

LAPPEENRANTA UNIVERSITY OF TECHNOLOGY

School of Industrial Engineering and Management

**E-BUSINESS SOLUTIONS AS A PART OF A CUSTOMER  
SERVICE PORTFOLIO**

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## ABSTRACT

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Master's Thesis. Lappeenranta University of Technology 88 pages, 7 figures, 35 tables and 3 appendices. Examiner: Professor Janne Huiskonen	
<b>Keywords:</b> e-business, e-commerce, supply chain management, business-to-business	
<p>This study examines the need for e-business services solutions in cardboard industry. In this study the need for e-business services and its contents were studied in the Finnish forest industry company. The study was conducted through thematic interviews and supplemented by a corporate case. The study was based on a preliminary study, in which some e-business services were identified.</p> <p>E-business services have increased significantly in business-to-business markets. In the consumer markets e-business services have been a normal way of conducting transactions for a long time. Increase in the e-commerce has driven companies to set up electronic trading platforms, modernize the delivery models and service concepts as well as take into account the impact of electronic data interchange transactions.</p> <p>The survey results led to three conclusions. First, the study showed that e-business services are a part of the modern commerce between businesses. The e-business services already exist and they are offered by the company's competitors worldwide. Second, the study showed that the future in the supply chain is in the development of services in general. Folding boxboard products are moving closer each other in terms of quality all the time, e-services can provide a competitive advantage and give opportunity to stand out in the market. Third, there is need to invest in e-business services and business models. These should be made to support each other. In addition the contents of the services must fit the customer needs.</p>	

## TIISTELMÄ

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<p>Tässä työssä tutkittiin sähköisen liiketoiminnan palveluiden tarvetta kartonkiteollisuudessa. Palveluiden tarvetta ja sisältöä tutkittiin suomalaisessa metsäteollisuusyrityksessä. Tutkimus suoritettiin teemahaastatteluin ja sitä täydennettiin tekemällä yritys case. Tutkimuksen pohjana toimi esiselvitys, jossa muutamia sähköisen liiketoiminnan palveluita oli tunnistettu.</p> <p>Sähköisen liiketoiminnan palveluiden on havaittu lisääntyneen merkittävästi yritystenvälisessä liiketoiminnassa. Kuluttajakaupassa sähköisen liiketoiminnan palvelut ovat olleet jo pitkään käytössä. Sähköisen kaupankäynnin lisääntyminen on ajanut yrityksiä perustamaan sähköisiä kauppapaikkoja, modernisoimaan toimitusmallejaan tai palvelukonseptejaan sekä huomioimaan sähköisen tiedonvaihdon vaikutuksia liiketoimissaan.</p> <p>Tutkimuksen tulokset johtivat kolmeen johtopäätökseen. Tutkimus osoitti, että sähköisen liiketoiminnan palvelut ovat osa nykyaikaista yritystenvälistä liiketoimintaa. Palveluita on olemassa ja niitä on tarjolla yrityksen kilpailijoiden toimesta maailmanlaajuisesti. Toiseksi tutkimus osoitti, että toimitusketjun tulevaisuus on palveluiden kehittämisessä ja niiden rakentamisessa. Kartonkituotteet lähenevät toisiaan laadullisesti kokoajan, sähköiset palvelut voivat tuoda kilpailuetua ja niiden avulla voidaan erottua markkinoilla. Kolmanneksi, sähköiseen liiketoimintaan on panostettava ja palveluita on rakennettava toimitusmalleja tukevaksi. Palveluiden sisällön on huomioitava asiakastarpeet.</p>	

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## **ABBREVIATIONS AND DEFINITIONS OF TERMS USED**

SCM	Supply Chain Management
CRM	Customer Relationship Management
EDI	Electronic Data Interchange
MB	Metsä Board
BO	Brand Owner

## 1 INTRODUCTION

This study has been made to Metsä Board Paperboard business area and its Customer and supply chain management. On a general level the idea of the thesis is to find out how the findings, concerning e-business services, from the Metsä Boards Service Portfolio –project from year 2011, are going to be rationalized, managed, used and implemented. At the end of this thesis there are services left which are noticed to be necessary. The conclusion is to make a proposal of what is really need for the e-business services and what will be the suggestions to take a step further. The result of this study is to make clear that all the needed and required e-business services will be adopted.

Metsä Board (previously M-real) is part of Metsä Group. Metsä Group was previously known as Metsäliitto. Metsä Board is Europe's leading producer of fresh forest fibre carton boards, the world's leading manufacturer of coated white-top kraftliners, and a major paper supplier. Metsä Board's business areas are Paperboard, and Paper and Pulp. In 2012, Metsä Board's annual sales totaled EUR 2.1 billion. The company has nine (9) production units in three European countries and about 3,300 employees. Metsä Board operates globally. (Metsä Board, 2013a.)

Metsä Board Paperboard business area produces cardboards, graphic boards, white top kraftliners and wallpaper base grades. Paperboard has its production units in Finland; Tampere, Kyröskoski, Äänekoski, Simpele and Kemi. In Simpele and Äänekoski mills there is also sheeting capability. In Gohrsmühle, Germany, it has sheeting plant for express board. In Joutseno Metsä Board Paperboard has its bleached CTMP (chemi-thermomechanical pulp) pulp mill for Metsä Board mills. Metsä Board's production units are shown in figure 1. (Metsä Board, 2013a.)

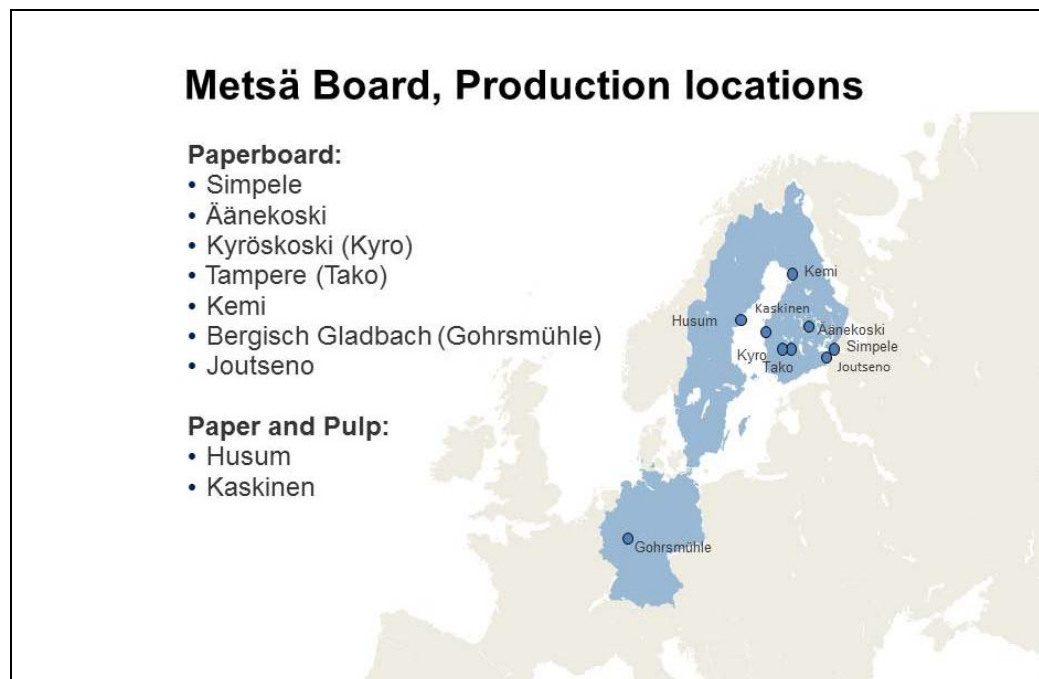


Figure 1. Metsä Board, mill locations. (Metsä Board, 2013a)

Metsä Board products are made from renewable materials and sustainably grown fresh forest fibres. The company's products are used in beauty care, cigarettes, food industry and healthcare. All these require high hygiene and cleanliness levels. (Metsä Board, 2013a.)

Metsä Board Paperboard sells its products to brand owners, converters or merchants. Products are either customer reels or –sheets. Converters and other box factories makes the boxes e.g. brand owners for chocolate or other wrap up products. Cardboard is never sold straight to the end user, in every case it is business-to-business (B2B) trading. Brand owners are global operating companies who have many brands in their command. Converters are companies who make the boxes in a right shape and right print. Merchants are cardboard resellers.

## 1.1 Background

Background of this thesis comes from the quite open range of the services which Metsä Board is using with their customers. In the Customer service portfolio study, made in autumn 2011, there were found 150 different customer services. Most of these services are already in use and in action, some services do not yet exist. This thesis is made to find the most needed e-business services for further development. Findings concerning about e-business services are mostly in status not yet available.

This thesis is a part of Metsä Board Paperboards Lean SCM –project. This project will end in the end of year 2013. This project's target is to reduce the amount of services and streamline the supply chain by doing things efficiently by trimming operations and business processes. This is to improve the lead-time and release resources to profit-making work. Topics concerning the e-business services are by nature related such as described above.

The main focus in e-business services are: e-business services themselves, invoicing and payment services, customer feedback and appreciation and customer loyalty. These are the main factors in the big picture to describe and research from the e-business point of view.

From the customer service portfolios findings in e-business services are divided into groups: e-ordering, order tracking, supply chain visibility, electronic invoicing, self-billing and probable customer portal. These are the most interesting e-business services parts which are examined in this thesis.

## 1.2 Research problem, objectives and delimitation

This paper examines the need for e-business solutions in board business. Necessity is approached through research, which defines what are the business needs of electronic services and in which order they are to be published. The work also discusses the importance of e-services and the impact of the company's customer value production.

In this study the research problem is to define the development targets for project plan which are going to be the basics for the Metsä Board's e-business services. The focus of the thesis is to find the functional ways to deliver electronic customer documentation, -customer reporting, -electronic invoicing and order tracking. This thesis answers two research questions:

### *1. What e-business services are needed?*

The first part of the study is to understand the needs of electronic services from the market. The purpose is to explore and to find out the market's strategic volition. In the market there are already e-business services and solutions by the company's competitors. The aim of the study is to determine the e-business service needs which are the most important. This study is made from customer-oriented point of view.

### *2. In which order the needed services are going to be built up?*

Second part of the study is to sort the findings in order in which they are to be published to the customers. This selection will be the background for next steps in company's e-business service development. During the research it has to keep in mind that there is Customer Portal in view. That portal should include all the requisite functions. Before that there is amount of e-business services which need to be select, defined and described.

The study is made to find out which of the e-business services are going to be implemented and in what order they will be implemented. In Metsä Board Paperboard business area there are different kinds of models for how the existing services are handled already and there are services which are not yet available.

### 1.3 Problem defining

In the pre-research study (Customer service portfolio, 2011), there were found 150 different services. Firstly it was seen that this amount of services has no future and streamlining need to be done. It was also clearly noticed that services concerning e-businesses is needed but mostly they did not exist. E-business related services were found totally 13. After clarification there were six (6) of them left which are related to the research problem on the table. The six most interesting sectors are:

1. e-Ordering,
2. Order Tracking,
3. Supply Chain Visibility,
4. Electronic Invoicing,
5. Self-Billing and
6. Customer Portal

These six topics were categorized under the main points of e-business Services and Invoicing and Payment Services.

In the early stages it was expected that in the markets there are already e-business services available from competitors. Discussions about e-business services have already been talked about in the company for many years. At this stage IT-solutions are more sophisticated than before and the steps to implement these new operations are much lower. The time for e-business services has come.

#### 1.4 Research method

When designing how the present research should be carried out, it soon came out that this is an interview study. The number of customers is thousands, bigger or smaller with different needs and expectations. Quantitative research was out of question because of numerous respondents and how to find out the needs for e-business services by questionnaire or by cross marks on the paper. Qualitative research was the clear choice for this study. With qualitative research there is possibility to keep number of respondents to a tolerable quantity and by choosing them carefully there is opportunity for a rich and fruitful discussion, which can include new innovations and new thinking. Therefore, this study was conducted as a qualitative research and it is made as an interview study.

This interview study was divided in two parts concerning the acquisition of information. First there was a theme interview study. The purpose of this section was to determine the company's internal view of e-business solutions. After careful selection there were interviewees who had a long term experience in board business. Work experience range was 10 to 30 years. All the interviewed persons were Metsä Board Paperboard key account managers and sales directors.

Theme interview includes both pre-determined questions and free form debate. Theme interview is more flexible than form interview with exactly given questions. Also theme interview can be made when the number of participants is small.

Secondly there was a case study with the real customer company. In this case study the findings and assumptions from the first interview stage were tested and enriched.

## 1.5 Interview methods

The interview is a pre-designed interactive session. With an interview we can collect information about attitudes and experiences. Interviews can be divided into form-, theme- and open interviews. These can be arranged as individual-, pair- or group interviews (Vuorela, 2005, 37).

Interviews can be divided into the practice- or research interviews. The main difference between these types of interviews is the use of the received information. Interviews with practical information are used as soon as it is possible for immediate trouble shooting. Information from the research interview can be utilized only after the information has been scientifically secured and summarized. Interview methods can be sorted as open (unstructured), theme (semi-) and form interviews (structured). (Vuorela, 2005, 38.)

One of the strongest aspects of interviews is flexibility. Another advantage is that the interviewee cannot access the questions in advance. In this case, the subsequent questions cannot influence the responses. Spoken language interaction gives an opportunity to communicate with the interviewee and ask for things what could not have been planned in advance. There is chance to control the data collection by the situation, and along the respondents answers. The data can also be supplemented later, if necessary. (Vuorela, 2005, 42.) This research was planned to be conducted by theme interview.

### 1.5.1 Theme interview

The most used interview method is the theme interview. This interview method proceeds in formal accordance with completely pre-defined questions. The method differs from questionnaire in a way that the interviewer asks pre-planned questions verbally and then registering answers on the form. The theme interview is suitable for use in the same situations as the open interview, and it is closer to the open interview than form interview.

### 1.5.2 Interview grouping

Metsä Board is making cardboard business in a three (3) different ways. These ways differ from each other exceedingly. From the end user point of view there is no obvious difference but in the production- and supply chain point of view there is a lot of dissimilarities. As described in chapter 1. Metsä Board is a leading folding boxboard producer in Europe and the world's leading producer of coated white top kraftliners. It's products go to various end user applications. Due to these reasons, supply models and -chains for end products are diverse.

In this study customer groups were picked up as follows:

- 1) Brand owners
- 2) Converters
- 3) Merchants

From these categories mentioned above were preselect two (2) customers to represent its line of business. In this study six (6) Metsä Boards key account managers were interviewed from three (3) different branches.

Brand owner means companies like Unilever, Kraft food and Nestle. These companies have for example world-famous food industry brands to sell. Unilever: Lipton, Knorr and Carte d'Or. Kraft food: Toblerone, Côte d'Or, Marabou and Milka. Nestle has brands: Nescafe, After Eight, Nestlé Bona, Fitness & Fruits and Cheerios cereal. Most of the brand owners make their boxes themselves, fill them and pack the boxes.

Converters are companies which make ready printed boxes from the folding boxboard but are not filling them as a ready package. Brand owner or other supplier has outsourced the box making to some other company.

Merchants are companies which buy and sell folding boxboard to consumer packaging for brand owners or box factories.

Most of the trading is business-to-business –model (B2B). Very seldom the folding boxboard is sold to the end user. Most of the folding boxboard is sold to the end user via some product as a packaging material. In the figure 2. There is shown brand owners map from the food trade industry dealing with Metsä Board.



Figure 2. The brand owners map from the food trade industry.

In the board business, like any other business, the most important thing is to know the customer needs. That is the way to deepen the customer relationship and to get more value from it and in the long run also more profit.

The theoretical part of this study examines the major needs in e-business services in Metsä Board. It also discusses the future needs of what e-business services are really needed and in what order they will be launched.

The research problems were examined thru 14 sub-questions which are shown in appendix 1. The viewpoints for the interview were customer- and Metsä Board point of views. The interviewed persons were Metsä Boards key account managers and sales directors who are responsible for commercial transactions with brand owners, converters and merchants. These responsible were located in England, Germany, Spain, Singapore and Finland. This study has global angle of approach.

## **2 THEORETICAL STARTING POINTS OF THE STUDY**

E-business fundamentally means business models which are built from electronic commerce (e-Commerce). E-business – electronic business is understood as any business which utilizes a computer. More often it is understood business made using in the Internet (Hübner, 2008, 4).

