XXI centuries the logistics underwent essential changes, both in the sphere of realization of logistic technologies, and in the goal-setting sphere. New quality of logistics was demanded by the high competition in the world markets, an entrance of products with rather short life cycles to the market, and also constantly growing expectations of consumers to quality of a product and logistic service.

In the last 20-30 years, due to the introduction of modern technologies the costs of production manufacturing have decreased so far as the current stage of scientific and technological progress allowed. (Advis logistics portal, 2011)

The deepening of specialization, as a necessary factor in this phenomenon implied the adequate development of cooperation and integration managing subjects. However, the sphere of circulation could not provide the desired level similar to the manufacturing sector even after the implementation of logistics as a multifunctional management which was responsible for managing the material flow, adequate information, and finances. That is why such a logistic concept as Lean Production (LP) and the principle of Just-in-Time in the 1990s have developed the concept of Supply Chain Management. (Advisis logistics portal, 2011)

Even though SCM concept has grown out from the logistic concept, SCM differentiates from logistics. Definitions of “logistics” and “SCM” clarify this distinction:

Logistics is typically based on the individual business with the objective of making this enterprise’s logistics system more efficient through internal and external planning and control.

SCM is based on the external relationships between the members in the entire supply chain and focuses on how to improve trading in general. Thus this concept provides a broader perspective across the supply chain that has been traditional approach within logistics. (Jespersen & Skjøtt-Larsen 2006, 14)

Figure 5 illustrates widely accepted theory regarding difference between logistics and SCM. Logistics have intra-organizational focus, while SCM if focusing on inter-organizational relationships.

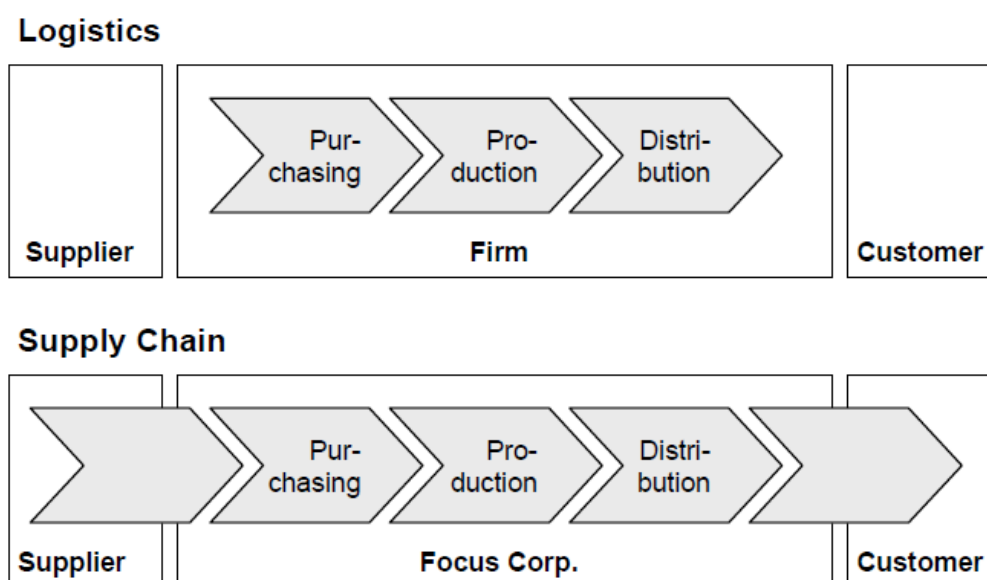


Figure 5: Structure difference between logistics and SCM (Jespersen & Skjøtt-Larsen 2006, 15)

SCM studies whole scheme and institute of material information and financial flows. Supply Chain Management believably considers the full organization of processes that control material, information and financial flows looking at each process as a complete architecture.

2.3 Areas, purpose and functions of SCM

Supply Chain Management represents the set of links related to each other with information, cash and commodity flows. The supply chain starts with the purchase of raw materials from suppliers and ends with the sale of finished goods and services to the client. Some units may wholly belong to one organization, while others, to counterparties companies (customers, suppliers or distributors). Thus, the supply chain typically consists of several organizations.

Supply chain management system designed to automate and control all stages of the supply companies and to control movement of the goods in the enterprise. SCM satisfies the product demand of the company and significantly reduce the cost of logistics and procurement. SCM encompasses the entire cycle of raw material purchasing, production and goods distribution.

Researchers tend to identify six main areas which focus on supply chain management:

Production - the company decides what and how to produce;

Delivery - when making the decision in principle on the construction of either entering the supply chain a company must determine that it will produce on their own, and which components (parts, products or services) - to buy a third-party;

Location - the decision about the location of production facilities, storage centers and sources of supply;

Stocks - the main objective of inventory management - insurance against unforeseen circumstances, such as a surge in demand or delay in delivery;

Transportation - decisions related to transportation. They depend on the location of the supply chain, inventory policy and the required level of customer service. It is important to determine the correct methods and effective operational management of transportation, since these operations account for about 30% of the total cost of supply, and it is with delays in delivery due to an average of more than 70% error in the distribution of goods;

Information - the effective functioning of the supply chain is not possible without the rapid exchange of data between all those involved. (Ganeshan & Harrison, 1995)

Organization should create a common meters to assess the maximal efficiency of all supply chain members for more effective performance of SCM system. These meters should be based on technologies used, market potential, delivery time and cost effectiveness which directly linked with the end result.

Purposes of SCM:

- Increasing the level of service
- Optimization of the production cycle
- Reduction in inventory
- Improving the productivity of the enterprise
- Increase the profitability
- Control of the production process

SCM-solutions creates optimal plans for the existing production lines use, illustrated in details what, when and in what sequence should be built from the capacity constraints, raw materials and batch sizes and the need for changeover to the new product. This helps to meet the demand at minimum cost.

Functions of SCM

With the development of appropriate software, enterprise management system began to go beyond traditional operations automation within the enterprise. There were also new terms: a normal control loop (sales, production, and procurement) came to be called back-office (internal system), while the interaction with the counterparties and customers - front-office (external system).

In today's competition businesses directing all their efforts to meet the needs of customers, they couldn't manage without the formation of the external chain any more. The result is an integrated supply chain. Its links are all objects, material and information flows, and interrelations of the enterprise, its suppliers, distributors and clients, up to the end user. In each link of these chain losses of time, resources, money are inevitable. But if all operations necessary for delivery of a product to the client considers as links of the same business process and to operate them from this position, it is possible to reach essential decrease in expenses, reduction of volume of a work in progress and increase in profitability of sale. (Brewer & But-ton 2001, 99-111)

SCM-procurement optimization modules to help implement a strategy to find suppliers based on cost analysis.

Figure below shows the processes related to the part of the supply chain.

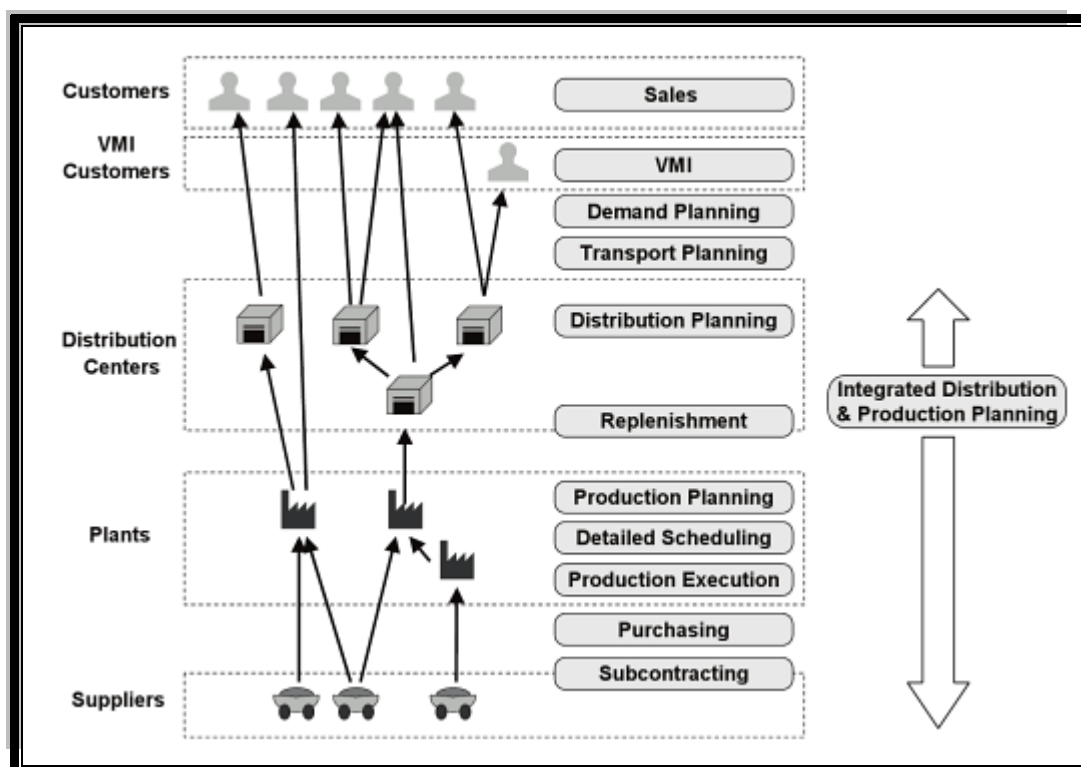


Figure 6: Common supply chain processes (Dickersbach 2009, 10)

