Benefits of ERP system usage for shipment booking process

Case study: Stora Enso Oyj

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Abstract

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Abstract

The thesis is focusing on the enterprise resource planning system usage for shipment booking execution. The aim of the thesis is to identify the benefits that the use of enterprise resource planning system can bring to the company's operations.

The study is implemented based on an example of enterprise resource planning software usage in a case company- Stora Enso Oyj. The performance of shipment booking processes in the case company is aimed to be evaluated.

Qualitative data methods are used in the research for data gathering and analyses. Observations are done while working in a case company with an everyday enterprise resource planning software usage. Interview are implemented with the long-term employee from the case company.

As a results of the study, the benefits of enterprise resource planning system usage for shipment booking are identified and presented in detail. Moreover, research presented ideas for further ERP system development to improve efficiency of operations handling.

Keywords

Enterprise Resource Planning, Supply Chain Management, Shipment Booking

Contents

1 Introduction and research methods

1.1 Background

The ever-increasing competition between companies encourages them to constantly search for development ideas to remain competitive. Likewise, these companies seek for solutions to improve the efficiency of operations and increase the value of a company among other businesses. The boost of efficiency is being widely achieved by connecting business functional areas into a joint system. This is being attained via implementation of enterprise resource planning system into company’s operations (Laulita et al. 2022, 50).

Enterprise resource planning system (ERP) is a software widely used by companies for performing business operations. ERP systems integrate company’s operations, solving significant parts of business operations, including supply chains, sales duties, accounting, and human resources operations. Increase in the success of a company’s operations is being achieved through such improvements as the growth of efficiency in addition to easiness of control of business areas (Pracita et al., 2018 according to Laulita et al. 2022, 44).

Even though these systems are widely used, they remain in demand and are constantly developing in providing improvements for companies. The purpose of the topic is to identify the benefits obtained by companies from ERP system utilization. In additional, the thesis is aimed at providing the overview of executional change of the shipment booking process after ERP system implementation. Thereby the research is focused on emphasizing the value of ERP system usage for supply chain functions.

1.2 Objectives and delimitations

Objectives

The research represents a practice-based analysis of the effectiveness of ERP system usage, based on software represented in a case company. The main objective is to understand in detail handling of operations via ERP system.

Thesis work is intended to contain deep research on concept of ERP systems and their value for business functions. Furthermore, the purpose of research is to evaluate how shipment booking process is being managed via ERP system. Accordingly, the key benefits from ERP system usage for organizations are being discussed and obtainable in the research. Therefore, this analysis is aimed at providing the complete image of the ERP system's efficiency.

The research idea of the topic is evaluation of the efficiency of the business functions performance in a case company. Aiming to achieve the thesis goal, comparison of effectivity of operation's performance before and after the implementation of ERP system will be executed. Moreover, research represents ideas for further ERP system development aiming on improving efficiency of operations handling.

Thereby, research is aimed at providing an analysis of working with an ERP system both from the author's personal experience as well as from the perspective of people who have been working in the system for a long time. After research will be conducted it would have a role of solid and convincing answer to the question – What are the benefits from ERP system usage for shipment booking management operations?

Delimitations

It is believed that this topic has great research potential and could be analysed extremely deeply from diverse perspectives. Hence, delimitations are established to narrow down the research field and to have precise qualitative research outcomes.

The first delimitation for this research is taking into consideration only the companies that operate in the manufacturing industry and have thus a high-level need for cooperation within departments for data exchange. Moreover, the focus on manufacturing companies is rationalised by conducting qualitative research methods in manufacturing companies. The case company is an international and large enterprise. Therefore, these characteristics represent a second delimitation. Depending on the scale of the company, business functions and operations may differ. Hence, this delimitation is specified.

Focus on the shipment booking operations is the third delimitation for this research. Originally, the research is aimed to analyse all supply chain management operations. Nevertheless, after consideration, the topic was narrowed down into transportation management functions and later to precisely shipment booking operations.

The research is done while working as a supply chain coordinator at the case company- Stora Enso Oyj (Stora Enso). SCCs are divided into teams based on the countries of order origin. The work, on which the research is based is done in an overseas team. The order's origin countries being observed include China, Malaysia, Vietnam, Myanmar, Philippines, and Hong Kong. The choice of the countries is justified by the fact that the work is done as a substitute for the permanent worker during her summer vacancy period, whose areas of responsibility include these countries. Orders originated from other countries, other teams and other mills have differences in the order fulfilment process, thus they are not being evaluated during this research. Hence, the research is limited only to this market area.

1.3 Research methods

The primary data for this analysis is obtained through qualitative research methods- observations and interviews.

The secondary data acquired earlier in this thesis is being applied to gather primary data. Throughout the following qualitative research, it is evaluated how supply chain operations are done via ERP system.

The research is made while working at Stora Enso as a summer substitute in the position of supply chain coordinator for four months during the period: 09.05.2022-26.08.2022. Work has been done with everyday access to ERP system. Thus, it is believed that such type of information gathering provides reliable and trustful outcomes for the research. As a goal, this analysis provides an overview of everyday work with software to evaluate the convenience and benefits associated with performed operations.

Observations

Observations are executed on daily basis, working in a case company as a Supply Chain Coordinator and performing working tasks using ERP system. The data, gathered from this research method is aimed to provide following outcomes:

- The detailed understanding of operations done in the supply chain coordinator position.
- Evaluation of overall convenience of handling operations in the Fenix ERP system.
- The effect of execution of operations via ERP system on the working efficiency.
- Benefits from ERP system usage for shipment booking operations.
- Proposition of the ideas for improvements of the company's operations.

It is believed that this method provides a reliable and fair overview of case company's operations.

Interview

Conduction of the interview with the long-term user of ERP system in a case company is made with the aim to provide a decent and trustworthy view on the effect of ERP system usage on company's operations. An interview is intended to provide solid data for further analysis in this research. Topics raised during the interview are selected based on the observations and supported by secondary data acquired during literature research. Conducted interviews cover such topics as:

- Fenix ERP system implementation.
- Handling order fulfilment operations before Fenix ERP system implementation.
- Shipment booking process handling before Fenix ERP system implementation.
- Benefits, noticed after Fenix ERP system implementation.
- Viewpoint concerning the convenience of the Fenix ERP system for everyday operations execution.
- Suggestions of the order fulfilment operations improvements from the interviewee's point of view.
- Outlook on the researcher's ideas for order fulfilment operations improvements.

Therefore, interview is aimed at consolidating the previously obtained data, including observations and theoretical background. Consequently, conclusions are aimed to be made based on the information fetched during this dialogue.

1.4 Research Questions

During the analysis below research questions are aimed to be answered and have a solid role in the thesis outcomes, generalising executed analysis.