E-business includes much more than purchasing or selling goods or services via Internet. It is a new type of relationship between customer and supplier. It is a global concept that includes all the internal and external business processes to meet, integrate and synchronize with the business partners in the necessary electronic media. The most important way to connect business partners together is via electronic market places (Hübner, 2008, 4). E-commerce is one chance for the company to use information technology and the Internet in their business. Information technology can give the advantage of sales and customer interface in addition to the company's other functions such as procurement, production, distribution, and financial management. From which point and in what order the enterprises need to start the development of the e-business functions depend on the company's nature and situation. Thus, e-business is becoming an increasingly integral part of the company's ongoing development (Tieke, 2003, 5). The Internet offers opportunities to companies who want to improve customer service. With the Internet, companies can reduce the costs connected with providing customer service and at the same time improve customer relationships (Levenburg 2006, 358).

At the point where a paper-based paradigm is switched to an electronic paradigm there is always a necessity to re-design business processes and structures within an organization but there is also new unknown opportunities. The benefits are recognizable; reduced transaction costs, reduced process cost and improved knowledge sharing. For these reasons e-commerce is well-established and fast growing branch of economy all over the world. (Hübner, 2008, 5.)

Modern excellent products, great services and value creation to the customer are the most important drivers in today's business. High class services can even make products and services look better (Mattison-Shupnick, 2010, 163). E-business operations, as a part of the company's operations, are shown in the figure 3.

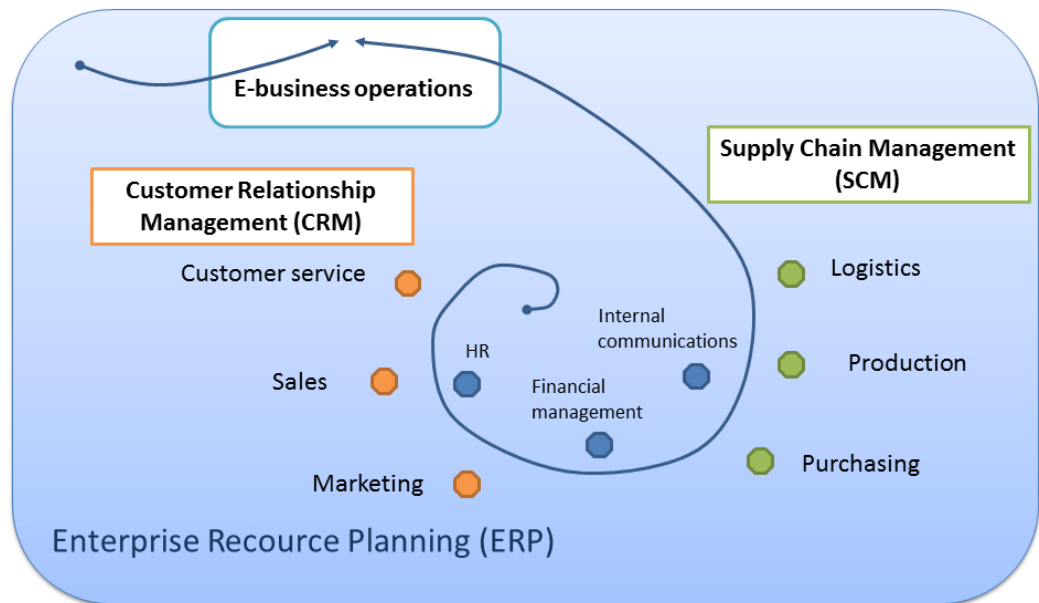


Figure 3. E-business operations as a part of the company's operations (Tieke, 2003, 5).

## 2.1 Business-to-business marketing

Most of e-business has an association to the Internet. Customers and business enterprises are moving towards to e-business unavoidably. Customers or end-users have found e-business via Internet (B2C, business-to-customer). How many of us have already ordered consumer goods from different kinds of electronic commerce? For younger generations it is obvious that you can buy anything from the Internet. On the consumer side buying through the Internet has broken through many years ago. There is no way back. On the business enterprises there is much still to do.

Before there are consumer goods there has to be designing, planning, different kind of purchasing, manufacturing and supply chain functions. These are made by business-to-business (B2B) (Mallat et. al, 2004, 17).

The benefits in e-business solutions in B2B are:

- reducing costs in routine work
- relieve human resources to work more value making business
- reducing mistakes
- centralize purchasing
- transparent stock and shorten lead times
- improved customer relationships

(Tinnilä et al, 2008, 4).

Today's B2B online marketing is thru the use of B2B-websites, e-mail, online product catalogues, online trading networks, barter sites and other online resources. All this is done to find new business customers, serve existing customers better and achieve purchasing efficiencies and better prices (Kotler et al, 2008, 842). Most of the offering in the internet today is: product information, customer purchasing and online customer support services. All of these actions point to a stronger customer relationship. (Kotler et al, 2008, 842). Business-to-business online marketing enables companies to negotiate, carry out transactions and payments in a trustworthy and secure way on the web (Kotler et al, 2008, 844).

## 2.2 Business models

Nowadays customer service and supply chain efficiency is known to be based on business models, business strategy and innovation. Global trading has changed the traditional balance between supplier and customer. The growth of the Internet has given a new and transparent way to think about questions regarding how businesses deliver value to the customer. The Internet and e-business services

together have given customers much more power in transactions and made their purchasing easier. Good business models provide compelling value-added suggestions to customers, to achieve cost-benefit transactions with lower risk. To succeed, enterprises must design their business correctly, figure out their business models, then implement these models in use and then refine them afterwards. Business models are certainly needed features where there is consumer choice, transaction costs and heterogeneity amongst consumers and producers and – of course – competition. (Teece, 2010, 174.) Development in business design is shown on figure 4.

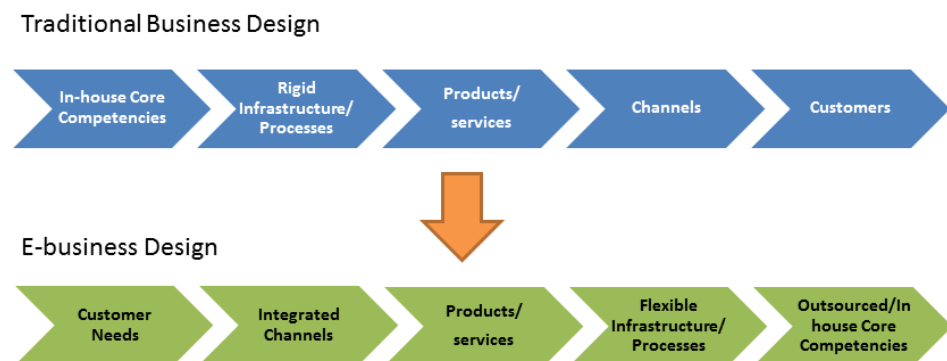


Figure 4. Development in business design. (Kalakota & Robinson, 2001, 95).

The business models provide information and evidence, which shows how the company will create and deliver value to customers. Business model innovation provides a competitive advantage. The model should be sufficiently different and not easily copied by incumbents and new entrants alike. A good business model generates value propositions that are irresistible to the customers. Business models can enable significant value enhancement to the company, which produces and delivers products and services. Planning the business properly, and then consider the business models precisely, this can give commercially viable revenues to business success. (Teece, 2010, 174.)

The essence of business models are that they clarify our customers' needs and capability to pay, it determines the way in which the customers react and deliver value to customers. It can also attract customers to pay for value, and it can convert those payments to make profit through proper design and operation of the different parts of the value chain. Business models are more than just a good way to make business. Models have to be refined to meet the particular customer needs. It is also good to keep in mind how businesses can capture value from delivering new information services that users usually expect to be free of charge. (Teece, 2010, 191.)

### 2.3 E-business

E-commerce, e-business and e-trading are terms which are used when talking about business on the Internet. Business enterprises are using the Internet all the time to conduct their business, buy or sell products and services to a larger audience. The Internet offers a value creative, new form of interaction between marketers and buyers. Thru the Internet you can share news, information, new products and latest innovations at the same time all over the world. (Mallat et. al, 2004, 16.) Parties in e-business structure are shown in the figure 5.

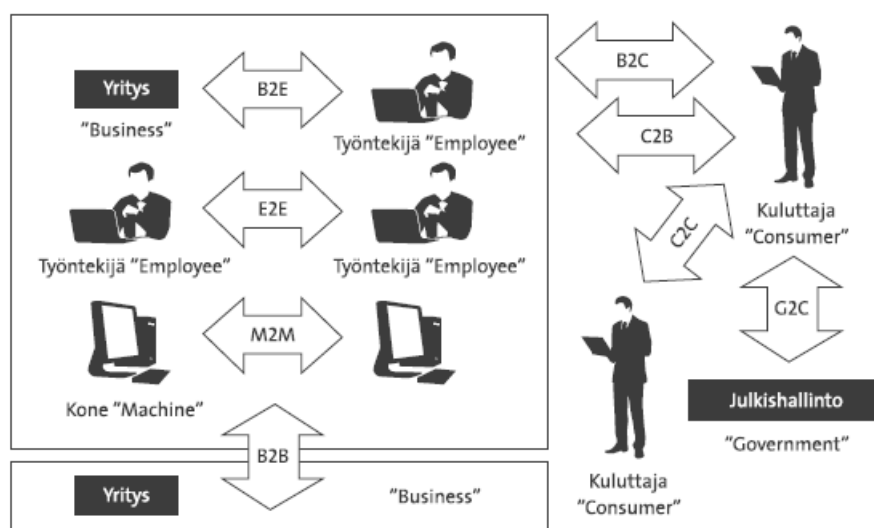


Figure 5. Parties in e-business structure. (Mallat et. al, 2004, 16).

### 2.3.1 Electronic commerce between businesses

Electronic commerce in Business-to-business cases can take place either between two or more companies directly through electronic systems, or through a dealer in electronic market places. B2B marketing between enterprises usually takes place in a big buyer's or seller's created and managed system in which the trading partners have joined. Private marketplaces enable companies to integrate their electronic systems and business processes with partners, at a much deeper level. E-business solutions can strengthen customer relationships and create value. On the other hand the lock-in situation can be created between enterprises when the data transmission systems have been built between the companies. That will also make the business partner exchange quite expensive and replacement can cost a lot. (Mallat et al, 2004, 48.)

E-procurement, Internet based buying, has risen very rapidly during the 21<sup>st</sup> century. Developments in information technology (IT) have changed the B2B marketing process in the past few years. There has been strong growth in online purchasing. (Kotler et al, 2008, 307.)

There are several ways in which the Internet has being used to ease purchasing activities between companies. The most used approach is to develop and maintain a Web site for the company. The Web site may encourage potential customers to purchase the company's products, or to create interest in the company. A part of the purchasing site can be an online catalog with online ordering ability, e-ordering. Fundamentally this can be the Internet version of the traditional printed catalog. (Mullane et al, 2001, 388.)

In the B2B market one possibility is to use a third party as an intermediary in between buyer and seller. This Third Party B2B Company is managing a web site that is a virtual version of the ancient bazaar. There can be numerous of sellers and many buyers in one place at the same time. This procedure is not new, but

with today's global internet technology it can be easily implemented. (Mullane et al, 2001, 388.)

## 2.4 Customer Relationship management

Today's companies are snowed under with customer information. Companies can collect data at every touch point between customers and the company e.g. customer purchases, sales force contracts, service and support calls, website visits, satisfaction surveys, credit and payment interactions, market research studies etc. The basic problem is that the data is splintered across the company's organization. (Kotler et al, 2008, 393.)

Customer relationships will change more or less in the electronic environment. The trust mechanisms are essential in electronic business because merchants and consumers do not necessarily know each other. Interaction takes place via the data network, and the products cannot be seen or test in the physical environment. (Mallat et al, 2004, 25.)

Customer Relationship Management (CRM) means the overall process for building and maintaining profitable customer relationships by creating first-class value and satisfaction to the customer. CRM is perhaps the most important concept in modern international marketing. Various CRM software's are intrinsically related to customer relationship management. (Kotler et al, 2008, 24.) ). Without such software, customer databases would be nearly impossible to maintain.

Customer relationship management has two meanings. First: Customer relationship management is a marketing trend that emphasizes customer knowledge, customer contacts, trust building, as well as the service differentiation to the customers according to customer profitability. Secondly: from the perspective of information systems; customer relationship management means

methods, software, and general communication solutions that help companies to manage customer relationships systematically. (Mallat et al, 2004, 25.)

CRM has come into question in electronic trade, as business contacts with customers have become hard to manage. The customer may have several different points (sales, marketing, product support etc.) to communicate and there can be large number of different terminal equipment to be used (Mallat et al, 2004, 25). At the same time customers expect to be served individually, and that customer service personnel are familiar with their customer history. Vice versa companies are interested in knowing their customers, to determine the value of customer relationship. CRM is a strategic business management system (Mallat et al, 2004, 26).

The customer relationship management goal is to get customer satisfaction at the level where the customer relationships are long-lasting and customers will remain loyal to the company's products or services. Customer Relationship Management's second objective is to identify the customers' needs to respond to them better. (Kotler et al, 2008, 24.)

## 2.5 Supply Chain Management

The term supply chain is found to be too limited to today's logistics. It only describes the production, delivery and sales perspective. The supply chain is seen as raw materials management, production, and capacity meanings. The supply chain is too narrow as a term. Supply chain management based on customer needs and how it generates customer value (Kotler et al, 2008, 880). Customer service and satisfaction are the cornerstones of the marketing strategy for many companies. Distribution is an important element of customer service. Enterprises can reach a powerful competitive advantage by streamlining logistics to give customers faster lead-times, superior service or lower prices. (Kotler et al, 2008, 911.)

The first time this phenomenon was introduced Jay W Forrester. He was reporting about his study in the article: "Industrial Dynamics – A Major Breakthrough for Decision Makers", in 1958 (Mentzer et al, 2001, 1.) Forrester introduced the theory of distribution management, which recognizes the integrated nature of organizational relationships. Because organizations are so complex, he argued that the dynamics of the system may have an effect on the performance of functions, such as research, design, marketing, and promotion. Forrester described this phenomenon using computer simulation to the flow of information and its impact on performance in production and distribution for each member in the entire supply chain system. (Mentzer et al, 2001, 2.)

Supply chain is a network made up of the company, suppliers, distributors and finally customers. This network, based on partnership, is improving each other to get a better performance. All diverse partners must cooperate effectively together to achieve the end-users satisfaction (Kotler et al, 2008, 880). Supply chain is seen as tasks related to the planning, implementation and monitoring of the physical flow of goods, services, and related information from starting points to points of consumption or use to meet customer requirements at a profit (Kotler et al, 2008, 911).

An overview of the supply chain is shown in figure 6.

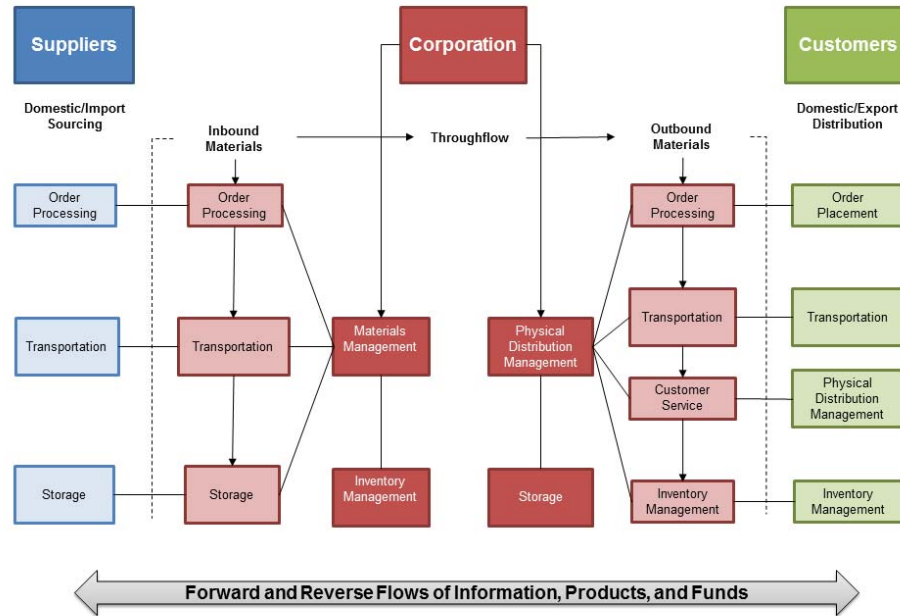


Figure 6. Supply chain management. (Czinkota et al, 2002, 391).