SCM-solutions create optimal plans for using of existing production lines, described in details what, when and in what sequence is necessary to make, taking into account restrictions of capacities, raw materials and materials, the sizes of parties and need of readjustment of the equipment on release of a new product. It helps to achieve high satisfaction of demand at the minimum expenses. (Brewer & Button 2001, 99-111)

In the SCM-supported systems of new generation technologies track the status of the goods at any stage of its passage through the supply chain. In those industries in which 40-60% is spent on procurement, business process optimization provides a competitive advantage and determines the profitability of the business as a whole. The introduction of SCM-management solutions helps to optimize logistics and reducing costs for storage, transport and distribution of products. (Jespersen & Skjøtt-Larsen 2006, 29-31)

2.4 Vertical integration of the supply chain management

“The process of integration is the extent to which the business can achieve both corporate, business and functional control vertically and horizontally throughout the supply chain. The higher the degree of integration, the greater the need to emphasize coordination and find a responsive organizational form to maximize coordination” (Hensher & Brewer 2004, 228)

Vertical integration is an approach where all the links of a chain owned by an organization. This approach minimizes the cost of transactions such as interaction between seller and buyer. It is believed that control and communications will be improved, and the costs decrease, but the sole proprietorship cannot provide the desire to maximize the best customer service and even the tracking of changes in external conditions. The negative financial impact (which is often associated with factors of response) may be significant, and sometimes the organization's assets no longer meet the changing market.

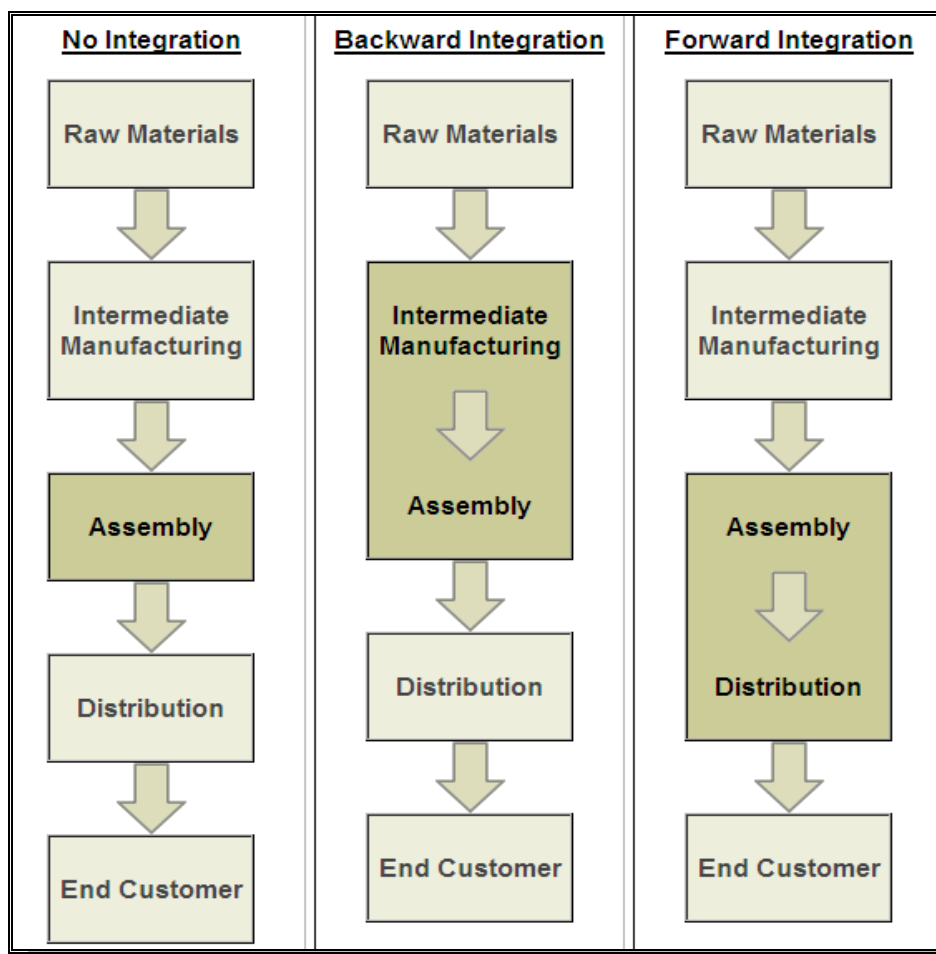


Figure 7: Types of SCM integration (Quickmba 2010)

When the company provides backward integration if it tries to gain control of the companies that produce raw materials needed in the production of goods or services of this company. For example, automakers can own a company for the production of tires for the production of automotive glass and automobile chassis. The control of these companies provides stability of supply, quality and price of the final product.

Company carries forward vertical integration, if it seeks to gain control of the companies that produce products or services that are closer to the end point of a product or service to the consumer. (Committee on Supply Chain Integration, 24-38)

Vertical integration's advantages:

- Reduce transportation costs if common ownership results in closer geographic proximity. Improve supply chain coordination.
- Provide more opportunities to differentiate by means of increased control over inputs.
- Capture upstream or downstream profit margins.
- Increase entry barriers to potential competitors, for example, if the firm can gain sole access to a scarce resource.
- Gain access to downstream distribution channels that otherwise would be inaccessible.
- Facilitate investment in highly specialized assets in which upstream or downstream players may be reluctant to invest. (Greaver 1999, 77-80)

Expansion of activities downstream is referred to as forward integration, and expansion upstream is referred to as backward integration.

Horizontal integration completely differentiates from vertical. It takes place when the company increase its business into different products lines which are anyway similar to existing line.

The formation of partnerships gives up many benefits of vertical integration not only through cooperation and collaboration, rather than through ownership. In addition, the single market transaction, each party will seek to maximize the potential profits, as another opportunity to receive it will not. (Hensher & Brewer 2004, 242)

If such transactions eventually become regular, the company can expect a well-deserved reward for repeated transactions. As soon as the parties depart from the practice of counting debt and its subsequent repayment, it is possible to develop a trusting relationship built on good will. This occurs when one party is ready to do more than simply meet the needs of the client. This is done without negotiation on the immediate receipt of remuneration, but with confidence that this contribution will receive a proper assessment of both parties and will be credited. As soon as response time of both sides will decrease there would be need for agreement and action will be taken simply because they are about to support the relationship. (Bowersox & Closs 2010, 289-297)

Between "pure" market and vertical integration, there are many mixed forms of collaboration, and many of them can be regarded as partnerships. Joint ventures are similar to a formal partnership in the sense that in order to achieve certain goals established a new company (which may eventually become a limited liability company). In the joint venture will have its

staff, its management structure and theoretically it is easier to manage. (Harrigan 2003, 15-22)

Nevertheless, sometimes it happens that an understanding is reached between the partners and the joint venture is another form of competition, in which both sides often take losses. Such businesses are often created for the development of any technology or control access to the market. In this case, the alternative is a partnership.

This situation may also occur in strategic alliances, where there is no intermediary (as in the case of a joint venture), but that can be successfully used to achieve the same goals. Sure, some organizations have come into strategic alliances, betting on a successful product or new technology. When using this approach it is increasingly important to find ways to control the access of competitors to the new development and manipulation of them.” (The Economist, 2009)

3 Retail and logistics

According to Bajaj and Tuli, “A retailer is a person, agent, agency, company, or organization which is instrumental in reaching the goods, merchandise, or services to the ultimate consumer. Retailers perform specific activities such as anticipating customers’ wants, developing assortments of products, acquiring market information, and financing. Retailing is defined like as a conclusive set of activities or steps used to sell a product or a service to consumers for their personal or family use.” (Bajaj & Srivastava 2005, 2)