The main research question of the thesis is- **What are the benefits from ERP system usage for shipment booking management operations?**

Furthermore, following additional research questions are aimed to be answered for providing a more detailed outlook.

- How ERP system changes execution of shipment booking operations from supply chain coordinator side?
- How shipment booking process can be improved for efficiency increasement?

It is believed that by answering these questions, the complete understanding of shipment booking operations handling in case company is being provided.

2 Enterprise resource planning system

2.1 Introduction to enterprise resource planning system

Enterprise resource planning system is the fundamental concept of this research. The definitions of the topic are collected and gathered from reliable literature sources for providing an understanding of the concepts.

> *Enterprise Resource Planning (ERP) systems are core software programs used by companies to integrate and coordinate information in every area of the business. ERP programs help organizations manage company-wide business processes, using a common database and shared management reporting tools (Monk & Wagner 2013, 1).*

> *ERP as a phenomenon is an enterprise-wide, integrated planning and steering concept. ERP is about interaction between all business processes of an organization and the interaction with the organization's environment, such as customers, vendors, and business partners (Hoeven 2009, 18).*

Recapitulate, ERP system represents a software program which combines data from different departments, stored in databases or softwires into a joint system, where all responsible people can access the data for performing operations in their field. Operations vary from one software to another, based on the specifics of companies using it. The most significant aspect lies in the system being integrated and shared within the company (Monk & Wagner 2013, 3).

ERP system allows reduction of the number of programs used for performing company's operations by combining various functions within one system. Consequently, the use of ERP systems allows users to store, change and transfer data easily. Furthermore, users can perform various functions and operations by coordinating the whole process represented in the company (Monk & Wagner 2013, 3).

ERP system allows connection within departments. This aspect is essential and beneficial for company. Nonetheless, these departments are different and perform completely diverse tasks, it is crucial to maintain a connection within them. Since this leads to the data being exchanged for accomplishing the company's targets, improving efficiency and overall organization's performance (Monk & Wagner 2013, 1*)*.

Hans van der Hoeven (2009) states in his work that ERP system's concept idea includes covering all business processes that are represented in a company.

> *ideally, all employees of a company work within the ERP system to enter sales orders, update outstanding vendor invoices, look up the storage location of certain items in the warehouse, evaluate the effect of a specific sales campaign, plan production jobs in a certain week, register absence of employees and so on* (Hoeven 2009, 7).

Therefore, with the aim to gain the most benefits from ERP system usage, software should include data and operations from all business functions represented in the company (Hoeven 2009, 7).

2.2 Functional Areas connection in enterprise resource planning system

ERP system connects data from functional areas of operation within a company, such as marketing and sales, supply chain management, accounting and finance and human resources (Monk & Wagner 2013, 2).

Table 1 below represents the overall idea of the types of business functions and departments, which could be integrated within ERP system.

Functional area of operation	Marketing and Sales	Supply Chain Management	Accounting and Finance	Human Resources
Business functions	Marketing a product	Purchasing goods and raw materials	Financial accounting of payments from customers and to suppliers	Recruiting and hiring
	Taking sales orders	Receiving goods and raw materials	Cost allocation and control	Training
	Customer support	Transportation and logistics	Planning and budgeting	Payroll
	Customer relationship management	Scheduling production runs	Cash-flow management	Benefits
	Sales forecasting	Manufacturing goods		Government compliance
	Advertising	Plant maintenance		

Table 1. Examples of functional areas of operation and their business functions (Monk & Wagner 2013, 2)

The table 1 represents the overall idea of the types of business functions and departments, which could be integrated within ERP system.

Historically, each functional area was strictly separated from each other, likewise, there was no interconnection in-between and data exchange. This approach caused appearance of wrong decisions being made during the operations performance. In addition, understanding of the work of company suffered and effectiveness of company's operations was low respectively. Thereby, ERP system developed exactly in the direction to ingrate progressively more departments, so that data exchange was mostly achieved (Monk & Wagner 2013, 3).

ERP is a system that combines all operations and includes the company's processes from the order entry to the final delivery. Since the program includes the whole process, it accordingly includes operations performed by different departments, which is the reason for the importance of taking into consideration different business functions. (Monk & Wagner 2013, 3*).*

An example of business operation's performance is presented below for a better practical understanding of the idea of ERP system usage.

> *purchase entered in the order module passes the order to a manufacturing application, which in turn sends a materials request to the supply-chain module, which gets the necessary parts from suppliers and uses a logistics module to get them to the factory (Shebab et al. 2004, 362).*

This example shows the necessity of taking information from one department and passing it further to another. Thereby system allows smooth and continuous data flow of operations in the process chain. This is done by centralizing all information in one system with giving access to all stakeholders in a company who require this information for performing operations. This leads to the idea that without the data exchange further steps in the process cannot be done properly (Shebab et al. 2004, 362).

Departments and operations included in ERP system may differ from one organization to another, likewise, are different depending on the system. The reasoning lies in the difference between each company and the inability to create one standardized way of performing operations for all organizations (Shebab et al. 2004, 362).

2.3 Benefits from ERP system usage

It is known that ERP system is valuable for companies' operations in many ways. The benefits of using ERP system are broad and affect the whole company. The most significant benefits are chosen after the theoretical research is done and are represented below.

Expansion of collaboration within company's employees

As a consequence of data exchange across the departments, collaboration in company improves by understanding the importance of sharing the data. Employees comprehend operations both within their department and across others. Consequently, degree of awareness of importance of cooperative work for the general goal increases. In addition, joint work decreases errors occurrence that is caused by insufficient data entry or incorrect understanding (FinancialForce.)

Business functions efficiency and productivity increasement

Productivity increasement is achieved by computerisation of the processes, that otherwise require a lot of time for performing. The examples of long-taking operations include preparing documentation and actions related to stock tracking and allocating. ERPs system assists to redistribute working time and provides users possibility to focus on the requiring more effort tasks. Thus, by using ERP system more operations can be done in the same amount of time. Besides, automated system decreases the time required for data entry. Information input by ERP system is trustworthy which prevents incorrect data input and further errors appearance in the process. Which in return saves time, that could be wasted for correcting these errors. Hence, the occurrence of issues, undesirable for the whole company decrease (FinancialForce.)

To conclude, by using ERP system employees save their working time and utilize it more effectively for projects that require a human approach and decision-making process.

Cost reductions and savings

Company's cost saving by using ERP system is achieved by different ways. Firstly, saving is achieved by decreasing of extra staff hiring process. This value consists of costs related to wages, training and other related to personnel. The cost reduction is being achieved by automatization of processes. Likewise, the increase in work does not require an immediate hiring process for new employees.

Secondly, the common reason for extra costs lays in fees from expired deadlines and late deliveries. These issues occurrence is caused by incorrect data entering in the beginning of the process or wrong calculations (FinancialForce.)