Supply chain is a network of organizations that are involved in upstream or downstream linkages, in different processes and activities that produce value in the form of products or services to the customer (Mentzer et al, 2001, 3). These activities include forecasting, purchasing, production planning, order processing, inventory management, storing and transportation planning (Kotler et al, 2008, 911).

Supply chain is described in the literature as a number of companies who provides material forward. Normally, a few private companies use joint ventures to make products and submit goods to the end user through the supply chain. Typically raw material- and component suppliers, assemblers, wholesalers, retailers and transport companies are members of the supply chain. The supply chain is a network of companies that provide products or services to the market. Also we have to remember that the consumer is also a part of the supply chain. (Mentzer et al, 2001, 3.)

Effective SCM consists of a series of partnerships and thus, SCM requires partners to build and maintain long-term relationships (Mentzer et al, 2001, 10). The SCM sub-theories (a number of issues and functions) are shown in table 1.

Table 1. Idealized supply management characteristics

1	Seamless flow from initial source(s) to final customer
2	Demand-led supply chain (only produce what is pulled through)
3	Shared information across the whole chain (end to end pipeline visibility)
4	Collaboration and partnership (mutual gains and added value for all; win-win; joint learning and joint design and development)
5	IT enabled
6	All products direct to shelf
7	Batch/ pack size configured to rate of sale
8	Customer responsive
9	Agile and lean
10	Mass customization
11	Market segmentation

(Storey et al, 2006, 760).

Supply chain management can be seen as part of a broader set of trends including outsourcing, cross-boundary work, new organizational forms characterized by flattened hierarchies, teams and empowerment (Storey et al, 2006, 769).

Globalization calls for more attention on logistics and other parts of the supply chain management. The need is obvious. Across the continents supply chain management is providing new business opportunities for cargo handling companies and third party logistics providers. Besides these there are bigger forces at play - outsourcing, global sourcing, volatile customer demand, intense competition, shorter product life cycles, and customization. (Storey et al, 2006, 771.)

## 2.6 Enterprise Resource Planning

The Enterprise Resource Planning (ERP) system is an information system that integrates business processes. Its purpose is to create value and reduce costs by doing things right, provide the right information to the right people at the right time, as well as helping them to make good decisions in managing resources in a productive and proactive way (McGaughey & Gunasekaran, 2007, 24). In the manufacturing industry, highly developed firmware ERP -model is generally used instead of self-developed software packages or customized software. E-business efficiency benefits are easily unused; if the e-business is not integrated to the company's other activities (Mallat et. al, 2004, 10). ERP software consists of multi-module application software packages that serve and support multiple business functions (McGaughey & Gunasekaran, 2007, 24). The best known standardized ERP systems are made by SAP and Oracle (Scheer & Habermann, 2000, 57).

Traditional ERP systems are called back-office systems, because it involves operations and processes which the customer is not typically involved, at least not directly. Functions supported by the ERP typically include: accounting, manufacturing, human resources, purchasing, inventory management, inbound and outbound logistics, marketing, finance, and to a lesser extent, engineering (McGaughey & Gunasekaran, 2007, 24). The traditional ERP system's aim was generally greater efficiency. Initially, ERP systems were designed to streamline and integrate processes and information flows within the company activities promoting synergies and increase organizational effectiveness. Many new ERP systems have pass on from back-office to associate front-office processes and activities. The purpose of implementing ERP for most corporates is to replace the diverse functional systems with a single integrated system, which makes everything faster, better and cheaper. (McGaughey & Gunasekaran, 2007, 24.) Modules of the ERP system are shown on table 2.

Table 2. Modules of the ERP system (McGaughey &amp; Gunasekaran, 2007, 27).

<b>Modules</b>
Enterprise Resource Planning (ERP)
Customer Relationship Management (CRM)
Asset Management Financial Management
Supply Chain Management (SCM) Business Collaboration
Inventory Management Order Processing
Data Warehouse Knowledge Warehouse Business Information Warehouse
Business Intelligence Analytics and Reporting Data Mining
E-business (E-Commerce) Sales Management Field Service Management Retail Management
Facilities Management Maintenance Management
Warehouse Management Logistics Management Distribution Management
Project Management
Human Resource Management

The new multi-corporate business models, such as the value making in co-operative networks, or customer-centric networks or supply chain networks are becoming more common in the 21<sup>st</sup> century (McGaughey & Gunasekaran, 2007, 28). The increased external integration is the focus for new business models. E-business services and e-commerce has seen one of the most important developments in all businesses in the last decades. The current business focus on the integration of processes and external collaboration is the key word for next years to come (McGaughey & Gunasekaran, 2007, 28). ERP systems are intended to increase the efficiency and the degree of integration between companies. The entire organization extends to other organizations (cross-functional and cross-business - partners, suppliers, customers, etc.) (McGaughey & Gunasekaran, 2007, 32).

## 2.7. E-business services in existing board market

In the board business there are already companies who are offering e-business services to their customers. There are also companies who are offering e-business services to their suppliers and subcontractors. In this thesis we concentrate B2B markets and e-business services offered by the supplier to the customer. The next seven (7) topics are the most interesting e-business services. These services are seen as the most needed concerning Metsä Board's intentions in electronic commerce.

### 2.7.1 Electronic-ordering

E-ordering is currently widely acknowledged to provide potential benefits in terms of effectiveness and efficiency for purchasing processes (Reunis et al, 2006, 322). E-ordering services as an e-business process enables the true B2B secure collaboration by granting the opportunity to marketers and purchasers to execute trusted processes of electronic trading. Electronic business must be trusted, legally accepted cross border transactions via electronic means supported by various European Union (EU) directives (Polem & Papastergiou, 2006, 352). E-ordering system enables customers to place an order, make changes and receive confirmations via electronic channels (M-real, 2011, 95).

E-ordering means data transmission of electronic documents in purchasing/contracting phase. It begins with the buyers order planning and ends with receipt of an order response and the transfer of the delivery instructions ordered goods or services from a supplier (Kiroski et al, 2010, 359). The sender and the recipient of the order, before, start an e-ordering process, have to settle a series of actions. The most important phase is the definition of the Privacy Policy of the sender and receiver (Polem & Papastergiou, 2006, 356).

Purchasing from the net e-procurement including electronic ordering has risen rapidly in the past few years. This has also had a big influence in the B2B markets. This can consist of companies own purchasing or it can be an extranet for company's suppliers or it can be a channel for the company's customers to place orders. With e-procurement companies can lower purchasing costs, quicken order processing and distribution. This kind of solutions allows salesmen to connect customers online, share market information, sell products or services and deepen customer relationship. (Kotler et al, 2008, 307.)

In B2B environment e-ordering reduces the time between order and delivery. It also releases time to customer service as same as customers purchasing people, they can concentrate on more prior issues. Less paperwork means more time to work creatively with the customers or suppliers. (Kotler et al, 2008, 308.)

#### 2.7.2 Order Tracking

An order tracking service enables customers to monitor their order progress online through the supply chain (M-real, 2011, 98). The Internet offers opportunities to companies who want to improve customer service. With the Internet companies can reduce the costs connected with providing customer service and at the same time improve customer relationships (Levenburg 2006, 358).

According to Levenburg (2006, 358) the “online customers expect to be able to find information about products and services, their availability, pricing and ordering, payment, order tracking, acquisition and delivery, as well as post-sales support.”

Moreover, the literature suggests that the internet is becoming a potentially indispensable tool for delivering customer service: a study conducted in Singapore found that three of the top four major commercial uses of the internet were customer service-related, including gathering requisite information by searching

other web sites or gathering consumers' feedback, providing customer service and support, and conducting electronic transactions (Levenburg 2006, 358).

### 2.7.3 Supply Chain Visibility

This service includes systems and issues that make the inter-organizational communication easier. It includes the flow of information and supply chain communication (Bales et al, 2004, 253). Visibility in the supply chain gives an opportunity to the customer to view key supply chain information to plan one's operations and purchases (M-real, 2011, 105). The supply chain infrastructure must support the necessary exchange of supply, demand and payment information (Bales et al, 2004, 253).

In the global markets there is demand for transparency in the supply chain. The need for effective supply chain management has risen through the decades. The most important factors for that has been globalization, technological innovations and cost savings (Johansson & Melin, 2008, 9). Efficient supply chain management is crucial to simplifying the flow of transactions and the various actors in the value chain. According to Johansson & Melin "there is a strong connection between information, and performance in the supply chain." Performance means, in this case, short lead times, no excess inventory, no bullwhip effect and similar achievements (Johansson & Melin, 2008, 18).

An uncontrolled supply chain is not inherently stable. Demand variability increases when moving downstream in the supply chain. Small changes in consumer demand can cause large adjustment in orders placed upstream. Finally, the network can oscillate in very large swings as each partner in the supply chain try to solve the problem from their own perspective. This phenomenon is known as The Bullwhip effect (QuickMBA, 2013). Sources of variability could be variation in demand, quality problems, strikes, fire in factory area, etc. (QuickMBA, 2013). Variation, combined with the time delays in data exchange

up the supply chain and delays in production and transportation down the supply chain creates The Bullwhip effect (QuickMBA, 2013).

Information sharing inside the supply chain can reduce lead times; make decision making easier, lower costs and increase profits. (Johansson & Melin, 2008, 18.)

#### 2.7.4 Electronic Invoicing

Electronic invoicing (e-invoicing) is the invoice exchange between the supplier and the buyer integrated in electronic form. Traditionally, invoicing is manual, intensive work and risk of human error is quite high. Nowadays electronic invoicing is a common practice in B2B markets. It has been a part of the Electronic Data Interchange (EDI) transactions a long time. (GXS Limited, 2013.)

Electronic invoicing is commonly associated with the term e-procurement. E-procurement includes the purchase of goods and services for organizations (Angeles & Nath, 2007, 104).

Companies have decided to use Internet-based technologies to achieve supply chain management expedition for competitive advantage. Companies focus on procurement which requires organizations to improve their ability to report on income and expenses in order to better transparency of the financial activities of public enterprises. (Angeles & Nath, 2007, 104.)

There is found to be challenges in the backwardness of e-procurement software. A number of software's may be missing key features whereas Enterprise Resource Planning (ERP) software's, as a mature counterpart, has not. The missing tools can be such as billing, payment, reconciliation, authentication, security, and consolidation general ledger and invoicing systems. (Angeles & Nath, 2007, 113.)

According to Angeles et al. (2007, 113, Angeles & Nath, 2007) "Non-global stand-alone solutions are not able to manage the complexities of different geographical jurisdictions, currencies, tax structures, etc."

### 2.7.5 Self-Billing

Self-billing offers to customers the opportunity to charge themselves and dispatch the payment electronically via electronic channels. Customers raise the bills themselves the Supplier will not send an invoice to the customer (Systems Conversion, 2013). Self-billing is a business-to-business way of payment. When using self-billing, the seller does not send invoice to the customer; the customer pays the price based on the delivery documents. The seller and the customer agreed for a time frame within the goods has to be paid, the payment will be done all at once. Self-billing is suitable for established practice and the long term relationship with the customer, and where deliveries are often. (Tieke, 2003, 28.)

According to Finnish Tax Administration the buyer can bill itself or to draw up a bill on behalf of the seller. For example, in the extractive industry which provides raw materials like wood trade, it is common practice that the buyer makes the sales documents. The seller is always responsible for the correctness of the bill. Documents made by the buyer must be considered by a seller, this means that the seller and the buyer must have agreed the bill issue and there should be a mechanism where the seller accepts the bill (Verohallinto, 2013.)

The agreement also refers to trading, based on the so-called tacit agreement. The buyer shall provide each of his invoices for the seller's approval. Approval of the bill may be implied in such a way that if the seller does not respond to the content of the bill within a reasonable time, he shall be deemed to have accepted the invoice. If the agreement and arrangement exists the invoice, made by the customer, is considered as invoice given by a seller. If the seller finds the buyer's

invoice to be incorrect, the seller must submit a VAT invoice (Verohallinto, 2013.)

The choice of e-commerce payment methods can be made both traditional and new ways of payment. Traditional methods of payment are cash on delivery, invoice, cash on pick up, advance payment through the bank, the company offered to the customer account or a credit, and self-billing (Tieke, 2003, 81). E-commerce is legal governed trading based on Finland's laws like any other trade. The regulations for international trading are based on International trade law, the so-called UN Convention, the CISG or the Convention on the International Sale of Goods apply to certain contracts of sale of goods by between parties whose businesses are in different countries. The European Union has adopted e-commerce directive, which has been implemented in Finland 1.7.2002 Law of Information Society Services (458/2002) (Tieke, 2003, 61).

#### 2.7.6 Electronic Data Interchange

Electronic Data Interchange (EDI) is a data interchange between two organizations. It is electronic, in a specified form and automatic data transmission between companies- or public administration data systems. Data will be sent, delivered and decompressed automatically between two parties. (Mallat et. al, 2004, 49.)

In business-to-business marketing the using of networks has already started years ago. The first form of e-commerce was electronic data interchange, EDI. EDI was developed in the early 1970s. EDI has rationalized trade events: the call-offs, order confirmations, shipping documents, invoices and other documents are transferred to the trading partners automatically. EDI is used in most' the major Finnish companies. The development is going forward, and new Internet based technologies are growing (Tieke, 2003, 6). Electronic data interchange can be the priority function between organizations e.g. customer service to customer and it

can be used for company's own databases handling or integration of the customer databases (Tieke, 2003, 10).

EDI invoicing is the most used function in business-to-business trade. Standard format EDI data transfer is used in the invoicing directly to the customer information system database. Customer information system compares the invoice in deliveries and orders, it ensures the correctness of the documents which are found in the bills that will go to pay, this can also occur automatically. The number of EDI invoicing companies will accumulate over time. (Tieke, 2003, 28.)

Other ways to manage the electronic exchange of data are: XML; Extensible Markup Language, language to Internet transactions description. XML standard is in use in business related information transmission between companies. Applications are known as RosettaNet, PapiNet and ebXML (Tieke, 2003, 95.)

#### 2.7.7 Customer Portal

Portal is a service that collects information from different sources and different formats for the user. It is network-, channel-, and device independent and at the same time it is accelerating information searching. The portal has traditionally been used as a traffic aggregator or starting point for web-browsing or web support site. (Mallat et. al, 2004, 75.)

In addition the Internet portal can be located anywhere on the network, such as extranet or intranet. Extranet and intranet portals can also be called the common name by corporate portal or enterprise portal (Mallat et. al, 2004, 75). Enterprise portal is a tool that provides the company and its interest groups a (personalized) view to relevant information. Enterprise portal differs from the internet portals, amongst other things, because there is a question of the company's business support and development (Mallat et. al, 2004, 75).

Enterprise portals are made to serve companies customers, employees and suppliers. Enterprise portal offers the same services as a web portal, such as a search engine, e-mail, customized and updated content. Portal can also provide direct access to the Internet or other portals (WebFinance Inc, 2013). Collecting all the necessary information and tools in one environment, users will save huge amounts of time (Corporate Portals, 2013). The power of the portals is based on the services, functions and information which are collected in the same place; this can enlarge the potential number of visitors to the portal later on. (Tieke, 2003, 83).

### 3 METSÄBOARD SITUATION TODAY

The Metsä Board Customer service portfolio survey shows to the company which services already exist, which need to be modified and which ones are not yet available. The findings concerning e-business services were: e-Ordering, order tracking, Supply chain visibility, Customer portal, Electronic Invoicing and Self-Billing. These are all for deepening the business-to-business integration. In the first phase these services were seen as the most important for e-business. This thesis is a part of Metsä Board's Lean SCM-project. In the Lean SCM –project there is development of new business models and the old ones are rethought to meet the 21<sup>st</sup> century needs. E-business services are there as a part of streamlining the processes. It is obvious that these examined services have a defect on supply models. This survey is not considering the content of these new supply models. This thesis is made to strengthen and deepen the supply models. In Lean SCM project the business models and supply models are to be renewed.

#### 3.1. Description of today's situation in the e-services

Most of the investigated e-business services are in Metsä Board as in status not yet available. In the board markets there are already different kinds of solutions offered by Metsä Board's competitors. Reflecting on other carton board suppliers, Metsä Board is starting from behind with e-business services. Metsä Board today has an Electronic Data Interchange (EDI) in use with selected customers. Some 100 EDI links are built up with the customers, suppliers and logistics. But these are more unique and they are tailored. Also in the Lean SCM –project there is sub-project which is looking at standardizing EDI messages between Metsä Board and its customers. Most of the e-business services can be launched with EDI.