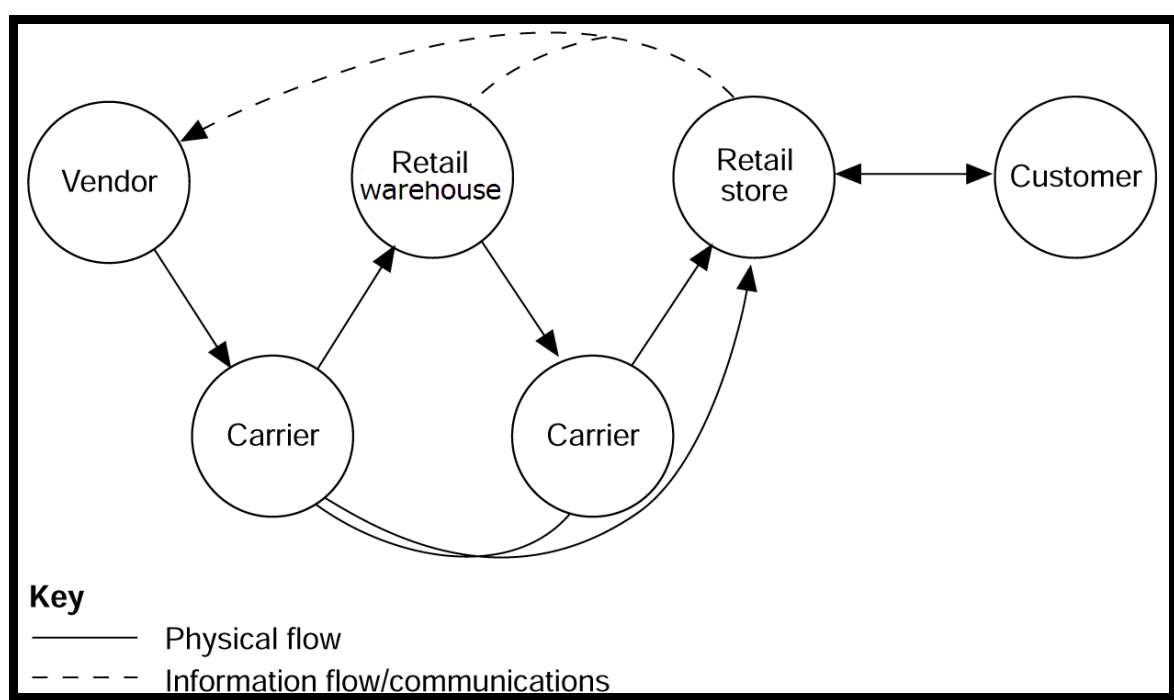


Figure 8: Retail logistics scheme (Ellram & La Londe 1999)

Retailing has become such an intrinsic part of our everyday lives that it is often taken for granted. But if several decades ago nobody revealed on logistics of retail trade, now the logistics is one of the most important moments for business professionals. Retail logistics includes the entire chain of goods movement: supply and distribution of goods, the information application technology, interaction with goods consumers, sales forecasting. Modern technologies of retail trade are based on various systems of logistics each of which has its own advantages and disadvantages. (Ellram & Londe 1999)

The development of retail, as well as wholesale, from a logistics point of view should be primarily taken as improving of a goods movement level. Various principles of demand forecasting, product selection, inventory control should be applied. Using of scanning devices allowing increase of control over stocks efficiency and also to reduce time the buyer spends on the goods payment.

3.1 Retail transportation

The main circumstance of well functioning of the trade enterprises is the organization of the goods transportations. In the conditions of market economy the success in many aspects depends on stable and effective work of transportation system.

There are few most important factors of well-organized logistics:

- regularity, continuity, reliability and speed of products' delivery
- observance of the goods' delivery periods without losses
- safety of goods quality with the minimum costs of transportation

As well as following factors must be taken in consideration:

- goods existence in a wholesale warehouse, its condition and readiness to transportation
- quantity and condition of vehicles
- the consumer readiness for goods acceptance (Bajaj & Tuli 2005, 387)

Besides the specified obligations of transportation, service must include the analytical accounting of transportations which allows tracing operatively situation changes in the market.

Analytical accounting is designed to explore and address issues such as:

- transportation volume change dynamics
- dividing clients on seasonal and constant
- development of schemes and routes to consumers
- election of vehicles for specific services
- grouping clients by the direction, range and volume of purchases
- analysis of changes in transportation costs (Tonndorf 1998, 25-37)

The distribution channel choice is one of the most important decisions that companies - both vendors and retailers have to make, it is essential to both costs and service quality.

The distribution system has a long afford different options that are illustrated and commented briefly below:

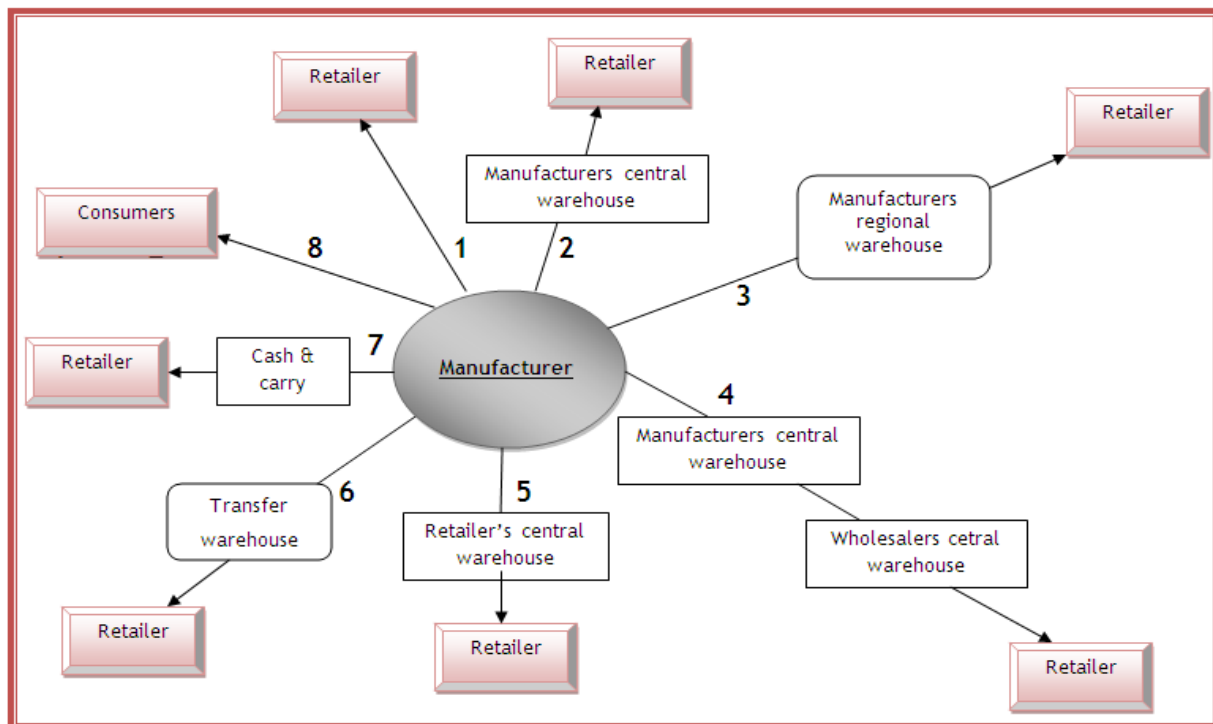


Figure 9: Types of transportation channels from manufacturer to retailer

1. Direct delivery from manufacturer to customers is absolutely simplest and fastest way, but not necessarily the most economical distribution channel.
2. Manufacturers bond with a central warehouse where the goods are stored and from there delivered to retail customers. It called "classic" distribution channel.
3. Distribution chain can become longer through setting up with regional warehouses close to the customers. The larger the market, the further away, the longer the channel.
4. How do the wholesalers act like an intermediary? They buy products from different manufacturers, stores and sorting them and then deliver them to their customers.
5. Retail organization assumes manufacturers or wholesalers roles by themselves caring out distribution to their final stores via the central warehouse. Again, as a stage 3 might be an additional network of regional warehouses.
6. With a newer development system the central warehouse function is reduced so that the goods purchased are no longer stored without repacked and without further delay delivery to retail outlets.

7. Wholesalers establish cash & carry-warehouse where small customers are buying and picking up their purchases themselves.
8. A portion of the distribution of goods passing by retail. Mail order companies, for example, sells and distributes directly to final consumers. (Bowersox & Closs 2010, 22-46)

3.2 Retail warehousing

The main role of warehousing is storage, which is defined as the assignment good in the selected location. But there is close relationship between time and storage. Sometimes the distribution takes too long because time because the goods stay too long in the storage.

Inventory is second after transportation cost-heaviest item in the distribution system. It is also the most controversial parameter that offers the greatest potential for rationalization options. It is the prime target and the main item of cost saving measures.

Changing requirement on retailing more and more offset any reduction in warehousing obtained as a result of these manufacturing improvements. Retail stores faced with the challenge of providing consumers an increasing product assortment, found it more difficult to maintain purchasing and transportation economics when buying direct from suppliers.

Progressive wholesalers and integrated retailers developed state-of the art warehouse systems to logistically support retail replenishment. Thus the focus on warehousing shifted from passive storage to strategic assortment. The term "Distribution Center" became widely used through industry to capture this dynamic aspect of traditional warehousing. (Bowersox & Closs 2010, 247)

3.2.1 Types of warehouses:

The sizes of warehouses vary in a wide range: from very small, with total area of hundred square meters, to the giant warehouses covering the areas of hundreds thousands square meters.

Warehouses can have different designs: located in separate rooms (closed); those which only have a roof or a roof and one, two or three walls (half-closed). Some goods are generally stored outdoors in designated areas, the so-called open warehouses.