Therefore, automatization and accurate data work beneficially for the company and lead to cost savings.

Customer relationship enhancement

System's integration, provided by ERP system, gives the possibility to see up-to-date extensive data from different stages of order completion, such as customer information and order specifications. Data is stored conveniently in the system and can be easily accessed. Consequently, customers get accurate and relevant data updates concerning the order. Likewise, such approach supports customer service with more personalized and reliable solutions concerning their claims or questions. Which in return improves customer satisfaction with the order (FinancialForce.)

Furthermore, customer service provides both order accessibility throughout the flow of the product in the system and completion of an order on time following all agreed terms. This also is being achieved due to the usage of ERP system which provides users with accurate data and accessible order information (McCue 2022.)

Easiness of inventory/stock control

Inventory control, timely allocations and prompt actions play a vital role in supply chain management. The lack of prompt actions in this operation causes extra costs and outdated inventory. Such issues are being solved by ERP system usage. Moreover, transparency is created in the system for allowing checking inventories in different countries. Furthermore, ERP system has inventory systems which allow seeing results that are accessible by calculations (FinancialForce.)

Streamlined forecasting and risk management

ERP system streamline risks predictions and issues occurrence further in the process. Therefore, employees beforehand oversee possible negative outcomes and make actions to prevent them. Due to the fact that system predicts risks by itself, less time is wasted on performing risk management and solving possible issues becomes easier. This is being likewise achieved by increased transparency of operations. For instance, by using ERP system, the evaluation of production level, speed, and labour is performed for taking action immediately. Hence usage of ERP system prevents possible negative issues for instance because of growing demand (FinancialForce.)

Furthermore, with the use of ERP system, forecasts and predictions made are more accurate since they are based on more accurate and wide-ranging information from the data stored in one database (McCue 2022.)

Transparency and visibility of operations

Storing all data in one software with access granted to stockholders, requiring this information has a beneficial impact on company's operations. Transparency and visibility of data and operations allow generation of faster and better solutions since all important characteristics and indicators can be taken into consideration (McCue 2022.)

User-friendly, centralized data

The time spent performing a certain task is decreased by easily searchable and centralized data in the ERP system. All data is easily accessible which makes it easier to be fetched. For instance, stakeholders including higher management may request reports which are done quickly by the system.

In overall data is easy to be fetched since it is centralized and filtered.

Furthermore, it was also noticed that many ERP systems have versions available for different types of devices, such as tablets or smartphones. This also leads to accessibility improvements. Since even people who do not have access to their computer version of ERP system at some point in time can check order status or other details in the mobile version of the software. This feature is genuinely relevant and convenient nowadays since people use different devices instead of computers (McCue 2022.)

Data security

Security nowadays is an issue for many companies, with stealing confidential data becoming perceptibly more often thing. Thus, it is extremely important to store the data in a reliable system. Licenced ERP system provides customers with first-class solutions to store data securely. By storing data in ERP system, company is protected from stealing confidential information (FinancialForce.)

System expansibility

ERP systems are continuously developing and react rapidly to fast-changing business conditions. Accordingly, if changes are happening in a company, new functions are introduced or the need for any other changes appeared, ERP system is adjustable conferring to these changes with the purpose to serve the company on the best level.

Adjustments reduce the costs, which could appear for implementing the new system, using ERP system there is no such need (McCue 2022.)

3 Supply chain management

3.1 The concept of supply chain management

This research is focused on supply chain management (SCM) functional area. Thus, the concept of SCM is represented below.

According to Hugos (2011) Supply Chain Management is defined as:

> *The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole* (Mentzer et al. 2001, 18).

Another definition presents Supply Chain Management as

> *centralized management of the flow of goods and services and includes all processes that transform raw materials into final products* (Fernando, 2022).

To sum up, Supply Chain Management include all traditional logistics operations in addition to processes from other departments whose data likewise needs to be taken into consideration for the improvement of efficiency and overall performance (Hugos 2011, 4).

In supply chain management it is essential to see the big image and keep all aspects of order fulfilment in balance, consequently, they would beneficially affect the whole supply chain (Hugos 2011, 4).

Supply chain according to Hugos (2011, 5-6) is divided into five areas:

1. Production represents operations-related planning of the type and number of products that need to be produced to satisfy the demand. The demand is not a stable thing; thus, planning should be done continuously on a day-to-day basis to react to changing market situations. Author mentions that this activity represents managing master production schedules, taking into consideration factory's capacities, high-quality level, equipment maintenance handling labour workload balance.

2. Inventory- planning and stabling the amount of inventory kept in warehouses. Inventory level indicators should be kept in balance, so that goods/materials would be enough for unexpected situations, such as increased demand or shortage of raw materials. Nonetheless, it is important not to have too many inventories since their holding might be expensive and affect negatively on financial conditions of the

company. Thus, this indicator should be well thought out and planned on an everyday basis.

3. Location. Decisions concerning the location are made from the very first steps in supply chain development. Decisions are related to the location of manufacturing centers, warehouses, and other physical property. Important factor to consider is the differences in prices and conditions in different countries. Thus, specifics should be taken into consideration for choosing the most efficient and economically appropriate location for company's facilities. Furthermore, location is dependent on the place of final delivery, so it will have convenient access for delivery.

4. Transportation area includes making decisions on the type of transportation needed to be chosen for delivery of the products from the manufacturing area to warehouses and later to the final customer. Means of transport have their advantages and disadvantages which are needed to be discussed according to the need.

5. Information area represents data storing, exchange and usage in the company. Accuracy and usage of data are crucial for making the right decisions. Therefore, this aspect should be carefully considered for finding the best solutions for storing and using information. It is determined that information is essential for operations performance. Thereby incorrect data lead to decisions being incorrect and cause negative outcomes.

4 Logistics

4.1 The definition of concept of logistics

Logistics process includes such activities as material receiving from suppliers with their further movement within a company’s facilities. In addition, logistics covers movement of goods to the customer (Tseng et al. 2005, 1658).

> *Logistics describes the entire process of materials and products moving into, though, and out of firm* (Tilanus, 1997 according to Tseng et al. 2005, 1658).

Summarizing, logistics represents the movement of goods or services from manufacturing area to warehouse and further to destination. Supply Chain Management for its part connects logistics operations with activities from other company’s departments for achieving the common goal of effectiveness improvement (Tseng et al. 2005, 1658).

4.2 Modes of transportation in logistics

Nowadays there are four major modes of transportation used in logistics: Road, Sea, Air and Rail freights. The choice of the mode is dependent on place of departure and destination of shipment, weight of goods, desired cost, and other characteristics (Hugos 2011, 14-15). During work in the case company modes of transportation used for orders were different but the most used was maritime logistics. Therefore, this mode of transportation is explained further in the research.