One widely used way for customers to examine products is the company's Internet pages. As mentioned in the interviews: the customers do their homework very well nowadays and they seek all available information where ever it can be found. They are aware of almost everything and they can even use this knowledge of company's products to negotiate lower prices, for example. Customers are used to working with the Internet and the threshold for using new IT-technologies is quite low.

### 3.2. Customer behavior

As mentioned before Metsä Board has customer's in three different categories: brand owners, converters and merchants. Customers, like brand owners, are ordering goods from one to three mills at their need. There can be straight contracts with the brand owners or there can be annual contracts with merchants or converters (the box making companies). Converters are ordering folding box board straight from the Metsä Board mills to preparing for the brand owner as a complete printed packing box. (Kuorikoski, 2012.)

Referring to brand owners, there can be as many as four printing houses making their worldwide products. The process itself can be so that the printing house makes the deal with Metsä Board negotiate the price and the terms of delivery. Or the brand owner has it all in its hands. For example, a famous Finnish foodstuff company which offers healthy food and delicious bakery and confectionery products has no straight deal with Metsä Board although almost all chocolate boxes are made from Metsä Board's carton. This company's brands are tasty baked goods, chocolate products, biscuits, sugar confectionery and chewing gum. It has three (3) converters who are dealing with Metsä Board. The carton boards themselves are accepted with the company and MB but the converter arranges the business with MB and sells the boxes to the company. (Kuorikoski, 2012.)

### 3.3 Business models

In the Lean SCM –project the next six (6) business models are the chosen ones for future development: Direct mill orders, Customer dedicated stock, Convert-to-order, Vendor managed inventory, Consignment stock and Common stock. The scope for of the Lean SCM –project is shown in the figure 7.

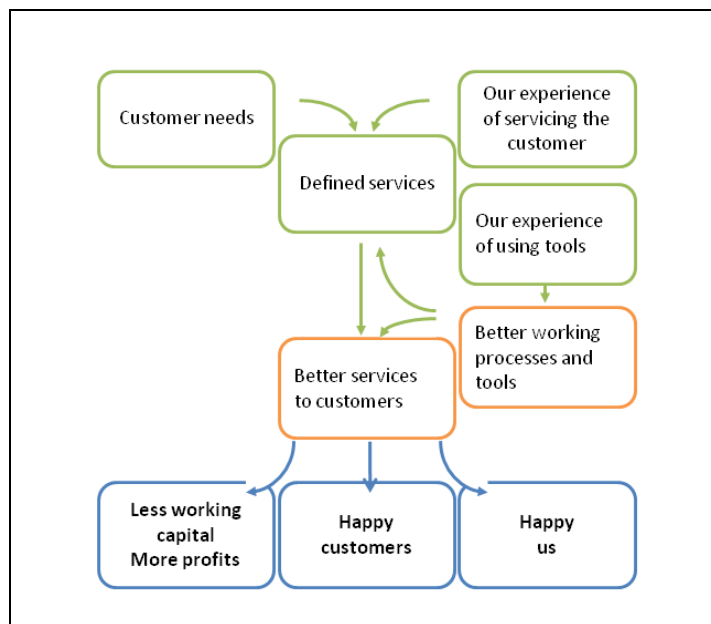


Figure 7. The logic of Lean SCM development in Metsä Board. (Metsä Board, 2013b).

The targets for the project are:

- 1) facilitate service provision to customers
- 2) reduce workload while providing services
- 3) reduce operating net work capital (ONWC)

These issues mentioned above have an effect on the need for more precise planning, a more effective way to work and to cut lead times. (Metsä Board, 2013b.)

### 3.4 Metsä Board new supply models

The Lean SCM –project is streamlining the process, methods and the way to think of the cardboard business in a new way. Finnish paper-, board- and pulp businesses have a long history and it has been the cornerstone of Finnish economy. Product development has been excellent and new innovative solutions have been invented thru these years. But in all those years there have not been so many new innovations in the supply chain management or customer relationship point of view. The long history means unchangeable practices and routines, which have not been changed in years. The world around us has changed, so the companies must change. Also it is seen that the future is in services and that's not dependent on the industry. (Metsä Board, 2013b.)

Metsä Board is renewing its supply models. Supply models in a nutshell are:

- 1) Direct mill order service. Availability to the customer is ensured by planning and forecasting. Delivery of customized products at agreed time can be made. The benefit for Metsä Board is increased production efficiency through improved planning.
- 2) Common stock. Customers order ready-made products from Metsä Board stock. Customers will have fast delivery of high-quality from Metsä Board. This stock will help to support new business and urgent cases. The benefits for Metsä Board are new business through the ability to respond to instant customer needs and improvement in production and converting efficiency.
- 3) Convert-to-order service. This service offers the customer customized sheets or reels with fast delivery. This service will benefit Metsä Board with ability to serve customers with special needs and it improves production and converting efficiency.

- 4) Customer dedicated stock. This service allows customer specified orders to be delivered to a local Metsä Board storage facility. The customer places call-off orders for fast delivery in accordance with agreed storage terms. The customers will get real added value service with an additional cost. The benefit for Metsä Board is a service opportunity to develop closer customer relationships.
- 5) Vendor managed inventory (VMI). This is a new service option that hands over stock level management to Metsä Board. Replenishment orders are placed via integrated systems, and an invoice triggered when stock is delivered to the customer. In this case the customer owns the stock. This service enables customer to have optimized stock levels. It can also maximize availability and inventory efficiency. The benefits for Metsä Board are based on automatic information exchange and streamlining order process.
- 6) Consignment stock. This service option hands over stock level management to Metsä Board. Stock is held at the customer's warehouse but invoiced only when used. Replenishment orders are placed via integrated systems, and an invoice triggered according to customer's stock consumption. This service enables customers to optimize stock levels. The benefits for Metsä Board are based on automatic information exchange, streamlining sales order process. (Metsä Board, 2013b.)

The e-business services are compared and examined against all these supply models. The assumption is that all investigated e-business services have an influence in these models but there can be variation between models and e-services. There is also the possibility, that during the examination there comes new e-business services to the scene or some of them can be found to be not relevant. The next two (2) chapters will show to us the real meaning of these services.

## **4 EMPIRICAL PART: E-BUSINESS SOLUTIONS AS A PART OF A CUSTOMER SERVICE PORTFOLIO**

21<sup>st</sup> century business transactions are little by little moving to the data networks. Companies must be involved in e-business; otherwise they will lose deals, market share or even whole business. Whether enterprises want it or not, all kinds of e-commerce are here to stay. Vice versa, e-business services can give companies a competitive advantage.

Today's executives know the meaning of the Internet and networks. There are huge advantages in the network but also there are challenges like how to stand out from the competitors, how to produce functional and usable system or how to implement it successfully.

### 4.1 Empirical overview

This study is divided in two empirical parts. The first part of the study is based on the e-business solutions interviews. Interviewees are Metsä Board key account and sales managers who are located in England, Germany, Spain, Singapore and Finland. Interviewees represent Brand owners-, converters- and merchants points of views. These questions were divided in two groups. The first part of the questions deals with customer relations to e-business services; the second part of the questions are dealing with Metsä Board benefits from e-business services. Second part of the study is a case study with Metsä Board's Customer Company. In this case, the findings from the literature and interviews are tested.

#### 4.1.1 Data collection by interviews

Master data collection was done by interviewing the pre-selected customer groups:

- 1) Brand owners
- 2) Converters
- 3) Merchants

In addition to the research problems there were two different question blocks. These blocks are the sub-questions for the research problem. The first part is to identify customer points of view regarding e-business services. The second part is related to Metsä Board points of view in e-business services. The question blocks are shown in appendix 1.

Answers in the interview study were clear and accurate. The interviewees had long experience in board business in different sales positions and locations. Interviewees are placed globally and for that reason this study has a large view from the cardboard business worldwide. From a geographic perspective there were no major differences in e-business services needs or requirements among the answers. Requirements, problems and challenges are the same regardless of the geographical location.

#### 4.2 E-business services interviews

In the next pages all the answers are collected together from the lettering. In the beginning of the section there is short describe about the asked question. The answers are put in the model of chart, where the basic idea can be easily found. After the chart there are pick-ups from the free discussion about the asked subject matter.

#### 4.2.1 Customer need for e-business services

Companies are at the stage where they are dependent on Internet and other data networks. More and more about the business is moving towards to IT-solutions. Enterprises are involved in IT at least banking services. They are having production control applications, intranets, extranets etc. Many deals are made in face-to-face meetings, telephone and via email. In the future more and more operations are to be made in web or networks.

Table 3. How do you see e-business needs for our customers?

Customer group	Requirement	Advantage / Risk
Brand owner	<ul style="list-style-type: none"> <li>• need for smooth, functioning, supply chain with the converters we are dealing with</li> <li>• Trust</li> <li>• the experience of the converter is very important in the whole deal</li> <li>• need to deepen present customer relationships and search new customers</li> </ul>	<ul style="list-style-type: none"> <li>- e-business can be as a service innovation which can give us competitive advantage (+)</li> <li>- great opportunity to expand and deepen cooperation (+)</li> <li>- E-business could even help in getting the contract? (+)</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• customers have already different kind of EDI protocols with competitors</li> <li>• need for e-business solutions is evident</li> </ul>	
Merchant	<ul style="list-style-type: none"> <li>• long term customer demand</li> <li>• customers would like to have control of the whole process from the beginning</li> <li>• our competitors has e-business services already (Stora Enso, Workington, Mayr-Melnhof)</li> </ul>	<ul style="list-style-type: none"> <li>- they are extremely interest about e-business (+)</li> <li>- e-business is a good tool for that (e.g. tracking the transport etc.) (+)</li> <li>- customers are willing to use e-business services and communication protocols between board suppliers (+)</li> </ul>

From the answers it can be found that there is certain need for e-business services among the customers or even that it is requested. Some answers see that most of the customers are struggling with lack of resources. Companies are thinking at the moment how they can use electronic platforms more efficiently with the people they have left. *“Key word is how to use resources efficiently (workload).”* One consideration is the expense involved in implementing and rolling out a new system. *“Who is going to pay for the system?”*

#### 4.2.2 Customers e-business service demands

Depending on the industry and its character there are different kinds of demands for e-business services. These next answers are demands seen in a big picture of a board business. Mainly business deals are concern about purchase and supply chain related demands.

Table 4. What kind of e-business services do customers need?

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>• smooth, functioning supply chain</li> <li>• BO's assume that all things are working properly between MB and the converter</li> <li>• Value can be created via e-business so that converter can give more precise information to the BO's about timetables etc.</li> <li>• Would e-business increase business overall?</li> </ul>	<ul style="list-style-type: none"> <li>- no interest about the order status (-)</li> <li>- ready boxes in a right place in a right time (-)</li> <li>- supply chain transparency (+)</li> <li>- e-business could give advantage in sales arguments (+)</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• competitors are already using e-business with our competitors</li> <li>• Invoice exchange; order processing exchange, documentation etc.</li> <li>• quality, service, price → need to provide value to the customer</li> <li>• place an order, order confirmations, view the production program</li> <li>• order status, where it is moving (tracking)</li> <li>• we are starting from behind</li> <li>• Differentiation!</li> </ul>	<ul style="list-style-type: none"> <li>- there is some kind of platform with their key suppliers (-)</li> <li>- whatever makes us more attractive to our customers is always a plus point (+)</li> <li>- with or without e-business services we are going to sell board (-)</li> <li>- we need to be proactive (+)</li> <li>- For example, BO sees through the converters system, that his orders are going to be in time (+)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• most of the customers are interested in e-business</li> <li>• Tracking, need to know where their orders are (already produced etc.)</li> <li>• Merchants will look after their stock levels according to promised time of delivery</li> <li>• information has to be very accurate, all information must be correct →</li> <li>• need to have full package (including all the information which is available)</li> <li>• Much work nowadays when making changes in the orders</li> <li>• Merchants has need for e-services such as electronic order confirmation</li> </ul>	<ul style="list-style-type: none"> <li>- e-business is 21st century business, customers are used to use e-services already with our competitors</li> <li>- Merchants will give that vital information to their customers</li> <li>- with e-business that will come much more easier</li> <li>- no mistakes between Merchants and their clients</li> <li>- Merchants need to have all information: production, delivery, shipping...</li> <li>- e-business services should make peoples work easier also in the customer side</li> <li>- In addition to e-services there have been other customers ("queue") to whom it is said that in the near future we are not be able to provide the required functions</li> </ul>

According to the interview, brand owners are not interested in the status of their product in the supply chain; they want to have finished goods in the right place and at the right time. Brand owners make their deals mostly somewhere in the Headquarters and they don't have the time or the possibility to track their orders etc. They work more on strategic level. They only get involved in the supply chain when something is going wrong.

E-business services are seen as a possible way to give more value to the customer. *"Whatever makes us more attractive to our customers is always a plus point."* Internally there have been conversations about quality, service and prices but there are other things that have value tag, e-business solutions have it. Also it is seen that with e-business solutions Metsä board would be more attractive in the market but what is doubtful is, are the company going to sell more board with it.

From the software point of view it has been noticed that there is a lack of standardization. There can be a risk of choosing software or a system and soon it can be found that some other system is conquering the world.

#### 4.2.3 Customers readiness/willingness to implement new services / new business models

In many different industries e-business services are self-evident. It is said that without e-business services trading is no longer viable. Metsä Board customers are already familiar with e-business solutions and they are cooperating with Metsä Boards competitors in this area. From a brand owner's point of view it is not directly important. But they will benefit from e-business solutions via converters e.g. by receiving more accurate information about their orders and visibility with regards to the status of the order in the supply chain.

Table 5. Are the customers ready / willing to implement new services / new business models?

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>YES</li> <li>converters saw a pure efficiency there</li> <li>they also seen that this is a matter of resources</li> <li>they would embrace it</li> </ul>	<ul style="list-style-type: none"> <li>there is not a one major customer met yet who wouldn't be interested in e-business services and discuss this issue in more detail</li> <li>Notice customer demands cf. ISO quality systems in years past (Editor's note.)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>yes they are willing, and they understand learning period etc. implement the new program</li> <li>We have to consider when offering something really advanced, is the client ready to adopt it?</li> <li>MB's chance is to take pioneering role and rapidly response to the markets needs for new services, helps us to lock in customers better, as well as vice versa</li> <li>Ability to create a long-term commitment to cooperate</li> <li>The client's systems can also be an obstacle.</li> </ul> <ul style="list-style-type: none"> <li>Merchants like other customers do not necessarily have the opportunity to renew their systems</li> <li>All clients cannot be made commensurate</li> <li>Good to be active in this area and try to create new innovations</li> <li>Customers has preference to cooperate with companies from the same continent or region → common interests, common restrictions</li> </ul>	<ul style="list-style-type: none"> <li>In a situation, where any supplier does not provide e-services, it binds us to better customer (+)</li> <li>When all suppliers provides same services, customers can more easily "jump" to another supplier, if everyone has similar systems in use (-)</li> <li>Like close down carton graining in Äänekoski and transfer it to Pyroll → Markets remains. Merchant systems cannot be bent in to separated invoicing; cardboard from MB's and graining from Pyroll</li> <li>special and complex operation models do not necessarily work in real life (-)</li> <li>E-services may well serve our main market in Europe against operators from overseas (+)</li> <li>Customers look kindly on additional services, one reason to operate with European supplier against competitors from over-seas (+)</li> </ul>

From the answers it is clearly to see that the e-business solutions, whatever form or purpose they are made for, they need to be implemented. There are suppliers in the market who are using e-solutions globally e.g. Stora Enso. *“Markets have started to be favorable towards e-based solutions, the possibilities are almost endless.”*

### 4.3 Examined e-business services

Next category of answers is associated with the assumed e-business services findings from the Metsä Board Customer service portfolio –study. This thesis is built from these services. These services are not yet available in Metsä Board and for that reason they are the most interesting ones. During the interviews, no new services were suggested. These next six (6) topics are related to the research problem.

#### 4.3.1 Order placing by the customer.

E-ordering is a service where the customer can place an order, make changes and receive confirmations thru different e-channels whenever and where-ever. This type of service is possible to use in a customer portal or via EDI.

Table 6. e-Ordering.