Below are described five types of warehouses:

Private	Public	Automated	Climate-Controlled	Distribution Center
Owned and operated by channel suppliers and resellers and used in their own distribution activity.	It is essentially space that can be leased to solve short-term distribution needs. For example, retailers may order extra merchandise to prepare for in-store sales or order a large volume of a product that is offered at a low promotional price by a supplier.	Warehouses with advances in computer and robotics technology. The level of automation ranges from a small conveyor belt transporting products up to a fully automated facility where only a few people are needed to handle storage activity for thousands of pounds/kilograms of product.	Storage of many types of products that need special handling conditions such as freezers, humidity-controlled environments, and dirt-free facilities.	Warehouses where product storage is considered a very temporary activity. Products are received from many suppliers and quickly shipped out to many customers. In some cases, such as with distribution centers handling perishable food most of the product enters in the early morning and is distributed by the end of the day.

Figure 10: Types of warehouses (Christ 2009, 181-182)

The warehouse can intend for storage of the goods of one enterprise (a warehouse of individual using), or perhaps on the terms of leasing, to be leased to physical or legal entities (a warehouse of collective using or a warehouse hotel).

Storage differentiates also in storage height. Some cargo is stored not higher than a man height, in other requires special devices that can pick up and put on the load in a cell at a height of more than 10 meters.

3.2.2 Sizing and design

Warehouse layout and size is a very important aspect of planning a facility in an existing building. There are some methods available to help estimate warehouse size.

The right way to size the place is from the inside, that way the actual size required will fit the operational requirements, and will ensure that all available space is used and you are not paying for unused space. Approximately 10 percent additional space must be available for increased volume, new products, and new business opportunities. (Supplychainlogistics-consulting.co.uk)

The planning of the storage areas should be planned to make possible product flow. When planning the storage layout company should pay special attention to location, number and design of receiving and loading docks.

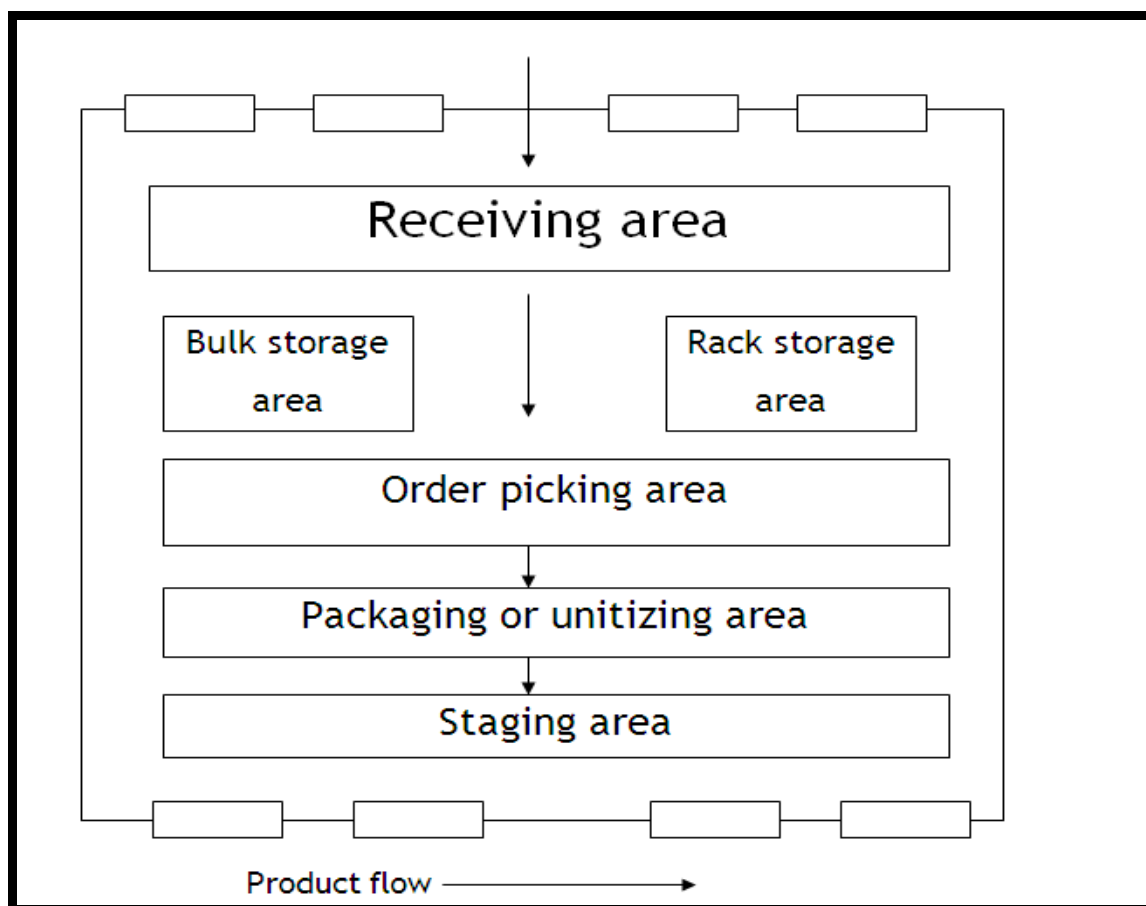


Figure 11: Basic warehouse design (Bowersox, Closs, Cooper 2010, 262)

This example of the basic warehouse design shows the straight-line product flow which facilitates rapidity while minimizing blocking and redundant handling.

The planning of the storage areas should be planned to make possible product flow. When planning the storage layout company should pay special attention to location, number and design of receiving and loading docks.

3.2.3 Warehouse management system

“A warehouse management system, or WMS, is a key part of the supply chain and primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put-away and picking. The systems also direct and optimize stock put-away based on real-time information about the status of bin utilization.” (Wikipedia)

The system database contains information on the product units located on each pallet or in each cell – date and time of their acceptance in the storage, number of the arrived party, sometimes goods expiration date.

Specification on product unit consists of individual characteristics of the goods. For each product unit it is specified in which area, in which zone, and in which place this unit can be stored. As well as special characteristics like a way of replenishment of commodity stocks can be specified.

The system provides:

- the exception of errors caused by personal
- information processing for the storage and movement of goods in real time
- possibility of the account and control of sale of goods

With the help of WMS employees:

- have exact information on the cargo, provided in any form of the warehouse and accounting reporting
- have possibility to plan volumes and the range of warehouse stocks
- can carry out complete inventory of any goods without stopping warehouse works
(Brewer & Button 2001, 225-237)

Brief description of the advanced functionalities of WMS:

Yard management: a process of managing vehicles and the inventory within vehicles while in the warehouse yard.

Labor management: maximizing the use of warehouse labor.

Warehouse optimization: selection of the best location within warehouse for the storage and retrieval to minimize time and movement.

Value-added services: coordination of warehouse activities to customize product, such as packing, labelling, kitting and setting up displays.

Planned cross-docking and merging is the integration of two or more part of a customer's order, which have been supplied from a different source without maintaining inventory. (Bow-ersox & Closs 2010, 263-268)

The figure below illustrates the functionality of the WMS:

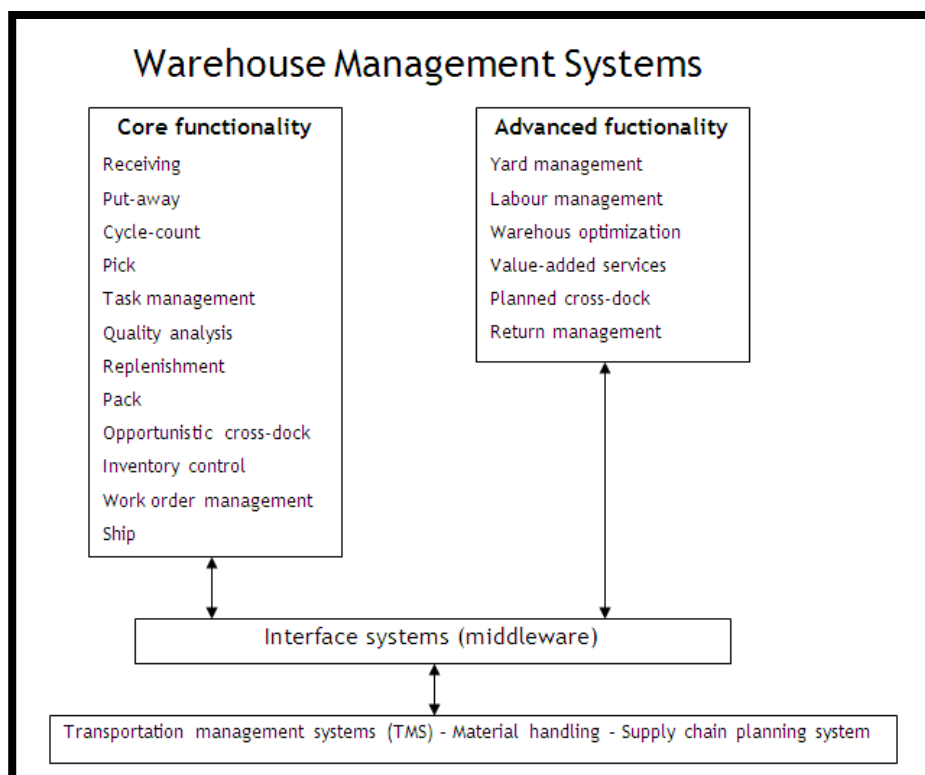


Figure 12: Warehouse Management System's functionality

4 Case study: Implementing the supply chain management and logistics processes in Company X

When the founder of the company studied pricing at the university, he found that there often were many intermediaries between manufacturers and end consumers. Many used money to build the brands so that they could provide exclusivity for their products. Many brand owners did not own factories, but bought by contractors in the world market.