Maritime freight (Ship)- type of transportation that can be used for a long-distance shipment, usually cost-efficient but slow. It is perfectly fitted when delivery is within countries distinguished by the water and there are harbours, suitable for the deliveries (Hugos 2011, 14-15).

5 Shipment booking process

5.1 Introduction to shipment booking

Shipment booking process is the key transportation management process studied in this research. Thus, a step-by-step procedure is described below for providing a detailed description for the readers.

Shipment booking is the process of reservation space in a vehicle for transferring goods from the manufacturer to the customer. Booking is generally done via courier service providers or in-house company’s courier services (Freightcourse.)

Overseas maritime shipping is done with the use of containers. Such type of transportation is used for the orders on which observations are being done during this research. Thus, it is important to explicate shipping via containers topic to provide readers with an understanding of the most fundamental aspects of it (Freightcourse.)

5.2 Shipment booking step-by-step process

Filling in cargo requirements

The first step in shipment booking process requires filling data concerning the order details. Such details are essential for shipping companies to determine the type and containers needed to be booked. The data needed for the creation of correct booking require details presented in table 2 below:

Cargo:	Shipment:	Container:
• Type	• Consignee	• Type
• Dimensions	• Destination	• Size
• Weight	• Permits	• Quantity
• Special Handling	• Documentation	
• Load Type	• **Cargo Ready Date**	

Table 2. Required for shipment booking information (Freightcourse.)

This information's accuracy should be verified to avoid possible problems in future because of incorrect data (Freightcourse.)

Shipment provider selection

Once, all necessary data is collected, organization need to select the shipment provider, suitable for their specific case. Big companies typically have a valid contract with several shipping provider companies and well-established operations with them. In such cases, companies choose the service provider depending on previous shipments done through it. Shipping lines have different time frames, shipping conditions and routes, so the selection process needs to be careful about each order (Freightcourse.)

Shipment information and time framework

Shipment information can vary from one case to another. Thus, it is vital to check with each courier company type of information they require. The most common information that needs to be provided includes:

- *shipper details*
- *consignee details*
- *cargo ready date*
- *pickup details*
- *cargo type*
- *notify party*
- *vessel name*
- *number of containers*
- *booking instructions (Freightcourse.)*

Concerning timing matters, it is crucial to agree on shipment dates, including estimated time of arrival (ETA) and estimated date of departure (ETD). The dates need to be agreed upon so that timings are suitable for all parties: product provider (for instance, manufacturing company), the courier company and the customer (Freightcourse.)

B\L Requirements selection

Bill of Lading (B/L) is a crucial document demanding for shipping performance. B/L requirements are agreed upon between customer and courier company. Every customer can have their requests concerning the information needed to be presented in B/L. Courier service's responsibility is to check if the needed information is acceptable to be stated in a document or not. Thus, it is essential to decide with a customer on their B\L requirements (Business Partner magazine 2020.)

Cargo preparation

After clearing all documents related matters, cargo needs to be prepared for shipping. The cargo needs to be ready on agreed date and comply with the characteristics transferred to the cargo company. In addition, special requests required by the customer, for instance politicizing and keeping space in between containers should be fulfilled (Freightcourse.)

Further, the research concepts and processes are evaluated from theoretical point of view are compared with outcomes gained from qualitative research performed in a case company.

6 Case Company

6.1 Case company overview

This research is done based on the example of ERP system implementation and usage in the case company- Stora Enso.

Stora Enso is an international big scope Finnish-Swedish pulp and paper manufacturing company, established in 1998 via a merger of two companies: the Swedish company called Stora Kopparbergs Bergslags Aktiebolag and the Finnish company called Enso Oyj (Stora Enso a). Headquarters are now located in Helsinki, Finland and Stockholm, Sweden (Stora Enso b). Nowadays companies orient on developing the top solutions concerning renewable materials, based on forest and trees materials (Stora Enso c).

> *Stora Enso develops and produces solutions based on wood and biomass for a range of industries and applications worldwide, leading in the bioeconomy and supporting our customers in meeting demand for renewable eco-friendly products* (Stora Enso c).

Company is oriented on achieving ecological-friendly goals, focusing on producing low-carbon products. The outcomes of the company's production include everyday items from such segments as

> *building, retail, food and beverages, manufacturing, publishing, pharmaceutical, cosmetics, confectionary, hygiene, and textiles (*Stora Enso c).

Following key facts concerning the operations of the company are represented for understanding the scope and orientation of the company. For the statistics of the year 2021, company employs 22000 people and consists of six divisions which are: Packaging Materials (the one which research will rely on), Packaging Solutions, Biomaterials, Wood Products, Forest, and Paper (Stora Enso e). Company is international and operates worldwide, its units are located in such countries as Finland, Sweden, China, Austria, Estonia, Latvia, Lithuania, Belgium, Brazil, Czech Republic, Germany, The Netherland, Poland, and Uruguay (Stora Enso d).

In 2021 Stora Enso had total sales of EUR 10.2 billion and an operational EBIT- EUR 1,528 million. Company's shares are

> *listed on Nasdaq Helsinki and Stockholm (Stora Enso e).*

The huge scale of the production of a company can be justified likewise by the annual production capacity listed on company’s website:

5.9 million tonnes of chemical pulp

2.3 million tonnes of paper

5.3 million tonnes of board

1.4 billion square metres of corrugated packaging

5.8 million cubic metres of sawn wood products, including 2.6 million cubic metres of value-added products. A list of our mills and production capacities is available in our Annual Report (Stora Enso e).

Research concerns in particular operations done within the Packaging Materials division. This division’s focus is on production of packaging materials from virgin and recycled fibre. Concerning ecological outcomes, division provides customers with renewable and recyclable packaging alternatives for

food, beverages, pharmaceutical and transport needs (Stora Enso f).

6.2 Imatra Mill

Stora Enso has factories in different countries as a company operating worldwide. This research is focused specifically on the Imatra Mill in which observations and interviews are conducted.

Imatra Mill was founded in 1935 and is located in southern Finland, close to the city of Imatra. Mill is represented as two production units- Kaukopää and Tainionkoski. The production includes pulp and customer packaging boards.

This mill is one of the biggest mills producing consumer packaging boards among others in the world. List of products includes consumer board, pulp, and polymer coating. Nowadays Imatra Mills counts 1050 employees (Stora Enso g).

6.3 Fenix ERP system

The ERP system used at Stora Enso is called Fenix. This system was designed specifically for Stora Enso by TietoEnator- Finnish technology company, socializing on data, software, and cloud solutions (Tietoevry.) The system was implemented in 2000 and is used by Stora Enso oyj for 22 years by now. Fenix ERP system cannot be transferred to another company and is being used only at Stora Enso. This ERP software was designed with the goal to be aimed at the existing processes in the company (Tappi 2003.)