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>Direct orders and the visibility of the production program</li> <li>Requires the SAP system changes inter alia, delivery time, etc.</li> <li>current systems do not support this (request for a change)</li> </ul>	<ul style="list-style-type: none"> <li>customers are certainly interested by this (+)</li> <li>How would it work if a customer places an order? (-)</li> <li>there must be somebody in between when placing the order (-)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>Order placing, supply chain visibility (production, ready to transport, on a way, when it is in the Port) all that kind of things customers are using with the competitors already.</li> </ul>	<ul style="list-style-type: none"> <li>With this type of information they can report to their customers e.g. brand owners (+)</li> </ul>

On the merchant –side there are a lot of orders, but they are small in size and can have different shipping addresses all over Europe. E-business services can make things easier for us. In the future the customer is placing all of these orders and deliveries by themselves. *“The idea about e-ordering sounds great and makes sense.”*

Action differs from consumer market, where the service/product is purchased in the web and consumed right away, e.g. fly ticket. In B2B market, costs and events continue to come during the process towards the end-user.

#### 4.3.2 Order monitoring on-line by the customer

Order tracking is a service which gives more visibility to the supply chain for the customer. With this service, customer can follow the status of their orders as orders progress thru the Metsä Board supply chain – all the way to the customer. This will reduce workload in customer service centers, i.e. no more telephone calls to request and update on the orders. This service needs segregated order tracking tool or portal where all services can be found.

Table 7. Order Tracking

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>order tracking is seen as a necessary service</li> <li>order tracking like e.g. UPS is needed</li> <li>order status ("need to know thing")</li> <li>opportunity to inform changes in supply chain in a correct way (e.g. possible delay) without causing "panic"</li> <li>possibility to MB to take orders back etc. nowadays we can "hide" things and try to manage to fix the problem, what and how we will report to the customer?</li> </ul>	<ul style="list-style-type: none"> <li>there is so many benefits for customers (+)</li> <li>Fantastic in ideal world! (+)</li> <li>fear is how it really work in practice (-)</li> <li>how to react maintenance breaks or some other problems (-)</li> <li>customers are tracking orders which could be delayed, the you really need to have a good answer before customers spots it (-)</li> <li>if you report e.g. quality problems, immediately that gets blown around the whole industry that MB has quality problems and everybody knows it (-)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>The added value has been identified in order tracking</li> <li>Customers may reason or another, underline the urgency of a particular order</li> <li>In intend business, merchants customer is waiting frantic for his order</li> </ul>	<ul style="list-style-type: none"> <li>Now a "live delivery follower" is a human by email, phone (+)</li> <li>e-services can't help when customers "without basis" are seeking fast/good service (-)</li> </ul>

According to the answers order tracking is a good tool to be used by the customer but it involves many risks which have to be considered precisely. Mainly it seems to be question of timing. If MB sales people are requested to move orders back, or on a later production by the customer and with permission, there is time delay between when the order is moved from the system and the sales person providing confirmation to the customer. At the same time the customer is tracking the order status in the system, this could cause trouble. Nowadays MB might not want to tell the real problem straight to the customer.

From Metsä Board's side; like any other supplier it is normal, every now and again, to split the customer order with confirmation from them via a phone call. In most cases this does not cause a problem.

From converter point of view it can cause problems in the real world, if a system is transparent. They can't try to fix their problems because the Brand owners are already aware from the tracking tool. Also we have to keep in mind that the converting industry is one of the most conservative industries.

In merchant business the stock situation is easier to follow and stock replacements are much easier to plan. In the merchant business, there have been situations when, after hurrying some specific order in the production, and entering on merchant stock three (3) months after, the same order is still in stock. MB has made every effort to get the order produced and delivered. That kind of unnecessary hurrying sometimes causes panic in the supply chain. Now there are many people involved in the order tracking etc. The possibility for erroneous action/mistakes is too big.

### 4.3.3 Talking about supply chain visibility

Supply chain visibility is more than just order tracking. This service gives customers an overview and the possibility to analyze their key supply chain information to make their plans for future operations and purchases. The key information can be: demand situation information like forecasts and order history. It can also be information about stock availability, logistics and delivery histories.

This service allows customers to plan their purchases better. This service can also deepen the customer relationship, it can reduce speculation from ordering and remove the abnormal ordering behavior in the supply chain.

This service can be done via ERP–system (SAP) or by portal.

Table 8. Supply Chain Visibility

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>customers would be very interested in supply chain visibility</li> <li>portal-/live system would be useful in all described functions</li> </ul>	<ul style="list-style-type: none"> <li>that kind of system can really give value to the customer (+)</li> <li>today we have weekly stock sheets; we give information when the order is going to arrive → no need for that (+). We do this in once a week or when customer ask this information</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>MB can show the customer order status</li> <li>Stock information</li> </ul>	<ul style="list-style-type: none"> <li>more responsibility is transferred to the customer</li> <li>Current weekly stock sheet system is not working necessarily properly (-)</li> <li>The transparency has risks, making and to provide the cardboard can be quite a "roller coaster ride"</li> </ul>

According to the interviews, supply chain visibility is basically seen as added value for the customer. Interviewees also saw here risks which have to be considered carefully. *“A more transparent supply chain gives Metsä Board a competitive advantage but could it also be that the visibility would reinforce the range in the system?”*

Board business operates in between of two functional capacities. First there is production capacity in the board mills and lastly there is demand in the market. In between there is an unstable system with uneven demand driven by the cardboard customers. *“Is it possible to remove this wobble by adding information in the system?”*

#### 4.3.4 Monetary transactions

Electronic invoicing is a service which enables customer’s fast, accurate, reliable and efficient invoicing process. Electronic invoicing is seen as a business standard today’s business transactions. This service is also requested by the customers more and more. This type of service is possible to use via EDI.

Table 9. Electronic Invoicing

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>this is something which we are already asked about</li> </ul>	<ul style="list-style-type: none"> <li>our competitors already has it (-)</li> <li>one of the basic elements (+)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>major customers would like to have it</li> </ul>	<ul style="list-style-type: none"> <li>Terms of payment 14d +discount, with electronic invoicing we can avoid nowadays problems. Some of the customers are waiting for the final invoice before paying. With electronic invoicing they will get invoice immediately → then 14d payment time OK! (+)</li> </ul>

Electronic invoicing is seen as a norm in today’s trading. Compared to business to consumer (B2C) markets there is no difference. E-invoicing has replaced the traditional paper-based invoicing process. E-invoicing has also effect on cost savings and it is matched by revenue generating and cash flow potential. From interviews it was evidently described that e-invoicing is needed and even asked for by Metsä Board customers. Electronic invoicing also has an influence on terms of payment, as mentioned in the merchant part; with e-invoicing the time of waiting for the payment can be shortened.

#### 4.3.5 Self-billing invoice

Self-billing is a service which allows customers to bill themselves after consumption from the consignment stock. This service is will be involved with consignment stock service package and only to selected customers. The customer should treat invoice as an account payable and Metsä Board should treat it as account receivable. This service is used via EDI.

Table 10. Self-Billing

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>• not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>• Consignment stock OK (“it has to be positive”)</li> <li>• there has to be element of trust in self-billing</li> <li>• only to selected customers</li> </ul>	- today’s problem in Consignment stock is that customer can use it without we don’t know (-)
Merchant	<ul style="list-style-type: none"> <li>• most of our customers are reliable enough to use this kind of system</li> </ul>	

According to interviews, self-billing was seen as a workable method for stock related business. For example customer can have material for 60 days consumption in stock, when they take material out from the stock they can also pay the bill by themselves.

#### 4.3.6 Web based Customer Portal

When talking about B2B integration, automated operations between companies are to be discussed. This integration usually covers basic supply chain transactions and business messages between the supplier and the customer. This kind of portal gives flexibility to the customer, and at the same time supplier gives more control to the customer of their own transactions. Freedom of the customers actions are inside of an appointed contract between supplier and customer.

Customer portal can involve the next issues:

- order placing
- order changes
- documentation (order response/confirmation etc.)
- order status reports
- dispatch advice/delivery notes
- receipt advice
- inventory reports
- invoicing

Table 11. Customer Portal

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>• not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>• we need to have portal to make e-business solutions work</li> </ul>	
Merchant	<ul style="list-style-type: none"> <li>• there must be portal to make discussed e-business service happen</li> <li>• Main customers in Iberia: Portal is OK</li> </ul>	- customers wants to manage their business by themselves via Internet, portal is a must (+)

In the discussions during the interviews there were no representations against a customer portal. More than a need for a portal, the opinions were “*how to make portal attractive, functional and distinguishable from competitors’ portals.*” It is so that the Internet, with all of the different services and functions, is here to stay. More and more business transactions are being transferred to web-based technologies. Interviewees also saw significance in the change of generations on the customer side. The new generation is accustomed to using Internet-based services much more than our partners in cooperation before. Metsä Board should lead the way to the online marketing.

#### 4.3.7 Competitors in the e-business

It is a well-known fact that Metsä Board's competitors already have functioning e-business services with their customers. Mostly the e-services are order placing and invoicing. Metsä Board customers have their own solutions and it is known that couple of them has asked Metsä Board to join in their system. From a carton board supplier point of view there can be an advantage to linking into a customer's system. In the long term, and for thousands of Metsä Board's own customers, there is advantage to having our own system, where the company can handle and manage its own market. Customer relationship management software (Metsä Board's Score board) and e-business services complement each other to give good value to Metsä Board.

Table 12. Do the customers already use similar services with other folding boxboard manufacturers etc.?

Customer group	Answer	Comments
Brand owner	<ul style="list-style-type: none"> <li>• yes</li> <li>• Stora Enso, International Paper (IP), MeadWestvaco (MWV), Iggesund</li> </ul>	-
Converter	<ul style="list-style-type: none"> <li>• yes they have it</li> </ul>	- there are competitors already, e.g. Stora Enso
Merchant	<ul style="list-style-type: none"> <li>• yes</li> <li>• Stora Enso etc.</li> <li>• Big suppliers such as International Paper (IP) and Stora Enso are doing it</li> </ul>	- clear forerunner is not known

From the interviews, it is clear that Metsä Board's competitors are already using different kinds of e-business services. "*Stora Enso seems to be a leader.*"

#### 4.3.8 Customers e-business experience

Different kinds of Internet- or extranet portals have been available for a long time. These have been going together with business model innovations. More information is used to communicate and interact with suppliers and customers. Competition in the e-business solutions offering has begun also in the paper and board business.

Table 13. How does the customer experience e-business?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• can make more value between MB, converters, BO's and other customers</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• e-business is a positive thing</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• we are living 21st century</li> <li>• there is need to have e-business services</li> </ul>

According to interviews e-business services can be used as a service innovation to strengthen and make the supply chain smoother between converters and BO's. This can be *“extra sort of positive thing for us in the eyes of a BO.”* With e-business solutions we can provide more value to the customers or BO's when giving more precise information etc.

#### 4.3.9 E-business services and pricing

When making new innovations there is always question about the financial issues. Should the service have a price tag? Of course that depends on service and it also depends on the industry where the company is operating. Many times service is seen as a part of the deal.

Table 14. Are the customers willing to pay for e-business activities and / or - services?

Customer group	Answer	Comments
Brand owner	<ul style="list-style-type: none"> <li>• not relevant</li> </ul>	
Converter	<ul style="list-style-type: none"> <li>• no</li> <li>• e-business is a part of service</li> <li>• Part of the service (built into the cost)</li> <li>• Can be sold as an added value (" need to use word value instead of cost")</li> </ul>	<ul style="list-style-type: none"> <li>- doesn't make sense e.g. self-billing</li> <li>- it can get you closer to your customers</li> <li>- all customers are important</li> <li>- For example, UPS does not separately charge for monitoring the possibility of tracking</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• free of charge</li> <li>• competitors are not charging anything, nowadays normal thing in the market</li> <li>• cannot be so that we will be first to ask for money from e-business services</li> <li>• customers are not willing to pay anything at all</li> <li>• Not a cent, vice versa customers wondering how this will make things cheaper?</li> <li>• Business itself must negotiate on e-based (e-tender)</li> </ul>	<ul style="list-style-type: none"> <li>- Can carton board suppliers do something more preferably along e-services?</li> <li>- E-business is cost-neutral</li> <li>- In general, the benefits are associated with the adoption of the making thing ease, accurate and fast</li> <li>- So far the initiatives of e-services have become from the customers</li> </ul>

All interviewees answered clearly “No” to this question. E-business services are seen as a part of the deal. When a customer buys certain amount of cardboard, they will have access to Metsä Board’s e-business services package. “*E-business is part of a 21<sup>st</sup> century trading systems.*” E-business does not have a tangible value tag, it is more part of the relationship. “*There is no other choice than to follow what is happening in the markets, what others are doing*”. Making money with e-solutions is now gone. Companies/enterprises who invented e-services 10 or 20 years ago had a short period of time to make revenue with their innovations. A common question is: “*do we have the readiness to do this or not?*”

#### 4.5 Metsä Board point of view

The theme interview comprised of two parts which were the previous “customer point of view” and second part “Metsä Board point of view”. These next 10 questions examine the e-business services influence on the company level.

##### 4.5.1 Company’s benefits from e-business services

Literature overview and the interview answers are in the same line when talking about the benefit from e-business services. One major thing is workload reduction. The company’s customer service center’s personnel are on the telephone most of the time or sending e-mails, only to calm down overenthusiastic customers, to trying to trace their order status. With e-business services these resources can be allocated and released to profitable work.

Table 15. What are the benefits from e-business

Customer group	Requirement	Advantage (+) / Risk (-)
Brand owner	<ul style="list-style-type: none"> <li>• reduced workload</li> <li>• less mistakes</li> </ul>	<ul style="list-style-type: none"> <li>- Less manual intervention in the whole process (+)</li> <li>- Still we are in charge of block reports and ATP-checks etc. Still some manual work needs to be done (-)</li> <li>- more automatic and streamline process</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• reduced workload, makes things more efficient</li> <li>• Reduction of manual work</li> <li>• less mistakes</li> <li>• tie more customers in</li> <li>• good thing is that people who are working in purchasing are used to work with e-services → easier for us</li> <li>• Score Board, combined with e-services will make the seller an even better professional</li> </ul>	<ul style="list-style-type: none"> <li>- if you can tie customers in to this kind of working then it is very difficult to change the plan (+)</li> <li>- The seller is able to monitor the status of the order (customer service efficiency)</li> <li>- Score board project (+)</li> <li>- VMI concept support (+)</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• reduce a lot of workload in customer service</li> <li>• less mistakes</li> <li>• we must be the developer of the board industry</li> <li>• we can tie up the customer better to MB</li> <li>• there should be concrete substance and functional systems</li> </ul>	<ul style="list-style-type: none"> <li>- We will have competitive advantage if we are at the leading edge, if we are the fifth supplier to do so, there is no longer benefit? (-)</li> <li>- E-services will be gladly received by customers in trade with cost control and profit making (= profitability problems) are also an ever more under scrutiny. If these services can facilitate the customer's plight, we are strong</li> <li>- The benefits of such a system is easy to market, which will help in reducing the working capital</li> </ul>

In the discussions during the interviews it was mentioned that benefits will come when e-business is made as a two way thing, it will not just be a benefit for the customer. One big thing in the markets is that competitors have e-business solutions already. Some customers are building their own solutions for board companies to join. In some answers the e-business solutions were seen as a support for customer relationship management e.g. sales people can update their information about the customer prior to the actual customer visits. They can use this software for their preparation to meet customers.

E-business services have the potential to reduce costs, most of the savings come from the removal of trivial work.

#### 4.5.2 Value to the company

E-business services should be thoroughly examined and planned for business-to-business process. These services can give enterprises a competitive advantage and offer value in many different ways. When enough data has been gathered from the system the company can use this data in decision making, marketing, pricing etc.

Table 16. What kind of value we can get from e-business services?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• How customer can be helped to improve and better their own operations and business? For example, e-business, the customer could give up some of their own activities, such as order making to be easier (monitoring, processing, purchase order processing)</li> <li>• savings for the customer → a good argument to sell</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• lock-in situation</li> <li>• improving forecasting, that's the key for us</li> <li>• Delivery time monitoring</li> <li>• Visibility of the supply chain, it is a selling point, as long as everybody not has it</li> <li>• Easier benchmarking, either market-, customers-, or internally, as well as improving internal operations.</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• good to have e-business services to the market, market is expecting that to happen</li> <li>• with E-services, we can get out of the affairs of personification</li> <li>• to achieve uniform quality in the services, that's an advantage</li> </ul>

According to the answers the value for Metsä Board from e-business services seems obvious. With e-business services Metsä Board is able to deepen customer relationships, reduce the customer's and own workload, helping the customer and their own order tracking and cut-off transactions.