The founder concludes that removing the middleman and buying directly from producers could significantly cut prices in the market. The low product price allows the company to sell bigger amount of goods.

To avoid trademark disputes with various dealers the company implements its own labelling policy of the products. The own store brand could help to drive down prices in the future. "To provide products of good quality at a good price" was his original business concept and especially to "car owners" target group was own concept, called: "The supply should include the most for car owners fix to their car".

Compared to competitors Company X's auto parts prices are the absolute lowest on the market. Thanks to volume purchasing without intermediaries, Company X can continue to decrease the purchase price and thus sell good products at very competitive prices. (Internal company X's source)

4.1 Company's background

The company started in 1963 by selling auto parts with the name "The Company X". The business was mail order sales of auto parts and accessories. Their first catalogue has a question "Why to pay more?"

Nearly 40 years ago the founder of the company raised a question: "Why are spare auto parts and accessories so expensive?" He saw that car suppliers often had a relatively low profit margin on the cars they sold. The idea was that customers would be enticed to buy the car. The low margin on the car was then taken back by charging very high margins on spare parts, accessories and service.

First Company X shop was opened in a small basement area in Linköping, Sweden. Within a few years mail-order business rose, even though it was located in the same basement area.

The direct purchase policy meant that the shop of auto details soon started to look for, where productions of various products were made. And in the late 1970s the company started to build up strategic sourcing contacts worldwide.

The owner's strong technical interest led to several major manufacturers, which met Company X requirements and developed quality products which answered all standards. Products of several of these manufacturers' have also been released to the market and became famous brands.

In 1976, sales had risen to about 25 million and the company moved to new premises of the Torvinge area in Linköping. Local area was the entire 6000 square meters and contained both, mail-order, central warehouse and a store of nearly 250 square meters. This shop then expanded to about 2700 square meters in the early 80's.

In 1983 opened the first store outside Linköping and Sweden - in Norway. The Norwegian establishment was followed in 1985 by a similar establishment in Finland.

Since the mid-1980s, a number of new stores opened in Sweden, Norway, Finland and Denmark. Today Company X has more than 80 stores in Scandinavia.

“Buffin Real Estate” is building stores for the Company X all around Nordic countries.

The one of the biggest stores with the size 6600m² located in Kristiansand, Sweden. (Interview with CEO 1: “SCM in Company X”)

Company X’s assortment includes more than 17 000 articles. From the start only consisted of car-related products are now divided into eight areas and extend beyond the car even construction, leisure, home, boat, tools, techniques and chemicals. (Company X web source)

4.2 Organizational Structure

The annual report from 2010 shows a turnover of nearly 3.1 billion krona (approximately 350 million Euro) and an operating margin of 7 million krona (approximately 780 000 Euro). The Group's chairman says that the goal is to reach a turnover of 10 billion within four to five years. (Internal company X’s source)

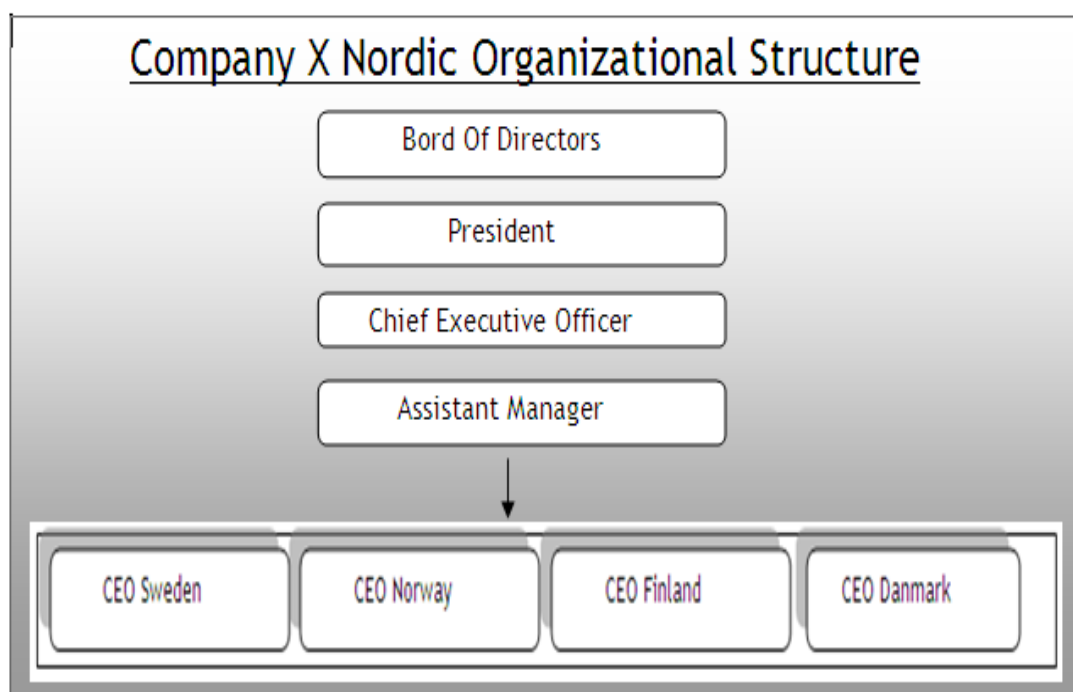


Figure 13: Organizational structure of the Company X

And particularly organizational structure of Company X in Sweden:

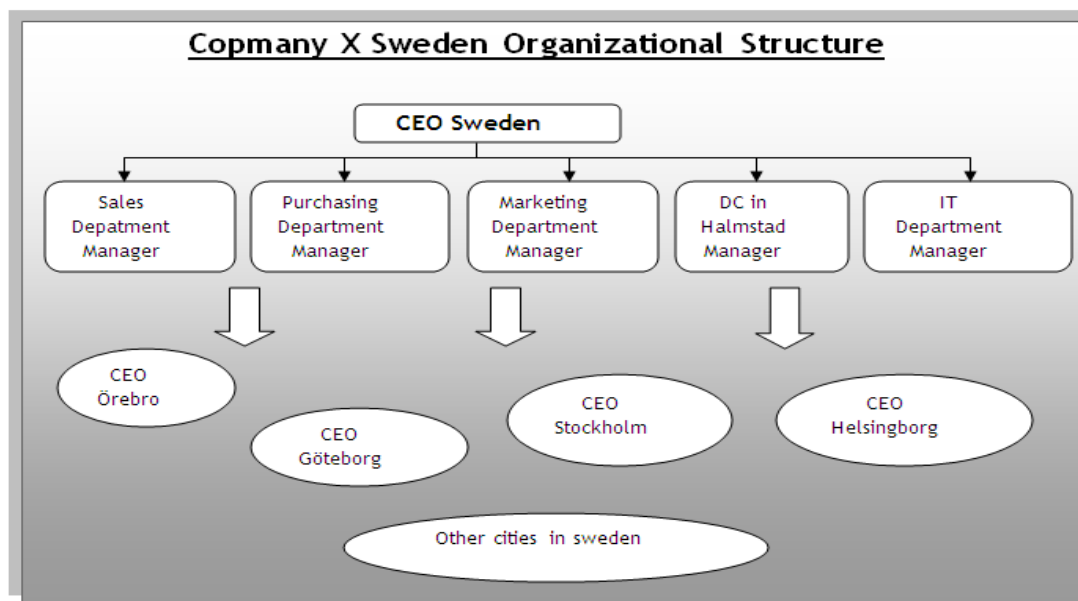


Figure 14: The Company X Sweden organizational structure

The organization of the product purchases in Company X is centralized, as the staffs of department submit directly to the department management.