The goal of system implementation was the efficiency improvement of order handling and customer service operations. The system is known to be one of the first among similar ones created in the Paper industry. Fenix ERP system covers the whole Supply Chain of Stora Enso operations, which includes paper and board production (Tappi 2003.)

The main advantage of the system as ERP system lies in the collection of integrated data and operations from different departments into one system. Therefore, Fenix ERP system consists of data gathered from such departments as production, sales, and accounting (Tappi 2003.)

Information gained from open sources about the Fenix ERP system provides an understanding of how the operations were accomplished earlier. Following these sources, processes of company were divided within different systems, which in turn created the lack of connection within departments. In addition, such a way of operation’s performance caused slow data exchange, low transparency, frequent occurrence of errors and slow response to changes (Tappi 2003.)

Another convenience of Fenix ERP system is laid in its accessibility of information fetching for employees and stakeholders depending on their needs. Respectively, the needed for everyday operations data, such as production deadlines, produced quantity, product prices, stock availability and conditions of the delivery are available for rapid access through the system for further usage. As a result, this feature creates easy data accessibility, improves data transparency and in return decreases time for answering customer claims or solving issues. Furthermore, system is used within different mills, which allows information exchange on an international level. Therefore, following the order status is done instantaneously from any place in the world (Tappi 2003.)

Another remarkable feature of ERP system is program support on different devices. Thereby, details concerning the order can be fetched easily from different devices. Software is beneficial both for company and customer, reaching such goals as sales increase, delivery times shortage and overall effectiveness improvements (Tappi 2003.)

6.4 Supply chain coordinator job description

Supply chain coordinator (SCC) position job responsibilities, specifically at Stora Enso include coordination of the whole order fulfilment process from order entering to its final delivery to the customer. Coordinators represent the central connection point between sales, production, and logistics.

Daily tasks include working in ERP system- Fenix, as well as with other programs such as Microsoft Office applications and courier services websites. Nonetheless, the majority of operations are done via Fenix ERP system.

Job responsibilities of SCC include following:

- Order fulfilment coordination on a day-to-day basis.
- Documentation handling, including issuing and amending.
- Managing shipment booking operations. Specifically, booking requests execution, delivery timing amendments and verification of the data correctness.
- Communication with courier companies concerning shipping matters.
- Communication with sales and production departments concerning order matters.

6.5 Order fulfillment process

Order fulfilment process from the point of view of SCC is represented in the graphic below, each step is described more deeply further in the research. Order fulfilment is the main term, used in SCCs work. Thereby each employee’s responsibility includes ensuring smoothness of order fulfilment process including timely completion of operations within it and assurance of data correctness in the system.

The order fulfilment process is represented in the graph 1 below.

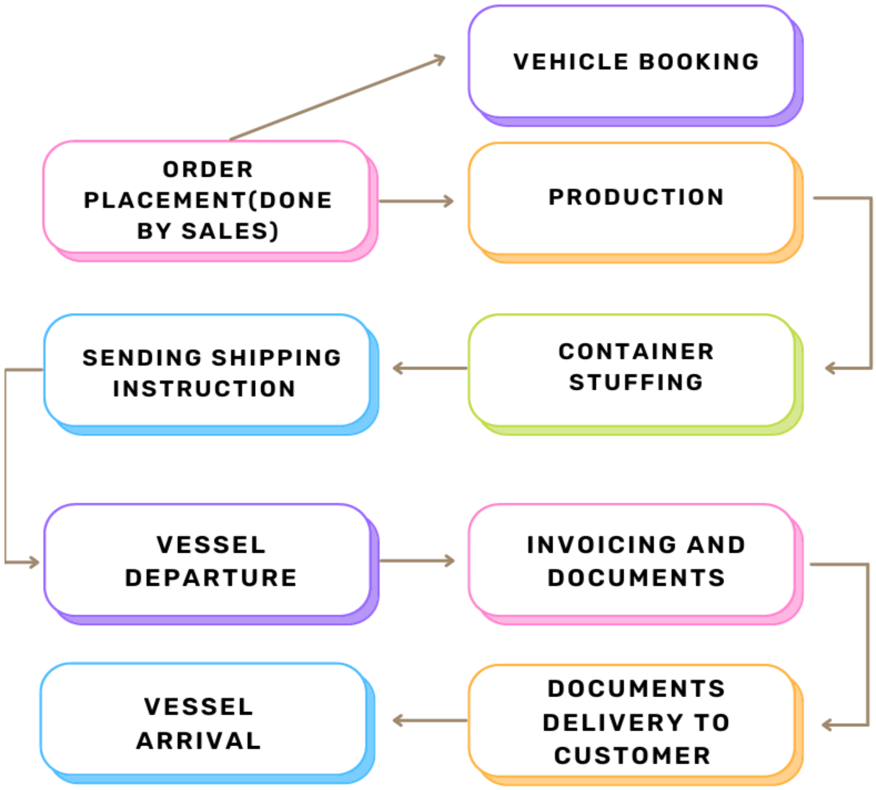

Figure 1. Order Fulfilment Process at Stora Enso Oyj

Order placement

The order fulfilment process starts with order placement. Order entering in the system is done by sales departments residing in the country where order is coming from. For instance, if the order is for a Chinese company it is entered by sales office in China. Entered order into the system contains all important details (quantity, type and dimensions of the product, customer details, special instructions for shipping, issuing documentation and other information that should be taken into consideration while handling the order). SCC is responsible for checking order correctness and the organization's ability to produce and deliver orders at the requested timings. As a next step after ensuring correctness, SCC confirms order in the system, hence it can be forwarded for further steps and visible to departments responsible for handling order further.

Shipment Booking

Shipment booking process needs to be started immediately- once the order is entered in the system to deliver the order on time later. Shipping instructions, entered by the sales office contain special shipping requests from the customer, preferred ways of transferring, carrier company, type, and number of containers.

As soon as an order is entered into the system sales office team sends an email to Supply Chain Coordinator with a container load plan:

> *A plan for the physical placement of items in a shipping container* (Effective Business Letters.)

Container load plan represents a list of items to be loaded on the container, including order numbers, weights, types, and the number of containers which should be used. In addition, loading plan provides a physical location of items within the container illustrated on the graph. SCC's responsibility at this stage is to check that the loading is organized in the most efficient way. Furthermore, it is essential to check correctness of weights and order numbers. After this checkup, booking request is the next step to be done.

The data needed for the booking request is taken from the load plan. When creating booking request fields containing the basic order's information are automatically filled in with information that needs to be only checked. This automated feature saves time for the SCC and increases efficiency. Information that needs to be entered manually by the SCC is Transportation units' details, taken from load plan: Transportation units' type, container type, number of transportation units and maximum payload kg. Shipping instructions needed for stuffing arranged on further steps in order fulfilment process can be fetched from notes button and SCC chooses the needed ones presented in the list.