#### 4.5.3 Value creation for customer's customer

From the literature it is known that e-business has the potential to generate new wealth. Different kinds of business innovation, mostly services, are delivering more value to the customer. With e-business services, more information about the products, logistics, purchasing and services can be immediately available to the customers. E-business services are a new way to connect buyers and sellers in the existing market.

Table 17. Value creation for customer's customer? For example, brand-owner?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• Correct information from converter to BO. This can be competitive advantage for us.</li> <li>• providing accurate information, reliable &amp; smooth supply chain</li> <li>• E-business has opportunities for more efficient processing of orders</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• forecasting is the key point here (Metsä Board → converter vs. Brand owner)</li> <li>• converter can't give us a forecast if a BO can't give a forecast to the converter</li> <li>• if we have a very transparent system then we can really help BO's</li> <li>• forecasting will sharpen our ability to supply goods more accurate</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• markets are expecting e-business services, that's value itself already</li> <li>• BO just want to have ready products just in time</li> <li>• much better/quicker information to printers to BO's. Printers can see the situation straight from the e-business system</li> <li>• Delivery time to Iberia area is six (6) weeks. It's very important to know when the material is going to arrive. BO's are only in need of that information when they ready boxes will arrive.</li> <li>• The client's sales team work, place orders, and looking for customers <ul style="list-style-type: none"> <li>◦ information from sales back to the purchasing department and manufacturing usually fails</li> </ul> </li> <li>• If some solution will increase our competitiveness, it also adds that to our customers</li> </ul>

From the answers it is possible to pick up some commonalities. It is seen that the biggest problem in the supply chain is between BO's sales and purchasing departments. BO's internal functions should be streamlined. In many cases cardboard boxes need to be created "*from scratch*" when sales and marketing launches a new campaign. Customers are ordering the cardboard in the nick of time when they need the boxes. In some cases, ready boxes must be available 10 days after order for use on the packaging line. "*Supply chain's longest distance is from the BO's purchase to BO's marketing.*" The last thing to do is to purchase boxes. For example one customer needs to know when material is going to arrive, right place, and right time. Another customer will give a forecast to the printers and Metsä Board about what quantity and what grades printers should order. The theory and practice are not matching each other. "*Normally they forecast 60 t/month, but in reality it is: one month 0 t and one month 30 t, next 120 t.*"

Brand owner and converters businesses are growing, but sales people forget that the board has a delivery time "and it does not just appear". The board has to be ordered and the delivery waited for. Other businesses are more resistant to changes in the supply chain and they still tolerate lead times. The closer we are to the end user, the less understanding of the carton board exists and its delivery.

Boxes are "self-evident". The most interesting things to the converter are price and quality, much more important than the availability of raw material. E-business service solutions are expected to relieve these issues.

#### 4.5.4 Metsä Board's supply models comparing e-business services

Business models are designed to make purchasing easier for the customer. Models are used to help customer choices, cutting transaction costs, connecting customers and producers and, of course, because of competition. Business models should include innovation and new thinking. Good business models can offer significant value to the customer. Good models can also create sustainable competitive advantage to the company.

Table 18. What supply models will benefit from the e-business services? Which e-business services?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• Is not yet known, there is information about the Lean SCM's introduction for future changes</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• all services have to be more or less tailored for every supply model</li> <li>• there can't be any supply model which will not benefit for e-business services</li> <li>• tailoring is needed in any case: "all things to all men" is not going to work</li> <li>• Determine which service is suitable for different delivery models</li> <li>• Delivery models are not in themselves new, and all of these have already been used around the world</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• has been no conversation about the supply models with customers</li> <li>• Services must not be "oversold", they must be functional and real</li> <li>• All supply models benefit from the of e-services</li> </ul>

This thesis is a part of Metsä Board's Lean SCM –project. From the interviews, it is seen that Lean SCM's starting point must be the total value not price. *“Customer will settle the final price of what they are paying.”* Lean –project has not yet been launched, but in this phase there has still been seen a lot of the theory in Lean SCM -project.

Metsä Board's competitors are able to provide short lead times (even the Scandinavians), five (5) days to central Europe with no additional cost. Mayr-Meinhof supplies from Slovenia, Germany and the Netherlands. Stora Enso supplies sheeting plants from German's Lübeck and Bayer Fürth, Spain Barcelona. We have to remember; this means big stocks. *"It is psychology, what is the price in different manners?"*

#### 4.5.5 E-business services and effect on workload

From the literature it is obvious that all kind of e-commerce, e-business solutions and e-services reduce workload. When more operations and activities can be directed to a client's task, it reduces the workload in customer service and other functions. Companies are struggling even today with answering customer's questions about their order status. Mainly this work is done by email or telephone. With e-business services this contribution of work can be used much more profitable way.

Table 19. Does the e-business relief workload in customer service?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• reducing continuous e-mailing and telephone communication</li> <li>• order process concentration and intensification</li> <li>• relieve resources for more useful actions</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• it has to lighten workload (=based on the discussion during interview)</li> <li>• yes</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• yes</li> <li>• yes</li> </ul>

From the answers we can see right away that e-business solutions have the ability to workload. All the respondents have long term work experience in customer service and they really know what kind of work it is. During the interview some important topics came out. One was the way how these kinds of e-solutions should be introduced. There can be three (3) "pitfalls." First; the system is oversold, second; people's workload increases instead of decreasing or third; everybody tries their best, but the system does not work properly. Another perspective is that technology/software exists and it can be purchased, but the commitment of the personnel fails.

One example of work load reduction can be found in Metsä Board's CRM (Score board) project: in the Metsä Board E-news Letter, there are customer contact details in the front page of pdf-file. There's a link beside where the customer itself can update his/her contact details. This kind of small thing makes customer service work much easier.

#### 4.5.6 E-business services and effect on mistakes

With e-business services the number of mistakes can be minimized. In the order processing there can be frequent possibilities to type wrong letter or number on the keyboard. Wrong sheets size, reel width, variation in tonnages etc. can cause big problems if these are not seen before final delivery. Companies are paying enormous amount of money for reclamations and claims.

Table 20. Electronic services reduce errors, are there problems in that?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• there is very rarely service failures</li> <li>• catastrophe can come when we miss delivery times, production is late, missing ships and the final delivery is late</li> <li>• there comes claim for lost machine time or standing machines</li> <li>• Human errors happen easily and continuously</li> <li>• Errors can be excluded from the system, that has large financial value</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• yes there is</li> <li>• wrong sheet or order size, the wrong grade (entered manually at the sales office)</li> <li>• Documents go to the wrong place (the worst part is that the price goes to the wrong customer)</li> <li>• Minimization of errors and defects is the most important</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• reduce errors yes, problems no</li> <li>• The error is a problem as long as at least one occurs</li> <li>• for some reason errors come in cycles</li> <li>• it is not always an error, it might as well be failure of the supply chain</li> <li>• Sometimes the errors are really expensive to fix even the mistake itself is small</li> </ul>

From the answers it is said that in Metsä Board today there are "*errors all the time*", de facto. The fault can be quality, delivery, quantity etc. Of course a lot of activities have been improved. All the improvements, even if small, are worth doing, "*these are always happy to tell to the customer*".

Cultural and language differences will affect a lot of errors even today. Can e-business services avoid these kinds of things – maybe not but it can help company to reduce them. In all activities the default is error-free operation. It is said that; *“if you want to be very good - do a little bit more“*.

#### 4.5.7 E-business and the flow of information

Mostly the effect on information flow is factored around transparency. How the company can inform and communicate with customers much more reliable way. Speed, accuracy and integrity of the data are the key issues. Also it is a challenge, when all the information is transparent. It is not possible to make last-minute corrective actions or try to somehow manage a way out of the problem for instance.

Table 21. E-business can streamline the flow of information, are there problems?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• yes it can</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• That is ok but it depends on what degree we talking about the information flow</li> <li>• Forecasting, OK. Tracking orders – that’s an issue.</li> <li>• Can be made more effective, faster flow of information</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• need to have immediate information about their orders</li> <li>• Quick answers, no mistakes (they can put orders direct into system), precise information, transportation, shipping etc.</li> </ul>

In the interviews it came out that 25 years ago everybody was talking about JIT (Just in Time), then it was 48 h now it is 1h. Everything is so fast nowadays. One day or one hour makes such a difference because we are all promising things that are removing any flexibility for us. *“We have to justify the customers in any case.”*

Business is all about people and relationships. *“We can make lot more with the people we know.”* Or vice versa, the flow of information nowadays could be even personalized to certain people who do their job excellently. This is based on human activity, outside of all systems. That is a competitive effect, which has born in customer service by the people who are working there. Employees have

figured out what the customers really appreciate. Can system or machine do the same? Can this kind of service be guaranteed by the service? If a person changes in the customer service team, the standard of service lowers for a while. With e-business services the system can take care of the same, and remove the influence of the human factor, making data uniform and accurate. For example changes in the supply chain (e.g. delay) can be informed immediately thru the system.

#### 4.5.8 E-business services and "lock-in"

E-business services are the sort of business which can give the opportunity to a supplier to make a lock-in situation with its customers. When two companies are connected to each other with information technology systems, will detaching from that system be expensive or operationally difficult. Lock-in has of course positive network externalities. Companies who are locked-in have the opportunity to develop trust and loyalty between each other and make switching to a competitor much more disagreeable. Collaborated companies can develop products, services, processes e.g. together in trusting relationship.

Table 22. Can we achieve with e-business services a "lock-in" situation, so that the value for customer is so high that the customer commits itself to Metsä Board for a long time?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• MB strategy is to lock-in or inveigle so deep in to BO's business that the exit costs for switching away from us will be quite high</li> <li>• not only price-wise or volume type of things but really in bed ourselves in their business as much as we can with innovation, development, helping them with sustainability questions, trainings</li> <li>• e-business services can deepen our relationship, make lock-in situation</li> <li>• lock-in should be striven to, especially key customers should be locked-in</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• lock-in situation can be achieved by increasing the service level</li> <li>• MB should be able to provide more than just a board, not only supplier of raw materials</li> <li>• E-services causes higher customer satisfaction and makes leaving more difficult for the customer</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• "lock-in" exists already, long term contracts and business between MB and customers</li> <li>• 70% of customers, more than 15 years co-operation, e-business can deeper or strengthen relationships</li> <li>• "Old" customers are having new employees' → new thinking; times are changing with young purchasers etc. Youngsters used to new technologies.</li> <li>• e-services are maybe good with new customers, easier way to get them</li> <li>• with joint projects we can commit customers even better</li> <li>• Deepening the customer relationship is the key point</li> </ul>

According to the interviews the lock-in situation is a worth striving for. Customers are more and more willing to use electronic solutions with suppliers. *"They are already used to do it with competitors systems."* 10 biggest printers in Europe mean 65 % of capacity. *"We are "married" with all in any case."* One pitfall can be if Metsä Board is e.g. fifth (5) supplier who offers e-business services, it is not locking in so much anymore.

It was foreseen that Metsä Board services may have differences to our competitors, easier to use, attractive and practical user interface etc. For example, one of Metsä Boards customer has their own order processing system, and that interface is not user friendly, *"it should be a model of Apple or Nokia."*

Introducing and implementing the system was also seen as a risk. When launching new software, they should be remaining in use long term. *"Then when you do not need any training, it has gone well"*. Large and extensive training needs to be avoided. When some additional services are offered, the expectations towards it are growing *"transparent system is not necessarily better system."*

#### 4.5.9 E-business and the meaning of strong partnership

According to the lock-in, there is in the background, a strong partnership between suppliers and customers. Customer relationship management is a big part of the dealings. In the board business like any other business-to-business environment there is an aim towards a long-term partnership. There is no use in reaching for occasional transactions; the goal is for many years of successful cooperation. E-business services will have a role in this collaboration. We have to keep in mind that in B2B –environment, the e-business solutions have a support function in making business.

Table 23. A strong partnership will strengthen the market position. With e-business services we can deepen the partnership with the customer. How strong partnership is worth striving for?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• Nowadays there is more of a three way conversation between the converter, BO and us about supply chain things as well</li> <li>• when BO's have more knowledge about forecasting and allocations, e-business can be thrown as a mix in three way discussions that this we can also offer</li> <li>• when Lean package is rolled out with e-business services that is a benefit for us</li> <li>• With Nestle we have this new 3-way discussion about SC which they don't have before. It is more focused on forecasting; optimize production, minimize stocks, reduce working capital etc. New supply models will come as a topic next and e-business can be brought in to those discussions.</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• it has to have positive answer</li> <li>• As soon as we get a Customer Portal to have e-business solutions, then we can start to develop it more. "That is the starting point."</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• as deep as it can, long term contracts</li> <li>• e-business will help us to keep the old customers and it will help us to find new ones</li> <li>• customers has learned to find information thru the web</li> <li>• A strong partnership is the only goal</li> <li>• we cannot built upon unsure customer accounts</li> <li>• "Strong partners makes strong partnership"</li> </ul>

According to interviews the amount of people who Metsä Board is talking to in their customer base, is getting wider. Traditionally the company makes business to procurement director or technical director or even sales director but with e-business Metsä Board can get different people in different companies talking to one another. Different relationships have to be informed. Different people are having an input to how valuable or how good this supplier is, *"that can only be positive thing"*.

With e-business services it is the same, like to get a first order from a new customer. You can be pretty sure that when she/he starts to do that job and starts to develop the relationship and when you get to know more about one and another and know each other's capabilities, new orders with different products will come along. *"If you get this thing up and running and you can demonstrate that you are good at it, then it makes sense"*. To start co-operation with e-business, you start to probably discuss with people you've never been even met before.

In the early days it was seen that it was quite normal to send technical specifications by email, now the customers are seeking this information from the Internet, no more inquiries need to be sent. Nowadays customers are much more aware about products and technical details. They are now professionals in purchasing; today they really know what they need. Sometimes customers act like they don't know anything but they have already checked things from the web. They try to lower prices for example by playing ignorant. *"It's the part of the game, both parties should make their homework."* In general, customer service activities are the basic stuff, not rocket science, *"it just has to be done."*

#### 4.5.10 E-business and CRM

Every business has its own characteristics on how to make customer relationship management work. It is not only making business, it can also involve many other things. In one extreme it can be ice fishing somewhere in wilderness and at the other end updating customers contact details. Nevertheless all this is to understand the customer and their business better. E-business services are a support function to supply chain management in the same way as customer relationship management. All of them are associated with each other.

Table 24. Do the e-business services support "traditional" customer relationship management?

Customer group	Answer
Brand owner	<ul style="list-style-type: none"> <li>• all the time we must think how to deepen our relationship between customers</li> <li>• we have to line our strategy with their strategy</li> <li>• create higher exit barriers</li> <li>• The way we can differentiate ourselves is to be deeply inside in customers' business and we understand their business, we provide necessary services and so on. We need to be irreplaceable in their eyes</li> <li>• with our e-business services we will not only catch-up the competitors, we need to set the bar higher for others (not to have only basic things to offer)</li> <li>• Customer relationship management is a key issue</li> </ul>
Converter	<ul style="list-style-type: none"> <li>• yes it will support</li> </ul>
Merchant	<ul style="list-style-type: none"> <li>• YES, it will support</li> <li>• Metsä Board is the only one which is out of e-Business; we are out from "normality" which a big supplier has today.</li> <li>• we are now exception in the market</li> </ul>

From the interviews it is seen that customers need be able to rely on Metsä Board's products, this gives Metsä Board a competitive advantage. Competitors are getting closer and the gap is narrowing. In some cases there is no difference in MB's products and competitor products. The company should keep in mind not just to be only transactional supplier, who comes in, gives a price, makes volume based deal for the next year and then goes away. Then a year later comes back to do the next deal. *"That way is very vulnerable"*.

E-business should be a well-planned and coordinated service element for each of the service offering to the client. *"Just talking about e-business with customers is a positive thing."*

## 5 INTERVIEW SUMMARY

From the interviews it was clearly seen that e-business services are needed – even asked for by the customers. All along the line the answers were similar. A clear distinction among the respondents was not detectable, the needs and hopes are the same regardless of geographical location. Also a distinctive difference between brand owners, converters and merchant related answers was not verifiable. E-business services seem to have become an universally accepted way to make business transactions in B2B markets and today's IT-concentrated world is demanding it.