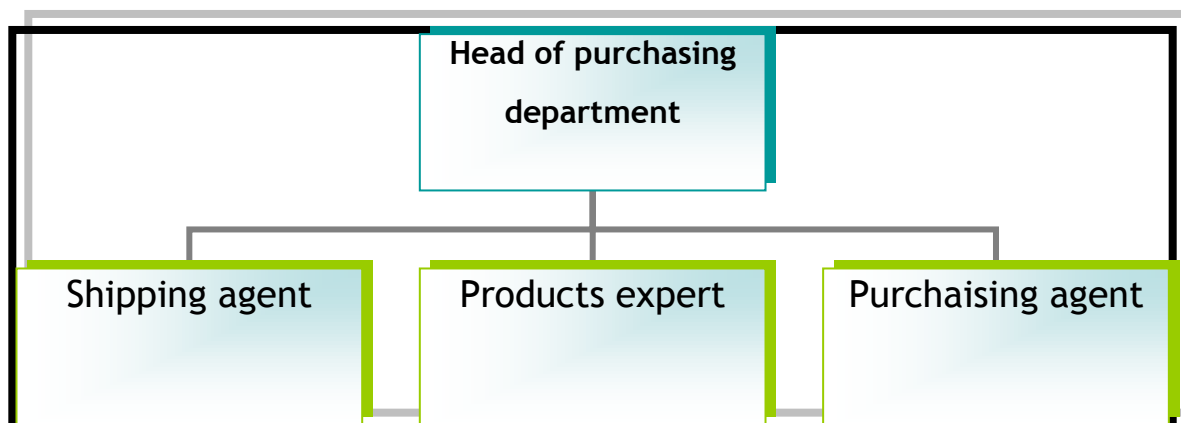


Figure 15: The structure of the purchasing department

The main functions of the department are:

- Analysis and supplier selection
- Conclude the contracts (the number of products, the choice of terms of delivery, form of payment)
- Control over the supply conditions (quantity, quality, and delivery time)
- The organization of product placement in the warehouse.

Table below shows the basic functions of purchasing department members.

Job	Function
Head of the purchasing department	Responsible for the procurement process effectiveness, coordinates subordinated employees activity, plans the main sources of material support, coordinates purchase plans to activity of other functional divisions, hires employees.
Purchasing manager	Is engaged in suppliers search; together with the commercial director concludes contracts, make out documentation on material resources acquisition, organise transport for transportation (if it is necessary).
Product expert	Defines the products requirements, verify the compliance of quality standards, specifications, contractual obligations and other documents. Quality control, organization of transportation and storage products. Participates in the inventory of material resources. Monitors compliance with rules governing the storage of material resources, terms of shipment and returns.
Shipping agent	Responsible for all chains in the transportation process

Figure 16: Functions of purchasing department members (Interview with Company X's CEO 1: "SCM in Company X")

4.3 Product assortment and quality

General attention is drawn to the creation of the product range, as an evolving process over time. The process of selling goods is characterized by fierce competition.

Company X bases its assortment mostly on car details, accessories and tools. In recent years the range has broadened considerably and the process continues. Nowadays there are also

bicycles and bicycle accessories, computer and mobile phone accessories, paints, building tools, house wares, luggage, camping, hobby and much more.

The Company X defines a good quality as the product to be free from defects which meet customer expectations. For certain product, such as tools, there are two distinct levels of quality. On one level, characterized by the products have ten-year warranty, is primarily aimed towards advanced users who use tools for business purposes. The price of these tools is very competitive in relation to the quality of products. The second level is for those who want a good tool but not use them every day why they would rather give priority to a very low price.

Tests, analyzes, and functional checks are conducted both before auto parts store takes up a product and running whilst the product is also available. When shipped from the factory auto parts store has its own quality control that does everything from sampling to the inspection of all deliveries before being packed and shipped to Company X warehouse.

The products have very low failure rate. Auto parts store has a goal of reaching one complaint per cent, (the value of the products auto parts store will repurchase because of errors in software, as a percentage of total sales), not exceeding 0.5%. Company X currently has an average claim percent less than 0.6%. This is a very good level but is still a little way from the target. (Company X web source)

The way to promote production of the Company X is a store catalogue.

The catalogue is published twice a year and distributed to all households around. Total quantity is more than 14 million catalogues per year.

4.4 Supply Chain Management in the Company X

Products purchasing at Company X is carried out by using the methods of commercial logistics. Construction of the logistics system ensures coordination of sales staff:

- build up the necessary range of goods in places the highest demand and at a given time period;
- the rational use of vehicles, which guarantees just-in-time delivery of goods in accordance with the identified buyers needs;
- placement and effective use of storage facilities, its equipment and inventory
- packaging that meets the requirements for a storage and preservation products
- capabilities of vehicles for transportation;
- provide financial and human resources of all operations to promote material flow from producer to consumer;
- logistics services: i.e. work related to the storage functions, transportation, freight forwarding, packing, processing and goods sorting;

In its work the company is focused on the wishes of customers and makes the selection of products at the requirements that will satisfy them.

In carrying out the purchasing process manager must come to the possibility of maximum use of commercial resources in the region in which they operate. To do this, the commercial services should have information about local industrial and agricultural enterprises (suppliers, manufacturers) and they produce the goods (product range, quality, packaging, pricing).

Nowadays Company X has over 10000 suppliers, which manufacture, packing and labelling production. Main suppliers are Chinese enterprises (which produce and produce and deliver products made of plastic); manufacturers in Thailand and Vietnam (which deliver electronics) their share in total sales volume occupied 60% and 40% - production of European manufacturers: Germany and Poland which produce car details and construction materials made of metal. (Company X Annual Rapport)

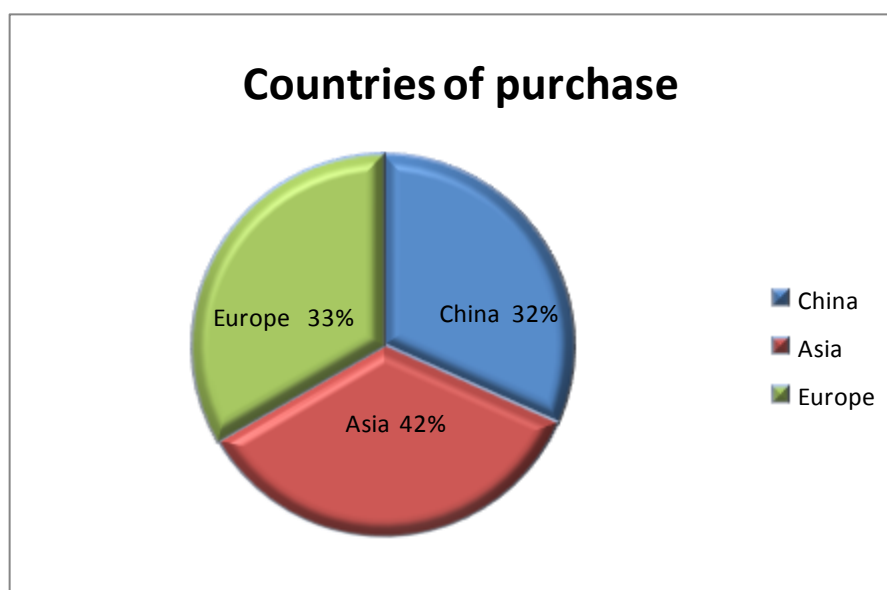


Figure 17: Countries of purchase, percentage chart

There is the following procedure for determining the purchased consignment:

- Demanded goods stock-checking in the warehouse. The procedure is carried out by the employees of a warehouse possessing information on existence of the goods in a warehouse. The actual existence of the goods with inquiries of buyers is verified.
- In case of a lack of needed goods, the purchase manager demand for delivery of this production in coordination with the commercial director.

Company X's purchasing department is divided into eight departments based on the product categories: Auto/MC, boat, leisure, home, office/electronic, construction, car care, tools.

Product managers attend different trade fairs and visit suppliers around the world to find new products and develop the existing range. By conducting regular factory visits Company X, in consultation with its suppliers and manufacturers, is also able to influence product design, choice of materials, manufacturing methods and manufacturing conditions.

Let us consider the stage of the products procurement in accordance with the adopted by the Company X "model of taking the decision to purchase, consistently runs seven stages of the implementation process:

- 1) Forecasting of demand and requirements
- 2) classification of necessary goods or services
- 3) search and preliminary evaluation of potential suppliers
- 4) receive and review proposals from suppliers
- 5) evaluation of proposals and final selection of suppliers
- 6) the choice of the order
- 7) evaluation of the order and feedback

Annually Company X adds or replaces about 2000 products in its assortment. Demand, customer satisfaction and profitability are decisive factors affecting decision making.

Although the Company X has experience and contact networks, the company's goal is to reduce the number of agents between manufacturer and department store. That's why Company X making all purchases directly from the manufacture and all purchased product proceed directly from manufacturers to many warehouse in Halmstad, Sweden. (Interview with Company X's CEO 1: "SCM in Company X")

Each store needs the products to be sold daily basis with the discontinuous purchase orders in product types and volume. These orders are collected during the week in the warehouse in Halmstad and delivered twice a week to local stores.

4.5 Supply chain integration in the Company X

Backward Vertical integration helps to Company X to create a competitive advantage based on differentiation. The company carries out actions that were previously not peculiar to it, such a distribution, offering the final product best quality-price correlation as well as improving customer service and improving the finished product characteristics. The company pro-

vides backward vertically integrated back if it tries to gain control of the companies that produce raw materials which needed in the production of goods or services of this company.