After everything is filled in, a booking request needs to be sent to the department responsible for booking the vehicles. This operation is done by the system, booking requests automatically is being sent to the booking department for their acknowledgement.

The next step in shipment booking process is done by the booking department. According to the instructions entered in booking request team books order by contacting courier services. This step is done without any actions from SCC. Thus, convenience and effectiveness of this operation cannot be evaluated and discussed in this research. After shipment booking is done, its details are sent to the SCC and sales office emails. In addition, details are visible in Fenix ERP system for accessibility.

Production

Production is the step which is not so much controlled by SCC. The people responsible for production planning are Production Planners, they are planning the usage of materials needed for production to ensure the optimal, the most effective production (Workable.)

Nevertheless, coordinators assist to get the order in requested production slot. In addition, the cooperation between SCC and production planners happens when changes appear in the order handling process, such as over- or underproduction, customer's specific requests or the need for allocation/bypassing. In such cases, SCC and production planners need to take actions in coordination with each other.

From ERP system point of view, data exchange is done for the production department as well. SCC can see when orders will be produced, how much quantity et cetera. In situations when order is over- or underproduced SCC receive an alarm by email which allows him to make quick actions depending on the need. Examples of such actions include performing allocations, rescheduling order delivery and bypassing orders on production cycle to produce needed amount. In case of rescheduling, amendments affect shipment dates, thus they need to be changed and newly updated booking requests need to be sent by SCC.

Container stuffing

> *Container stuffing is the process by which goods are loaded into a container to be shipped* (Pacific Coast Distribution Ltd. 2016.)

Container Stuffing is done based on information provided in shipment booking. Stuffing cannot be done if information is not corresponding with the actual order details. Thus, it is essential to inform people responsible for stuffing well in advance whenever any changes concerning the order were done. Discrepancy may lead to the postponement of shipment and in turn entail unforeseen expenses. That is why being extremely careful is important for SCC even with the use of ERP system.

Sending shipping instructions

Sending shipping instructions, so-called Bill of lading instructions include the information for courier services required for the preparation of documents. This step is done after stuffing completion and the information about the containers is not changeable at this point. Instructions are taken from Fenix ERP system, where they are stored depending on the customer and easy-for-the-access and further usage.

Vessel departure

The vessel departure occurs after successful container stuffing. Until this step, it is essential to prepare the needed documents for the receiving destination and shipper. After each vessel departure, SCC receives the list of orders stuffed on the vehicle. Departure stage serves as the beginning of the issuing of all the original documents necessary for shipping.

Documentation managing

Preparation of documents needed for the shipping is the responsibility of the supply chain coordinator. The documents being made directly from Fenix ERP system are commercial Invoices, representing bills for the goods needed to be paid by the buyer to the seller (U.S. Commercial Service 2015, 138) and export packing list, which is a detailed list of the contents of the shipped cargo, including the weight and description of the contents of each container (The International Trade Administration.) System stores needed data for the documents and provide such data automatically. SCC's responsibility is laid in checking the document's requirements and the correctness of the data. Documents requirements for each order are stated in order status information and accessible quickly for SCC.

The main shipping document is Bill of Lading referring to the contract being made between the owner of the goods and courier service. It serves as a description of products and quantities agreed to be delivered (Bowersox et al. 2002, 377). The draft of Bill of Lading is sent to SCC from department, responsible for communicating with shipping service providers. SCC checks the correctness of draft of Bill of Lading according to company's guidelines and customer's requirements and sends back confirmed draft. When correctness of document is correct shipping service providers upload the original Bill of Lading on their website for further printing by SCC.

The other needed documents vary depending on country of destination and customer's preferences. Other documents that might be requested are:

Certificate of origin, representing the statement of the origin of delivered goods. The most common issuing organization for this document is the Chamber of Commerce (U.S. Commercial Service 2015, 139).

Letter of credit, documentary proof of paying to the exporter on agreed terms. It is handled and issued by the importer's bank for the exporter's bank (Cogoport.)

Documents delivery to the customer is done by DHL courier service. SCC's role in this step includes ensuring the correctness of data written in the documents, receiving documents timely from couriers, and sending them to customers under the agreed deadlines. These documents are exceptionally important for shipping, thus any errors or incorrectness in data lead to not acceptance of containers with goods by the port of destination and inability of a customer to receive the ordered items.

Vessel arrival

Vessel arrival is the final step of the order fulfilment process from the SCC's point of view. Nonetheless, if delivered goods appear to be incorrect, or damaged or there is non-compliance in quantity SCC is responsible for the coordination of the correctness of solving the issues.

As we can see from the description of order fulfilment process every step includes participation of more than one department. For fulfilment of every step data for consideration should be taken from different departments. This leads to the idea of the necessity of ERP system implementation into the company's operations.

7 Interview analyses

7.1 Introduction into interview

The interview was implemented on 23.08.2022 in Stora Enso's office in Imatra Mill. The chosen interviewee is Tarja Halme- supply chain coordinator, responsible for overseas markets. The area of her responsibility includes orders coming from China, Vietnam, Malaysia, Singapore, Myanmar, Philippines, and Hong Kong. Tarja Halme has been working in a company for 36 years, from the year 1986 (Halme 2022.) Thereby, Tarja has been working in a company before Fenix ERP system was implemented, thus it is believed that the information provided by her is reliable, trustworthy, and crucial for the research.

Throughout the interviewee’s whole working experience in a case company, the job duties included approximately the same tasks for 36 years. In overall her responsibility has always been coordination of the order fulfilment process. Nonetheless, at the beginning of Tarja’s career path at Stora Enso, she was only responsible for order handling. The invoicing duty added up to her responsibilities in 1999. Additionally, booking handling functionality moved under Tarja’s responsibilities after Fenix ERP system implementation in the year 2000. Continuously, during the following years as company was gradually expanding more job responsibilities were added (Halme 2022.)

7.2 Interview outcomes

Fenix ERP system implementation

The Fenix enterprise resource planning system was fully implemented into the company’s operations in the year 2000. Since the system is aimed at covering a large number of operations and data Fenix system adoption took quite a while. Tarja explains introduction of Fenix as a time of uncertainty. Since employees were afraid of changes it may entail. Likewise, people were doubting that they can quickly adapt to the new system while performing operations at the same level of efficiency. For learning employees about the usage of the new system, practical trainings were organized, which helped staff get acquainted with the system. Furthermore, aiming at making the most possibly convenient system according to employees’ needs, developers tested the system with users and used their opinion for achieving user-friendliness. Thereby employees’ preferences and ideas were heard and implemented in practice (Halme 2022.)

Handling order fulfilment operations before Fenix ERP system implementation

Before the Fenix software implementation, no other ERP system was used in a company. There were several systems and databases used to support the order fulfilment process. Such programs were different and each department. Hence, data was isolated and not shared among functional areas. Thus, operations and functional areas were delimited from each other. In this sense collaboration within the department was not well organized. Colleagues did not know the nature of each other functions since working operations were distinguished by several programs (Halme 2022.)