### 5.1 Descriptive information on the interview results

Respondents were underlining that product development is a continuous process and that there is continuous progress in it. Different kinds of new products are under investigation all the time. Also it was evident that salesmen sell, production is producing and supply chain is delivering goods. The future is seen in the development of services. Services and all kind of joint operations must be developed with the customers and internally. Supply models / e-business services need to have specific configurations and they should be described exactly and in understandable way. It is important to figure out how these services are marketed and offered to the customers and how they are implemented internally. Metsä Board as a company needs to make noise among the customers so that they understand what Metsä Board is doing; this is ultimately also a benefit to the customers. It's important to define what services Metsä Board already have in addition to the supply models, to internalize the benefits, advantages and disadvantages, as well as the potential costs, taking into account the profitability of sales (delivery capacity and speed).

One of the biggest needs for services is the forecast of demand. Brand owners have difficulty predicting the sales of their own products. Metsä Board needs to have visibility of the customer's demand. For example, what kind of boxes the customer has to have; a forecast for 3-6 months ahead is needed. Sales offices should have a view of the customer's order inflow and the demand. In the Lean SCM –project there is a separate initiative for forecasting.

One big challenge is the traditional "Finland-delivery model". This was deemed not to be enough; local services have begun to develop (APAC area is far from the Finnish mills). Storage service solutions are actively being developed in the APAC region, as well as the sheeting services. Small stocks already exist e.g. in Singapore, Korea and Australia. These services will continue to increase.

The company must keep in mind Metsä Board's goal for the future of sales and business development: more brand owners.

E-business service solutions were seen as an opportunity for the benchmarking in the future. With e-service software's the company can easily benchmark competitors, customers, different locations, business areas or even internal activities.

Supply chain visibility was seen as one major need. Supply chain visibility should be down to brand owner level. With that customer subcontractors can follow e.g. BO's inventory levels and they can fill up inventories as required. Metsä Board would provide that kind of help to the customers. Metsä Board would be able to focus on production programs etc. better and to shorten delivery times.

In SCM and CRM there are still "*low hanging fruits to be collected*", all kind of services which can support sales should be in use. E-business services have that potential. E-business services, new supply models and existing services along with product catalog; that can be something which cannot be bought from another supplier.

## 5.2 Recommendations according to interviews

Metsä Board as a company has to be involved in e-business. E-business services are important components when developing services, supply chain management, customer relationships management and when shortening lead times, reducing workload and make more profit. In business-to-business markets e-commerce (e-business services) has become widely accepted and it is a part of 21<sup>st</sup> century way to handle business transactions. Comparing to business-to-consumer (B2C) markets, where buying online is as basic a process as can be, also this habit is increasing in today's B2B purchasing and selling. In B2B markets there is one big benefit to B2C markets, all transactions are related to an agreement between companies.

Based on the interviews the following tasks are recommended to be implemented. First: The most important thing is to have a smooth functioning supply chain. The basics should be in a good shape and tested. The supply chain should be streamlined with great piety. Lean SCM –project is a great opportunity for that. Second: authentic information given to the customers, what is really needed and what Metsä Board gives to the customers must be correct. The flow of information should be fast and accurate; it is mostly needed in exception handling (early warnings). Third: proposed e-business services in the previous pages should be available, tested and connectable to services or products. Recommended operations are shown in table 25.

Table 25. Recommended operations

Operation	Requirement
Supply chain	Smooth, functioning, reliable
Information	Authentic, correct, fast, right time, available
E-business services	available, connectable to services or products

Interview answers are from a very similar perspective, globally, on e-business responses. E-services are needed; the company has to initiate them into products as quickly as possible. Lean SCM project is a great opportunity for the whole company.

### 5.3 Case study

After the interviews and more precise acquaintance with literature, the case study (test marketing) with the six (6) e-business services was arranged with a real customer company. This company represents both converters and merchants from Metsä Board's customer base; this company is making cardboard business at the European level. After the interviews, no new services were brought out. The assumption was that they should also not come out on the customer side. The questions were sent to customer's representative in advance, as well as information from the e-business services at the header level.

#### 5.3.1 Results from the case study

At the beginning of the case study the Metsä Boards e-business services were introduced in a condensed way. The contents of the services were reasonable and understandable to the customer. All of them seem to be attractive from the customer point of view.

There was a discussion right after the presentation. In that discussion it came out that: *“with e-business services there is possibility to reduce stocks”*. This reduction can be achieved by decreasing the need for the buffers. Also net working capital (NWC) expenses can be cut down by e-business services. Net working capital is a finance characteristic for the indicator that shows how much of a company's current assets are financed with long-term liabilities and equity.

NWC is calculated as follows:

$$NWC = \text{current assets} + \text{Inventories} - \text{Short-term financial liabilities}^{(*)}$$

\*) excluding the accounting from next period

#### Equation 1. NWC

All the services were narrowly examined and commented on. Based on the case study it can be said that all the services aroused interest on the customer side. The comments were very accurate and constructive. This customer is doing at the moment their ERP renewal project and they have been creating a portal for their customers. In addition to the verbal comments there was a numeric evaluation of the services. The numeric evaluation was made for cross-checking the e-services demand and to see its necessity. Evaluation scale was from one (1) to three (3) point, three as a maximum score.

Table 26. E-ordering.

E-business service	Comments	Benefits/Disadvantages	Points
E-ordering	<ul style="list-style-type: none"> <li>• e-ordering is good when it happens via ERP automatic transaction</li> <li>• Order confirmation is needed</li> </ul>	<ul style="list-style-type: none"> <li>- it is OK when the partner company is using ERP system (+)</li> <li>- there is no benefit to ordering thru portal, it can be very slow way (+)</li> <li>- The information e.g. order confirmation is needed immediately after order making including desired deliver time. The waiting time for response should not be more than 2h (+)</li> </ul>	3

In the conversation it was mentioned that “*E-ordering includes nothing new at the market but it is good to automate order making functions.*” If the order is made via an ERP system, then the most interesting thing to know is the delivery time. This can also be done via Portal, it can show what is the nearest block to get some goods and user can choose what it is the best for customer demand. The most critical factors from the customer point of view are: response time, delivery time and price.

From the Metsä Board side e-ordering needs an ATP check in the ERP –system; currently this needs human resources in between. Customer waiting time must be as short as possible.

When talking about electronic invoicing in same context, it was clearly seen that it is not needed with the order confirmation. In most cases the invoice goes to a totally different place and person and normally the invoice will come with the delivery. E-invoice with the e-ordering can cause problems. E.g. tons do not match with the ordered/delivered ones exact, “*how this can work?*” In the order making phase the confirmation is needed and the amount of goods and delivery time. From Metsä Board side this can be done with EDI’s Papinet packet; order status changes, inventory status, delivery note, invoice.

Table 27. Order tracking

E-business service	Comments	Benefits/Disadvantages	Points
Order tracking	<ul style="list-style-type: none"> <li>• Needed as a troubleshooting tool</li> <li>• nobody has enough time to track orders on the Baltic sea, status messages are enough</li> <li>• order tracking is “nice to know” thing</li> </ul>	<ul style="list-style-type: none"> <li>- messages for e.g. delays must be made proactive from MB side (+)</li> <li>- in case of delay it is making value in the supply chain → there is time to make changes in later production etc. (+)</li> </ul>	1,5

In most of the cases order tracking was seen as a tool for troubleshooting or exception handling. Order tracking can be useful if there is a change in the delivery or when the ordered goods are in e.g. Lübeck Warehouse, this has influence especially when planning call-offs etc. In short legs the most needed information is availability, delivery time and at destination information. Concerning the order tracking the important things to know are: “*problems and disturbances which must be reported immediately.*”

For example: If the supply chain is so reliable that the goods are every Wednesday in Lübeck then that is enough. Customer can make call-off on every Monday in that case. It can be seen also that if the delivery time is 3 months, there is no need to know the status in between. Things are totally different in overseas markets,

and then it may be necessary to know the status, port of calls etc. Order tracking system should be watertight, the message has to always be 100 % correct, or otherwise the reliability will disappear.

The way how the information is given can also be one valuable thing. If the announcement is coming thru EDI or by telephone from the customer service person, it may have a different “calm down” reaction. Human factor should not be underestimated. The supply chain has to be developed so that the working time in the customer service centers is directed to the profitable work not only exception handling. One thing is also working, “*if you do not hear anything, then everything is fine*”. This we need to trust.

Table 28. Supply chain visibility

E-business service	Comments	Benefits/Disadvantages	Points
Supply chain visibility	<ul style="list-style-type: none"> <li>the most important thing is to have customer side transparency to the supplier not vice versa</li> </ul>	<ul style="list-style-type: none"> <li>what supplier needs to see can be e.g. customers demand situation, stock situation and from this point supplier can do his job by the agreed principles</li> </ul>	3

The question about supply chain visibility was turned upside down during the conversation. Customers do not have necessarily need to see supplier’s actions. Rather it is seen that supplier needs to see what is happening on the customer side. Visibility is seen as a partnership thing.

Visibility (transparency) to the suppliers system is an intermediate phase in the process where customer need to:

- see what is in stock
- see cycle of production
- see ex-mill lists, when placing the order and see availability
- collected delivery times for different products

If anything these are the things which should be seen if something needs to be seen.

Supply chain visibility can also be seen thru VMI (Vendor-managed inventory), it can be a win-win situation for both parties. Things concerning the supply chain or these kinds of projects should be handled within supply chain organizations, *“purchasing and sales shall meet each other once a year.”*

With the question about visibility and can it be too transparent, the answer was a clear *“No.”* If there are no unclear things in the contract, there should not be fear about that. More than visibility itself, it should be configured more precisely. What is visibility, to whom it might concern and how wide range of information is needed to know?

Table 29. E-invoicing

E-business service	Comments	Benefits/Disadvantages	Points
E-invoicing	<ul style="list-style-type: none"> <li>electronic invoicing is a standard today's business</li> </ul>	- it should be widely used (maximize) (+)	<b>3</b>

In response to the question about electronic invoicing service (e-invoice) the simple answer was: *“there is need for that.”* Companies have to have capabilities to do that. Perhaps not every little company is able to implement that system but for the large-scale enterprises, e-invoice is required. E-invoice is a must if the level of automation is going be raised. In some circumstances electronic signatures are needed from the legal point of view in the invoice. Paper invoice is not needed if e-invoice is working.

Table 30. Self-billing

E-business service	Comments	Benefits/Disadvantages	Points
Self-billing	no comment		<b>3</b>

Self-billing can reduce bureaucracy in stock based models, especially in the consignment stock related businesses. Otherwise there was no comment, because the service itself was not known by the interviewed representative.

Table 31. Customer Portal.

E-business service	Comments	Benefits/Disadvantages	Points
Customer Portal	-	- portal can be good in that case if it can show delivery time →some extra value in the order making (+)	<b>3</b>

Portal can be a good tool for small and medium sized companies who do not have ERP systems. Order making and order confirmation in one second is possible, this makes switching off to another supplier expensive and becomes complicated. With portal the lock-in situation is easier to achieve. When the level of system integration is very high, then the need for portal is not so big.

Portal can be very useful in some cases. For example if there is a need to see what is in stock or a need to see order backlog, delivery times, order status, cycle of production. Thru the portal e-call-offs can be made or invoiced items, open invoices and delivery reliability can be checked or reports for supply evaluation seen.

*“There is time to use the portal, if it is the fastest way to get needed information.”*  
 If email is quicker than portal, then the customer uses email. Time is money; the response time is the key point here. Seeking information can be done so that views from ERP can be shown in portal. The customer’s needs have to be requested from the customer. These screens can be built using modules which can be changeable.

### 5.3.2 General discussion about e-services with the customer company

During the case study there were good discussions about the e-business services. One big common denominator that came up in the conversation is that there should be a basic e-services package which will increase level of automation but does not affect any business model (supply model) or –concept. This package should include: e-ordering, e-invoice and e-delivery note (waybill) (NEW).

It was seen that business transaction related services are the most needed ones; these services are the cornerstone from where it all begins. A new service, which had not come up earlier was e-delivery note. This is a good complement to the basic e-business package. This basic e-services package should be marketed to every customer: small-, medium-sized and large-scale enterprises. This basic package includes two (2) original e-services.

Customer's need for the other three e-business services was seen as a business model related issue. These services depend on the supply model or –concept. The following issues were raised up during the conversation:

- need for these services comes from the customer
- E.g. MTO –production the **customer portal** is very useful. In that case the customer takes the lead.
- Consignment stock is related to **self-billing**
- In VMI –concept **supply chain visibility** is needed. Especially transparency from customer to Metsä Board direction
  - needs to be described in more detail

These three services are business model related and come with the contract or agreement. It was seen that the concept must include the identification of customer needs. **Order tracking** –service has not such a big influence; it is mainly needed for exception handling.

Table 32. E-services packages

OPERATION	REQUIREMET
PACKET 1 Basic e-business service packet	Available as soon as possible, all customers. Contents: - e-ordering - e-invoice - e-delivery note
PACKET 2 Extended e-business service packet	These services are depending on type of customer, business, supply model or –concept. The implementation of this packet right after basic package has been launched.

All six (6) e-business services do not belong together; services are dependent on the supply model and the nature of the business in question. Implementation order would be: first basic services package streamlined in a good condition, then others. The project can be started, for example, from NWC intensive businesses first. If the supply chain works in the ideal way, then the needs are e-business basic package and Supply Chain Visibility (including customer side). In that case the customer needs only to think what they need and when they want it.

#### 5.4. Comparison of the interview results with case study

The case study supported the interviews. Messages received from the markets by Metsä Board were correct and in line with the customer's needs and aspirations. It is clear that the e-business services need to invest energy in and it has to concentrate on. Metsä Board cannot remain as a bystander in this development process. A project to create e-business services should have started many years ago.

The answers were at the same level and the same in the same tone. One important outcome was that all the services were also acceptable from the customer point of view. Only one issue came up as a new service and that was electric delivery note. That was a good counterpoint to Metsä Board e-business services offering. In the discussions between Metsä Boards interviewees and their customers, as with the case study company, there was already a very positive atmosphere when talking about e-business services. As it was said in the interviews, just talking about e-services is a positive thing.

In the next two tables the comparison between the interviews and the case study are shown.

Table 33. Similarities

<b>Metsä Board</b>	<b>Customer</b>
	e-business services are needed
e-business services can reduce workload and allow employees to do more profitable work (Metsä Board & customers)	
	e-business services can make more profit by shortening lead-times
	e-business services are seen as a 21 <sup>st</sup> century way to make business

Table 34. Differences

<b>Metsä Board</b>	<b>Customer</b>
Order tracking is good tool in any cases (information to all parties)	Order tracking is a tool for exception handling
Supply chain visibility is a must. Customers are on track with their orders and call-offs all of the time.	Supply chain visibility must be transparent in both ways, not merely on the customer side.
All the e-services are needed	There should be basic e-service packet and the others must be considered after customer needs together with the supply model.
	ERP was in a big role from the customer side answers
	Portal can substitute if the small- or medium sized customer doesn't have ERP system in use.

In the big picture e-business services are here to stay. It was clearly seen that all kinds of services need to be available and that the future is in service development. Cardboard products are getting closer to each other and the global competition is hard, profit margins have become smaller already. Competition is hard; all the features which make the product or service distinguishable from others need to be discovered.

## 6 CONCLUSIONS

The original aim of this study was to determine which types of e-business services for board business would be necessary and useful for the Metsä Board. The second research topic was, in which order the services should be built up. It was interesting to study by interviewing, how, and which e-business services are needed and what are the market's expectations. It was noteworthy to find out that the market already has e-services by competitors - even globally.

This study has also shown that cardboard business has moved to the 21<sup>st</sup> century. Furthermore, communication is done mainly with e-mail and over the phone, but all signs point to the fact that there is no time anymore for this kind of work on either the customers or suppliers side. Purchasing and selling has also moved towards the Internet in the B2B –markets. Buyers and sellers are continuously used to using different IT-solutions, software's and Internet in their daily work. IT is no longer something to be afraid of; it is the real and necessary tool.