The concept of backward vertical integration used in the Company X can be visualized using the value chain and as illustrated below:

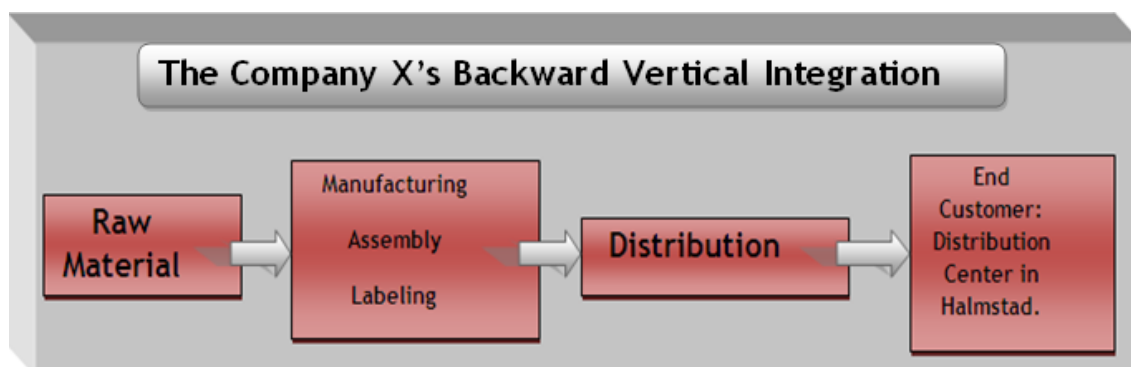


Figure 18: The Company X's backward vertical integration

The integration into a larger number of manufacturers provides Company X an opportunity to differentiate through the creation or strengthening of existing skills, better to perform basic operations or development of strategically important technologies, as well as adding product features that enhance its value to the buyer.

This integration reduces Company X's dependence on particular suppliers. Most important aspect is that dependence on major suppliers which at every opportunity seek to raise the price is reduced. Small suppliers which are not a priority for the Company X helps in situations when the general supplier faces a shortage of its products. When this happens often and there are permanent delays in deliveries, then the backward integration is a good strategic decision.

Vertical integration allows Company X to organize a more effective scheme of internal trade, and inventory control of production. This contributes to crisis overcoming in the distribution process chain. (Interview with Company X's CEO 1: "SCM in Company X")

4.6 Logistic processes in Company X

The company X's main warehouse (Distribution Center (DC)) in Halmstad is the logistics hub of the whole company, and all goods delivered for the Company X stores pass through the service. Computerized systems smooth the progress of high availability in stores and for mail order/Internet sales.

Halmstad harbour is offering environmental friendly transport solutions with two new railway shuttles Halmstad - Norrland and Halmstad - Västerås/ Mälardal which makes easier to deliver good all around Sweden not only by truck but also by railway.

This thesis concentrates on the logistics activities from the Halmstad's DC to the stores with concentration on transportation and warehousing.

4.6.1 Transportation

“Transportation is the single largest element of logistics costs. Transportation managers are responsible for arranging for inventory to be positioned in a timely and economical manner. As operational expectations become more precise, order-to -delivery performance cycles more compact, and margins for errors reduced to near zero, successful firms have to come to realize that there is no such thing as a cheap transportation. Unless transportation is managed in an effective and efficient manner, procurement, manufacturing and customer accommodation performance will not meet expectation.” (Bowersox & Closs 2010, 218)

The Company X owns a private transportation company which allows reducing costs of using logistics companied from a side. Manufactured, packed and labelled product from Asia delivered to DC by trucks and from Europe by trains.

Transportation within Sweden, between DC and stores carrying out mostly by tracks even though there are good solution for train transportation exists. Distance is the main factor of transportation costs.

The choice of trucks as the primary vehicle of transportation is determined by a number of reasons:

- High manoeuvrability and mobility. Scope of the car is quite wide and depends on many factors: the scheme of transportation such as cars, the flux, the value of the cargo and its possible adverse changes in transportation.
- High-speed delivery of goods, providing a rhythmic completion of inventory, increases the efficiency of working time, guarantees a high degree of conservation of transported goods, reduces the loss of trade, the consumer retains the properties and appearance of the product.
- Adaptability to various road conditions and transportation of goods, of unequal weight and overall dimensions.

The structure of the transportation company process includes:

- managing traffic plan of vehicles;
- work coordination

- defining the scope of the using cars and trucks feasibility depending on the specific conditions of transport, type and properties of the cargo, cargo transport performance indicators
- providing of effective and safe long-distance transportation of goods by road
- application calculations for the efficiency of using vehicles and reducing the cost of transportation
- analysis of road conditions in order to develop effective and safe routes (Interview with Company X's CEO 2 : "Logistics in Company X")

4.6.2 Warehousing

The Halmstad's warehouse (Distribution Center) is one of the largest of its kind with an area of 50 000 m² equal to six football fields.

The bearing internal transport takes place by 60 "Jungheinrich" trucks on the 8-km-long truck aisles. Storage solution is a clean traditional racking installation Constructors Pallet Racking P90.

Capacity:

116 000 podiums constructed of Pallet Racking P90.

Height 10.5 m

Beam Length 2750 mm and the truck aisles 3600 mm

Beam height 125 mm and the load capacity $800 \text{ kg} \times 3 = 2400 \text{ kg}$.

Accessories:

Stool Top, as well as wire mesh and pusher protection, pallet post and frames and poles protection.

Halmstad's large warehouse is a complex structure, which consists of many interrelated elements, has a definite structure and performs several functions to transform the material flows, as well as the accumulation, processing and distribution of goods among consumers. Warehouse incorporates many different aspects of logistics operations.

The main process of distribution includes:

- Receiving: this includes the monitoring of goods in terms of quantity and quality, depalletizing and transferring to a storage area; receiving of returned goods.
- Storage: this includes organizing goods according to bulk, long and short lead time products, seasonal and promotional products, and replenishment storage.

- Order picking: this includes assigning order lists to team and teams to zones; the organization of pickers, whether picking done manually or electronically. (Brewer & Button, 2001, 226)

The goods are delivered to DC are shipped in pallets and stored on the racks and aisles which provided easy access to the products. The EU standard pallets, which The Company X uses, have the dimensions 800mm X 1200mm.



Figure 19: Halmstad DC interior

Development of storage systems was essential issue for Company X. The correct choice of the storage system allows for maximum utilization of storage capacity, and thus makes the operation profitable warehouse.

The first place in overall Company X's concept of storage system solution defines that it must be economical. Company X's economic success is ensured by the planning and implementation of storage systems which considered from the standpoint of the interests of the whole company and being the only part of the general concept of the warehouse.

One of the most important parts of the process when Company X receives the product in their main warehouse in Halmstad is sorting. The benefit of sorting is to reconfigure freight as it flows from origin to destination.

The Company X uses order assembly type of sorting which illustrated below:

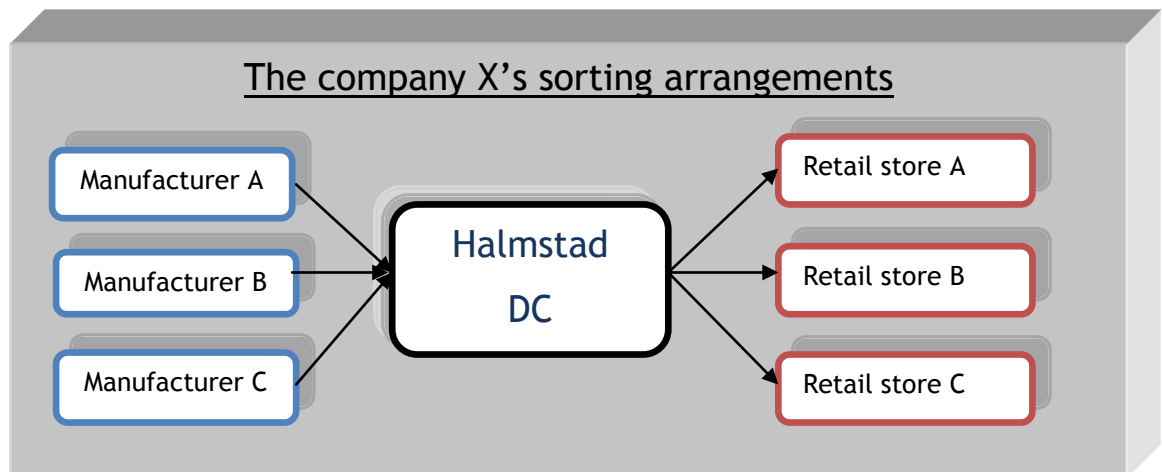


Figure 20: The Company X's sorting arrangements (Adapted from Bowersox, 2010, 251)

The benefit of this system is that products manufactured and assembled delivers directly to Sweden, to the main warehouse and from there after sorting is done proceeds to retail stores in Sweden. This sorting system helps to reduce time between DC and retail stores deliveries.

The majority of products arrive to DC in large amounts by truck shipment. The first handling activity which Company X's performs is unloading. This made mechanically with the help of lift trucks, conveyors and manual processes. The second stage is sorting and placing pallets to the place of storage. The third stage is picking goods in according to retail stores order. The final stage is shipment to retails stores.