Tarja Halme also mentioned that earlier on type of data storage did not imply automatization. The data was entered manually. Likewise, company’s operations were also done manually. Therefore, completion of operations was done slowly. Furthermore, manual data entry caused mistakes and delays (Halme 2022.)

As it was understood after the interview, all connections and data exchanges were held via phone and email. Accordingly, such data transfer placed a lot of responsibility on the people responsible for data transmission. Consequently, the process was much less reliable (Halme 2022.)

Shipment booking process handling before Fenix ERP system implementation

According to the interview, shipment booking process was done differently without Fenix system usage. Stora Enso had a booking department residing in Helsinki that was responsible for bookings. Supply chain coordinators only transferred information to the Helsinki booking department further for processing and did not make any booking requests or amendments by themselves. The calls and messages for the Helsinki department contained information about production schedule, number of containers, order weights, destination and other data needed for shipment booking. In the same manner, from the logistics department information about production was transferred via mail and phone calls to the SCC. There was no common system for storing information about the order and delivery timings. Thereby, the process of shipment was more complex and time-consuming (Halme 2022.)

Benefits, noticed after Fenix software implementation

According to interview after Fenix ERP system implementation efficiency of operations immediate increased. The cooperation of departments via one joint system eased the accessibility of information. Moreover, the overall understanding of the order fulfilment process improved. This was achieved since all operations became visible for viewing among employees from different functional areas.

Order information visibility within departments affected favourably delivery schedules. Therefore, timely awareness of changes in production made it possible to quickly respond to problems and solve them while avoiding consequences.

The shipment booking process has become more convenient due to the storage of order information in Fenix software. Furthermore, the transfer of information about the order to courier services through the system brought to the information accuracy increase. Therefore, the reliability of the data was guaranteed and errors in booking were avoided (Halme 2022.)

Viewpoint concerning the convenience of the Fenix ERP system for everyday operations execution

In overall Tarja Halme believes that nowadays company's operations are performed smoothly and well-organized via Fenix system. Likewise, operations were described as easy to perform. Furthermore, interviewee mentioned the convenience of data access and usage. Data entry and gathering are being done quickly and do not require a lot of time. Likewise, data is accessible by people from different departments, which creates well-established integration within functional areas. Tarja Halme mentioned that Fenix works as a joint system, consolidating all data, needed to perform operations. Furthermore, it is believed that Fenix software usage makes operations fast and reliable (Halme 2022.)

Suggestions of the improvements from the interviewee point of view

Interviewee believes that working operations are done effectively and nowadays they are organised appropriately. Moreover, operations are done correctly due to accessible information gathering through the Fenix ERP system. Despite this, during periods of the high volume of orders, the workload load is high, which in turn leads to a decrease in work efficiency. For the efficiency improvements, Tarja suggests expansion of the staff in the departments for minimizing amount of work per person, need to be performed in a certain period. In addition, as an alternative, automation of operations is proposed to decrease the workload of employees. (Halme 2022.)

8 Discussion of shipment booking operation’s efficiency, development ideas

8.1 Benefits of operations performance via Fenix system

This chapter presents the generalization of the information gathered during the interview, combined with personal observations of the company’s operations. Moreover, this chapter as well as framework of secondary sources research.

The aim is to show how the benefits identified in secondary data research are shown in Stora Enso’s operations after Fenix system implementation.

Collaboration increase

Based on the knowledge acquired from the interview, previously the data exchange was not performed via the joint system. Likewise, collaboration within the department was not well organized. Accordingly, employees from different departments did not know what other people are doing since operations were distinguished within several softwires (Halme 2022.)

Nowadays most of the departments use the same ERP system- Fenix, where all operations are visible for personnel from different functional areas. As a result, employees have a better understanding of each other functionalities and responsibilities. If there is unclarity or the need for changes and help, people know whom to ask and this in return increases collaboration.

Increased productivity/efficiency

Before Fenix ERP system implementation shipment booking process took longer time than nowadays to be completed and the possibility of errors was higher. The reason for that was no automated data entry and data forwarding. Information about the order was not stored in on system. Likewise, there was no live order status tracking possibility (Halme 2022.)

From the observations, done in the company the situations with shipment booking improved with the Fenix ERP system implementation. Nowadays system use alerts, which represent notifications coming to SCCs mail in case of under and over-production as well as production delays. SCC follow alerts and takes actions for solving issues, minimizing devastation for the customer.

Furthermore, nowadays automatization of operations saves SCCs time. The operations are done smoothly so that the time is utilized effectively to keep up with all responsibilities.

Cost reduction

Cost reduction in shipment booking process is represented as avoidance of over costs. These over costs come from delays in production or shipping. Such postponements negatively affect shipment booking by leading to fee charges by courier companies.

Furthermore, when delays in shipment repeat several times relationship between customer and company suffers. Consequently, company loses trust and customer is no longer willing to do business with such company. This leads to negative results on the financial side of the company. Before Fenix ERP system implementation, changes in delivery could be made not on time, which caused additional costs and fees for the company (Halme 2022.) Nowadays, with smooth data flow occurrence of such problems is reduced.

Customer relationship improved

Nowadays all details concerning the customer's order are represented in Fenix ERP system, which allows sales office to provide customers with information for their order promptly. Regarding booking the vehicle, delivery schedule can be changed several times during order handling process.

The actual timing and the reason for the change can be found in Fenix ERP system for providing actual information for the customer. Consequently, customer satisfaction with the order handling process does not deteriorate.

Centralized, up-to-date, accessible, and ease of access

The data for shipment booking is available for gathering and using from Fenix ERP system directly. Furthermore, information is accessible to all employees in a company. Thereby, centralized and ease of access to data reduces the execution time of working operations.

It needs to be mentioned that the ERP in company is not used at its total capacity and employees still need to ask for some information from employees from other departments by email (Halme 2022). This leads to the understanding that system does not contain all data needed to perform the business operations and can be improved.

Scalability (Extensibility)

As it is known ERP is in the continuous development process. In case company when ERP was firstly introduced the use of ERP was developing gradually. In the beginning, it was just a database which further developed into an operative system integrating different departments (Halme 2022.) Up to now, the Fenix ERP system is still developing since the company’s needs are changing continuously. Therefore, there is a constant need of updating the ERP system according to company’s requests.

8.2 Order fulfilment process development ideas

During the observations done in the company, several problems that affect the effectiveness of operations were identified. The description of the problems is represented below with the proposition of possible solutions. During the interview, these suggestions were also discussed with Tarja Halme to get an evaluation of necessity and applicability of development ideas.