### 6.1 Analysis of the results based on theory

The first exercise was to figure out the basics and theories about e-business services overall. The theoretical framework in this study is to define how to introduce and adopt e-business services in an enterprise. The approach is based on customer needs. Theory and the interviews seem to go along with each other. Same difficulties, challenges and opportunities were seen in practice as well as in theory. The next important topics are visible in the relevant theory:

- Understanding the dynamics of e-business services: Companies should focus more on the characteristic differences between services and products. The future seems to be in service development and business model innovation. This is the only way to stand out from competitors. Products themselves are getting closer and closer to each other. Service innovation processes should continue to support product development and supply chain management simultaneously
- Service innovations and supply model development must be managed across organizations rather than just inside them
- Projects like Lean SCM should continue. There is a great opportunity to save money and make more profit by streamlining the supply chain (overall efficiency should be measured also in the supply chain)
- New business models need to be continuously examined and updated
- All kinds of joint operations with the customers need to be arranged.
- The goal has to be a strong and deep partnership with the customers, there is opportunity to start to do that with e-business services
- It is possible to get more customers with new age models and processes

Theory and practice goes together. E-business services possess features which can increase the everyday business to the partnership level. IT-solutions may offer a simple way for the customer to control its procurements and deliveries – even in the real time. That kind of flexibility gives the customer more opportunities to plan their production, stock levels or purchasing processes.

## 6.2 Analysis of the results based on interviews and case study

As described in the chapter 5 “Interview summary” the interviews and the case study were in alignment considering the e-business services. There is need for these services and the customers are demanding them. The field is ready for these services; first of all they already exist with the competitors and more services are coming into the markets all the time.

Some services already exist which are in use in different or similar businesses, have an opportunity to be used in Metsä Board's supply chain. Both cases were strengthening the opinion about these services' usefulness and that they can be put in action as soon as possible. There were slight differences in the nuances of the answers but they were all almost similar.

### 6.3 Results of the study

It is well understood that e-business services are taking more and more foothold on markets and e-services have become true also in business-to-business markets. It is clearly shown that in today's businesses, regardless of the industry, there is place for e-business services. After this study we can say that there is no other way in 21<sup>st</sup> century business making than to do it with IT-solutions.

The accurate description of these services is the most important thing to do. After that the IT-solution must be chosen, determination of the functions must be done precisely, implementation should be smooth and marketing for these services must be planned carefully.

These six (6) services can give value and benefits to the Metsä Board, mainly based on the customer need. All different kinds of functions, which are easy and fast to automate, should be done as soon as possible. Automation means less mistakes, makes things easier to use and faster to act. This means learning new things, away from the old habits both internally and externally. It can take a while but afterwards there are totally different possibilities to run transactions and make business. All the named e-services exist in the market and they are not new in content. Customers are already used to using them with Metsä Board competitors or suppliers or their partners.

The research questions were:

- 1) *What e-business services are needed?*
- 2) *In which order the needed services are going to be built up?*

The conclusion of the research is that there should be a basic e-business services package which is offered to all customers, not depending on the size of the company, but it should be offered to the companies with big volumes of the folding boxboard tonnages. This package will go together with the sales contract. This package is needed in the first phase.

After the e-business services basic package is ready and in use, all the rest of the e-business services should launch at the same time. These services which are related to the customer relationship and supply models can be designed together with the basic package but not published with it at the same time. E-business basic package has to be implemented with at least some of the customers before starting the next wave of services.

At the starting point there were six (6) unconnected services and now after investigation these are compressed as two (2) service packages which have strong internal connection.

- 1) E-business services basic package
  - e-ordering, e-invoice, e-delivery note
- 2) E-business services tailored package
  - supply chain visibility
  - portal
  - order tracking
- 3) Self-billing is only related to the consignment stock service.

Package number 1 is prioritized in the category as soon as possible. Package number 2 is recommended to launch right after the number 1 is fully implemented in the markets. Self-billing can be attached to consignment stock. Package number 1 is defined as a process description in appendix 2. These two e-business service packages are described as part of the service concept in appendix 3.

E-business is part of the modern board business; all described e-services are needed. One (1) new e-service demand arose during the investigation, electronic delivery note. E-services can be easily connected to different supply models.

#### 6.4 Further development

There is need for the e-business services in the existing board markets. This study has described some necessary requirements for further development of e-business services. The opportunities of e-business services are important to discover, there is a possibility to create room for growth and more profit. E-business services can give more efficiency in information processing. There is also a possibility to ensure the up-to-date flow of information, the integrity and accuracy of information can be ensured when using advanced automation systems. At the same time the availability of information will be at a higher level. Using the e-business solutions for business processes streamlining, the processes will be faster when the exchange of information is automated. The number of errors is reduced by the reduction of human factor; it also has a restrictive influence on duplicated work. Interactivity and electronic service channels increase customer orientation and improve customer satisfaction.

Service development is a keyword in today's supply chain management. All kinds of services which can improve performance, save money, make more profit, reduce workload or make less mistakes should be discovered, examined and implemented.

These e-business service packages should be built up together with the Lean SCM supply models. Supply models need e-business services as a supporting element to be able to operate optimally. E-business services will add more value to the supply models. The supply models and e-business services are shown in a matrix in the table 35. The table can be a tool for salesmen when customer is choosing supply models and supporting e-business services.

The goal of study was achieved. Described services, the need for them and their construction order are now known. Services are to be packaged; this will bring significant added value to the individual services and emphasizes the importance of them. Work can be used to move to the next phase, which can be to start an e-business services solution project.

Table 35. E-business services and supply models connections.

		Supply models					
		1	2	3	4	5	6
E-business services		Direct mill orders	Customer dedicated stock	Convert-to-order	Vendor managed inventory	Consignment stock	Common stock
1	e-Ordering	X	X	X		X	X
2	e-Invoicing	X	X	X	X	X	X
3	e-Delivery note (NEW)	X	X	X	X	X	X
4	Self-Billing					X	
5	Order Tracking	need for this service comes from the customer					
6	Supply Chain Visibility	need for this service comes from the customer					
7	Customer Portal	need for this service comes from the customer					

Customer portal can be seen as a part substitute for ERP –system in the companies which are not using ERP or in their size not intending to implement such heavy programs.

## 6.5 Conclude

The company must focus more on its service production – its core competence, the board research and development, is in good control. Within Metsä Board, there are a lot of different areas of expertise, which could be more widely used. The future is in services development and innovation as well as supply chain development. Service innovation and development must cover the entire organization, not just separate departments. Such projects like Lean SCM must continue – they have direct impact on productivity and financial performance. New business and service models need to be developed and examined continuously. Joint projects with customers are also essential.

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Itselaskutus1.

### **Interview**

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### **APPENDICES**

APPENDIX 1: Theme interview questions

APPENDIX 2: Process description about e-business service package number 1  
“Basic package”

APPENDIX 3: E-business service packages descriptions as part of the service concept, part 1 and 2.



Metsä Board  
Timo Salo

5.3.2013

## Dear Sir

In this document you will find the interview questions for my MSc thesis / Lean SCM -project analysis. Thesis title is: "E-business solutions as part of a customer service portfolio."

The questions are divided into two areas, the customer- and Metsä Board points of view. I kindly ask you to explore these questions in advance.

The interview will be made as theme interview. Interviews will be carried out primarily via Live Meeting software. Interview will take time approx. 1-2 hour(s).

## Interview questions:

### 1 CUSTOMER POINTS OF VIEW

1. How do you see e-business needs for our customers?
2. What kind of e-business services customer needs?
3. Are the customers ready / willing to implement new services / new business models?
  - 3.1. e-Ordering
  - 3.2. Order Tracking
  - 3.3. Supply Chain Visibility
  - 3.4. Electronic Invoicing
  - 3.5. Self-Billing
  - 3.6. Customer Portal
4. Do the customers already use similar services with other folding boxboard manufacturers etc.?
5. How does the customer experience E-business?
6. Are the customers willing to pay for e-business activities and / or -services?

### 2 METSÄ BOARD POINTS OF VIEW

1. What are the benefits from E-business?
  - 1.1. What kind of value we can get from E-business services?
  - 1.2. Value creation for customer customers? For example, brand-owner?
2. What supply models will benefit from the e-business services? Which e-business services?
3. Does the E-business relief workload in customer service?
4. Electronic services reduce errors, are there problems in that?
5. E-business can streamline the flow of information, are there problems?
6. Can we achieve with E-business services a "lock-in" situation, so that the value for customer is so high that the customer commits itself to Metsä Board for a long time?
7. A strong partnership will strengthen the market position. With e-business services we can deepen the partnership with the customer. How strong partnership is worth striving for?
8. Do the e-business services support "traditional" customer relationship management? Visits, wining & dining?

## Timo Salo

Project Manager/MSc Student

## Metsä Board Corporation, Äänekoski

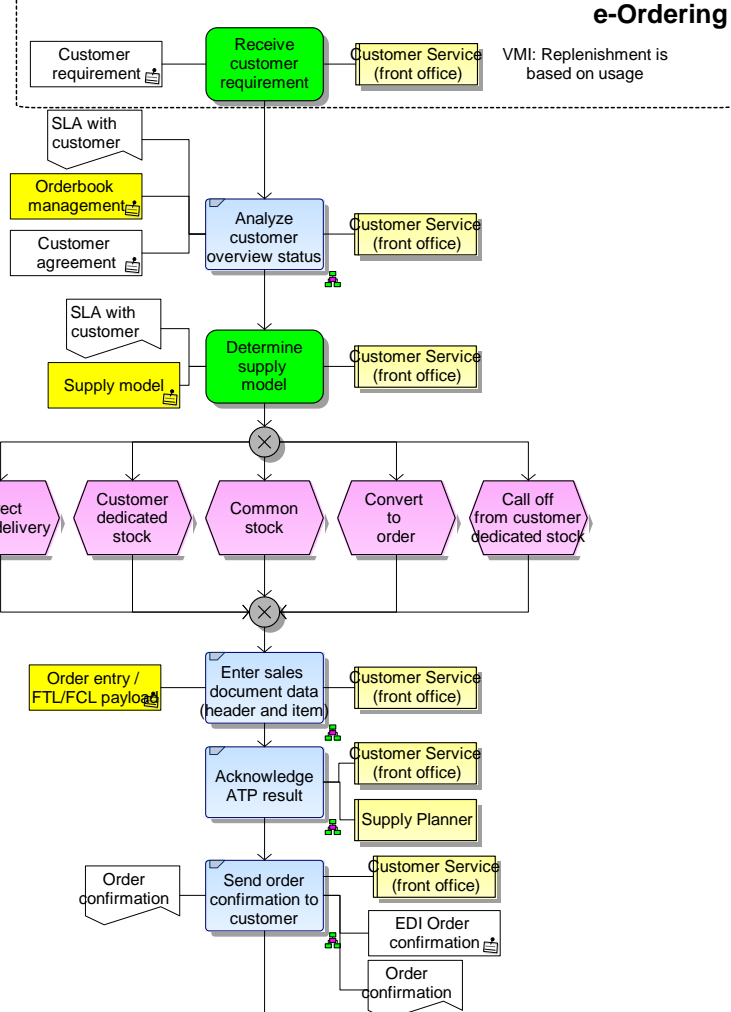
Mailing address: P.O. Box 400, FI-44101 Äänekoski

Tel.: +358 (0) 50 5980 084

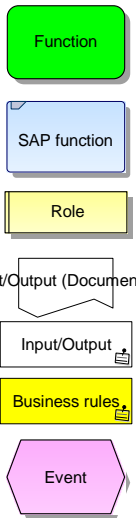
email: timo.salo@metsagroup.com

Manage customer requirement/order

**e-Ordering**

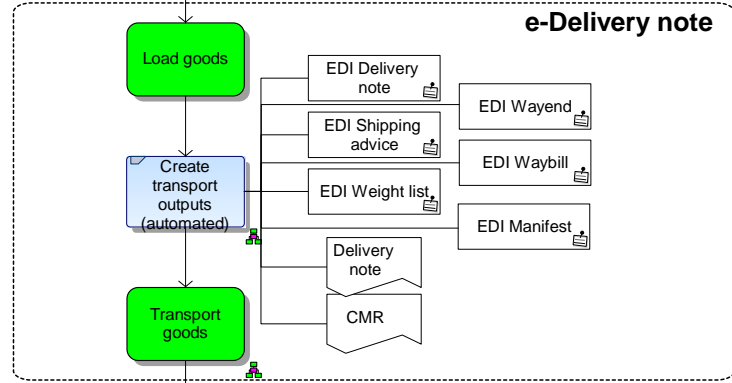


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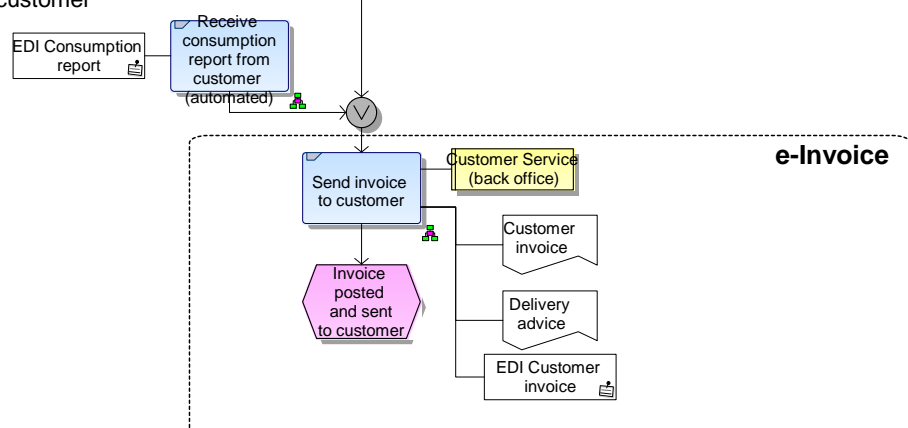
Manage transportation and stocks

**e-Delivery note**



Invoice customer

**e-Invoice**



## **e-Business packet 1 `Basic package`**

**PACKET 1 includes: e-ordering, e-invoice and e-delivery note**

### **E-ordering**

Provide the customer the option to place an order and call-off goods, make changes to previously placed orders and receive order confirmations through an electronic channel. Possible electronic channels include for example customer portal and Electronic Data Interchange (EDI) between Metsä Board and customer systems. Implementing e-ordering through the portal requires establishing links between the portal and Metsä Board systems. Furthermore, customers must be provided access to the portal and trained to utilize its functionalities. Customer service support is crucial in securing smooth order intake during the transition.

### **E-invoice**

E-invoicing is becoming a business norm nowadays. More and more customers are requiring e-invoicing to be part of the generic service and pre-condition for conducting business with them. This service can be provided to the customer via business-to-business integration services where the invoicing transactions are transferred e.g. via EDI to the customer (refer to B2B integration service package). This delivery options is already available and is supported by existing Metsä Board systems.

### **E-delivery note (waybill)**

A document accompanying a shipment of goods that lists the description, and quantity of the goods delivered. A copy of the delivery note, signed by the buyer or consignee, is returned to the seller or consignor as a proof of delivery. Deliver note can be send via EDI to the customer.

## **e-Business package 2**

### **PACKAGE 2 includes:**

#### **Supply chain visibility, Customer portal, Order tracking and Self-billing**

### **2A (Priority 1)**

#### **Supply Chain Visibility**

Offer possibility for customers to access a customer portal or ERP system to view and analyze the customer specific supply chain information online. Key information includes:

- Demand information i.e. forecasts, order history, order backlog
- Supply information i.e. stock availability, (common stock, customer-dedicated stock, VMI, Consignment) in transit goods, delivery history

Offering a view to the demand-supply information enables the customer to better plan e.g. purchases, their own operations etc.

The benefit of this service is to increase supply chain visibility between Metsä Board and its customers and offer possibilities for service performance improvement in customer-supplier relationships. Additional visibility reduces the need for speculative ordering thus decreasing the abnormal ordering behavior in the supply chain.

#### **Customer Portal**

A key aspect of a customer-centric strategy is the customer portal. Customer portal permits the creation, sharing and distribution of personalized content, as well as access to self-service capabilities. From Metsä Board's perspective, portal enables the segmentation, compilation and delivery of communications and service experiences for higher satisfaction. The information on the site must be targeted to the specific customer profile or service level the customer is eligible for. Customer portal can be used also as a substitute for ERP –system in small- or medium sized customer companies

**2B (Priority 2)****Order Tracking**

This service is about enhancing the supply chain visibility for customers. The order tracking service enables customers to follow the status of their orders as they progress through the Metsä Board supply chain all the way to the customer site. Instead of calling to customer service centers, customer can access Metsä Board order tracking tool to check the progress of their order. Customer portal is used for data transmission.

**Self-Billing (consignment stock service package)**

This service is about allowing the customer to bill itself and send the self-billing documents to Metsä Board. These self-bills refer to the deliveries and corresponding receipts or stock consumption, and the amount that is settled and paid. this service requires that the transactions between the customer and Metsä Board are done by supporting business-to-business integrations i.e. the business documents must be send with EDI. Manual versions of this service are not allowed.