Picking system

During the order fulfilment, load configuration process goes through three stages:

- picking the goods on the orders of the retail store
- complete the full retail store's order in accordance with its application
- complete the order for sending to retail stores for the decentralized or centralized delivery.

There are several schemes for picking the system, which include different combinations of the following:

- original position with respect to the cargo selector (static and dynamic)
- movement of cargo space in the selection (one-dimensional, two-dimensional)
- implementation of cargo screening (with and without the technical help)
- the degree of order complete: centralized - the selection of goods at the same time for multiple retail stores and decentralized - for one retail store

Company X's management of cargo moving is defined by technological and serving equipment possibilities:

- in an independent manual mode
- in automatic mode, the local supervision with the remote control
- in automatic mode with the remote which is located outside the racking aisle
- using mode "online" (automatic control of the computer)

To make the shipment process more economically efficient deliveries to the retail stores are made twice a week, or when the truck is fully filled with a good. This helps company to save money on half-loaded trucks shipment. (Interview with Company X's CEO 2: "Logistics in Company X")

The negative aspect of this system is that customers should wait sometime a week to receive a demanded product in the store.

4.6.3 Warehouse Management System (WMS) at the Company X

"Before The Company X's picking routines were far from optimal. Once articles were picked they were manually registered and it was difficult to confirm exactly what had been sent and to where. It was difficult for people in the warehouse to compile proper picking lists as they had neither the tools nor the routines to do this effectively. There was no adequate traceability from picking to dispatch and arrival at the final destination. Company X's IT system was over 20 years old and it was clear to the management that it could no longer cope with active expansion". (Company X web source)

At 2007 Company X logistics system in the warehouses was equipped with new WMS ASTRO from "Confess Logistics" that implemented:

- receipt of goods (delivery, unpacking, labelling, returns);
- placing the goods in warehouse locations;
- order picking (selecting the shipment method, order processing and merging, order picking, supplementing);
- shipment (packing, loading, distribution);
- stock management (stock level monitoring, stocktaking, warehouse operation tracing, blocking, data management, statistics and reporting).

"The changes we have implemented have made a huge difference to our logistics routines", says Logistics Manager for RETLOG, Company X's logistics subsidiary. "Our previous system was not coping with the increasing volume of goods we are handling. Now our picking rou-

tines are extremely secure with hardly any faults. That's great when you consider we handle 100,000 pallet places along 9.3 kilometres of truck aisles". (Consafelogistics.dk)



Figure 21: The Company X's WMS equipment examples

4.7 Identified problems and improvements suggestions.

Having understood the process after the author's case study, there are some problems were defined. Issues listed below have been introduced to the Company X CEO on the second interview. After the evaluation of suggested issues were admitted and permission for the further investigation and analyses have been granted.

1. There are certain risks the Company X meets by using vertical Integration
2. Not enough often deliveries from DC to retail stores
3. Absence of WMS In retail stores similar to DC in Halmstad
4. Absence of any kind of security system protecting products from thieves in the stores

Further, there are detailed analysis of each problem and possible suggestion on how Company X might act to solve those problems.

Risks of using Vertical integration

Like the various departments within a company, also various organizations operating in a supply chain pursue their own goals by trying to benefit from a partner competing with each other. This leads to the following negative consequences:

- There is uncertainty of supply chain, for example, because of the wide fluctuations in demand and the lack of exchange of relevant information between partners
- To compensate for the uncertainty created by the increased insurance reserves, entailing increasing the costs

- Supply chain is slow to respond to changing conditions, in particular, to changes in demand
- There is no trust and confidence as a result of long-term and mutually beneficial cooperation, which does not develop long-term plans for joint development, leads to conflict relations

Vertical forward or backward integration has strategic sense, only if it strengthens competitive advantage of the company at the expense of reduction of expenses or differentiation strengthening.

Complete or partial refusal of vertical integration, if the disadvantages (increased investment, increased risks, more complicated and slow updating of technology, less flexibility in making changes to the product) are surpass advantages (better coordination of production flows and transfer of know-how to link to link, specializing in technology, internal control over all operations, large economies of scale, the approximation of the production to sales and market), it is quite possible, although there are ways to achieve the benefits of vertical integration to avoid its shortcomings.

To recommend to the Company X to pay attention to long-term relationships with particular partners there is a need on a further research. By knowing of profits and losses in numbers for a particular period of time (for example 3-5 years) this problem might be more clear for understanding.

Unless the Board of Direction of the Company X satisfied with current situation, this issue of supply chain management may remain untouched, till financial, marketing and other supplementing researches done. This case might be a suggestion for further research.

Multiplying of delivery quantity from DC in Halmstad to Retail stores

As it been mentioned above, Halmstad is the main warehouse in Sweden, which receives all products directly from manufacturers. Currently, the Company X uses only truck shipments and decentralized deliveries. This system, indeed, save a lot of money for the company but from the other side cause the luck of Just-In-Time assortment fulfilment.

The solution for this problem might be improvement transportation for Just-In-Time delivery. JIT strategy helps to reduce inventory and avoid delays.

Halmstad is the place with the well developed railway system. The Company X might use railway as the extra source of product delivery in smaller amounts and in shorter time period.

This method will be cost efficient because delay in product delivery mean delays in product sales.

Here are several shipment factors which affects sales in the Company X retail stores:

- Right choice of shipment method
- Right vehicle size
- Right route planning
- Deviation reducing

Besides increased sales and customers' satisfaction Just-In-Time strategy:

- Lowering overall cycle time and providing services faster
- Timely responding customer needs
- Reducing lead time
- Reducing storage costs
- Reducing material handling costs because there is less material to be moved to and from storage (Harrison & van Hoek 2005, 125-132)

Upgrading WMS in retail stores

Following inventory from acceptance to customer purchase, and making figures accessible to supply chain partners and customers, have turned out to be a fundamental feature of successful supply chain effecting.

Nevertheless the Company X uses up to date software in its main warehouse in Halmstad, retail stores suffers of absence of good WMS software. The program used for stores' use is a Nobis, which provides limited information about product itself and its availability. When the retail store receive product there is no possibility to scan each and every product. There is only information in Nobis, which comes from Halmstad. Retail stores have no clear information of supply chain, and facing the risk to be outdated and no longer cost effective for particular business requirements.

The Company X should have a complete understanding of the benefits and limitations of its current system. The company need to invest in applying new WMS or upgrading existing one that will help it to minimize the losses and helps to control and inventory of production in the store and in the store's warehouse.

The Company X need to able to trace inventory quickly and to provide its customers with real-time information of inventory levels in order to provide best service and increase sales level and customer satisfaction.

The last, but not the least problem was defined during the process is the lack of any type of security system protecting products from thieves in the stores.

Even this topic is out of study scope there is need for board of direction to pay special attention to this problem. By saving on logistics the Company X lose much more money on robbery. Annually there are about 350 police reports per store. The lack of investments in to security system causes huge losses for company. Only in retail store in Örebro city the Company X lost 1.2 million krona at 2011. (Financial report 2011)

A current security system includes approximately 30 cameras in 4000-6000m² area, which is obviously, not enough for such big area. No alarms on the products, security gates or guard officer in the stores. (CEO Interview 2: "Logistics in Company X")

Recently there are some discussion concerning this problem are kept on the managerial level in the Company X. Nowadays it is one of the biggest problem of every retail stores in Sweden. It is a strong need for the Company X to investigate the case and to invest money in to security system improvement.

5 Conclusion

The goal of this work was to study theoretical bases of Supply Chain Management system and partly logistics processes in retail companies and to analyse how theory is implemented in practice on example on Company X. The Company X is the largest suppliers of automobile parts, accessories, tools and chemicals in the Nordic countries.

The reasons for the positive evaluation of supply chain management work and logistics operations are: the lack of interruptions in the supply of production, growing stocks and minimum number of products with defects, lower supply costs, well-established system of delivery, sorting and picking operation at the main warehouse and many others.

But after careful studying of the company's current affairs related to the topics of this thesis, shortcomings in various areas were revealed.

The company experiences difficulties in Just-In-Time delivery products from its DC to retail store. Managing directors pays not enough attention to this issue and forgetting that Just-In-Time deliveries provide increases in sales.

For improvement of purchasing activity at the enterprise ways of optimization of purchases and automation of management process are offered. That will help to lower warehouse stocks

and more effectively to operate system of deliveries of production, and also will make for the enterprise additional profit.

Also were revealed problems with lacking of financial investment in to such areas like retail stores' inner activity. Security in the stores and up to date warehouse management system are most important parts in the chain of activities for stores' smooth operation and increasing of sales with minimum financial and labor costs.

All improvement suggestions which are given in this thesis have been made with taking into account the current activities in the company.

The management of the company is heavily concentrated on amounts of purchases, new supplier search, contracts conclusion and assortment expansion. But even though the Company X is big International Corporation, the final recommendation is to not leave a side inner activity and pay good attention on a company's activity between main warehouse and retail stores. Retail store manager should concentrate their power to improve WMS and thief protection.

Besides existing gaps, the Company X in general has continuous growing in sales, expanding the range of product assortment and leaving far behind its closest competitors in the same market niche.

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