Booking requests notes entering

Booking request contains shipping instructions, which are filled for usage of courier companies and dispatching departments. Instructions are entered into the system manually by sales department. SCCs are responsible for checking and selecting the notes for booking requests.

Notes contain information such as:

- type and number of the container that will be shipped/stuffed
- if the order is under letter of credit, it should be mentioned
- partial shipment allowed/not allowed
- transhipment allowed/not allowed
- specific information about how the container should be staffed, for instance how much free space should be left
- preferred shipment company
- preferred dates of delivery.

This information is significant and essential for shipment booking. Nonetheless, notes added by sales office usually contain unnecessary information. SCC’s role on this step is choosing needed shipping instructions and copying them into the booking requests. During the work with booking requests, this operation was identified as time-consuming.

A common problem was the appearance in the system same note several times. This cause wasting time on choosing the correct ones. It is believed that such problem is caused by the lack of automation.

The possible solution to this problem is creation of a template of shipping instructions that need to be included in the booking request. Thereby, sales team will enter notes into the system according to the information needed and not include not necessary data.

This idea was presented to Tarja Halme and got a positive evaluation. Tarja mentioned that this problem has a country-specific aspect. Every sales department thinks differently: some prefer being precise, some of them not add shipping instructions at all, and others add too much information. Thus, this problem was confirmed by Tarja. Furthermore, she assumes that template creation for entering the shipping instructions is a valuable idea, that can be implemented for making this process easier and more structured (Halme 2022.)

Timing for making booking requests

The booking request needs to be made no later than two weeks before the planned vehicle departure. The earlier booking will be done, the more chance that the preferred dates by the customer will be confirmed and no delays in shipping would be seen. Nowadays there are no alarms, alerting the SCCs about the need to make booking requests. Hence, SCCs control the completion of the requests by themselves and need to plan it individually. Thus, this leads to possible delays in shipment booking due to the lack of automatization.

Nevertheless, Tarja did not agree with the need for such improvement. According to her shipment booking is a planned activity done approximately twice per week and she does not see the high necessity for a system alarm concerning shipment booking (Halme 2022.)

Thus, this problem is not crucial for the work. Nonetheless, it is believed that this process can be automated since it would decrease the appearance of errors and delays in the booking.

Technical errors in Fenix ERP system

In overall Fenix ERP system is running smoothly and the occurrence of technical errors appears rarely. Nevertheless, one error was noticed during the observation in the booking vehicle process. The error has a technical nature and can be solved in the system. The error happens during entering the shipping instructions into the booking request. While shipping instructions are chosen to be copied into the booking requests, one note is usually copied two to six times. This error was noticed regularly. Subsequently, deleting repeated notes waste the time of the SCCs, which could be utilized more efficiently. Tarja likewise confirmed that she struggles with this error, and it is appearing constantly during the work (Halme 2022.)

Technical errors are the cause of slowing down the operations completion and reason for the delays and mistakes appearance. Thus, it is important to continuously monitor the performance of system and solve appearing errors quickly, so that they will not affect the operations dramatically.

9 Conclusions and summary

9.1 Answers to Research questions

The research provided the detailed outlook on the business operations handling in a case company with the use of ERP software. The analysis identified benefits from ERP usage for performing shipment booking operations.

To achieve the goal of the thesis, the main research question and sub-questions were formulated. The research questions and their answers are presented below.

What are the benefits from ERP system usage for shipment booking management operations?

ERP software usage is beneficial for shipment booking management operations in many ways. The benefits were identified from the secondary data research. Then it has been analysed and presented how the benefit of ERP system usage is demonstrated in the case company’s operations. The identified and confirmed benefits included: expansion of collaboration within the company’s employees, business functions efficiency increasement, cost reductions, customer relationship enhancement, user-friendly centralized data usage and system expansibility opportunity.

How ERP system changes the execution of shipment booking operations from supply chain coordinator side?

Based on the analysis carried out, the use of an ERP system leads to an improvement in the efficiency of shipment booking operations performed. This is achieved by combining order data into one system with constant access to it for employees from different departments. In addition, easy-accessible information leads to the delivery of orders on time. The process of booking a shipment using ERP system is convenient due to the storage of order information in the Fenix ERP system. Moreover, the transfer of booking information through the system allows transferring data quickly without errors.

How shipment booking process, presented in a case company can be developed for efficiency increasement?

The efficiency increasement is proposed to be achieved in two ways: expanding the staff of employees or automatization of processes. It is believed that system functionates at a high level of efficiency nowadays, Nonetheless, during the high order volume periods, more people are needed for performing operations on time. It is believed that solving technical issues with booking instructions and creating the template for making has a potential to save employees' time and improve work efficiency.

It is believed that performed research is both valid and reliable. During the analysis, answers were given to all the research questions presented at the beginning of the research. The outcomes of the research are considered to be reliable since they were made following qualitative methods - interviews and observations. Furthermore, the study analysed both secondary and primary data.

9.2 Potential for further research

It is believed that the research has the potential for further analysis being implemented on several topics. This thesis work identifies the shortcomings and presents the ideas for Fenix ERP system improvement with the purpose of working efficiency growth. These ideas serve as a base for further research with the aim to study these improvements in detail. Evaluation of payback from the developments and the degree of their necessity can be studied to provide a reliable view of the situation. In addition, the suggestion is to use qualitative research methods for performing the research. Since it is believed quantitative research methods would provide a more precise perspective of cost and time indicators of the company's operations performance.

Another study that could be conducted is an analysis of other companies' operations, besides the shipment booking process. The company represents a wide range of operations thus the study of others can be valuable for identifying possible development ideas for improving efficiency of operations handling.

Additionally, similar research can be done based on different companies with the purpose to compare used ERP systems for identifying the most suitable one.

9.3 Summary

The research provided a detailed outlook on the order fulfilment process including shipment booking handling via ERP system. As the main goal during the analyses benefits from ERP usage for performing shipment booking operations were identified and proved. The thesis provides a literature study combined with the conduction of qualitative research methods. The outcomes of the research serve as practical evidence of beneficial nature of Enterprise resource planning systems for a company's operations efficiency.

The research consisted both of theoretical and empirical parts. Theoretical part included secondary data collection method. Theoretical part presented the central concepts of the research: Enterprise resource planning system, supply chain management, logistics and shipment booking process. The concepts were described in detail. The benefits of resource planning system studied in theoretical part provided the overview for further empirical research.

As an empirical part, the work was done as a case study of the shipment booking process performance at Stora Enso. For providing reliable and thorough work, research qualitative methods were carried out, including observations and interview. The benefits of ERP system usage were confirmed by evaluation of changes in the execution of the operation after ERP system implementation in the case company. Moreover, research presented ideas for further ERP system development to improve the efficiency of operations handling.

The research provided the answers to all formulated research questions. Moreover, suggestions for further research were presented.

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